



# Navjeevan Term Books

standard  
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Teacher's Copy

## Books - 1 to 4

- ◆ English Balbharati
- ◆ मराठी सुलभभारती
- ◆ हिंदी सुलभभारती
- ◆ General Science
- ◆ History & Civics
- ◆ Geography

 **NAVJEEVAN**

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## Book - I

### Topic 1.1 : Past, Present, Future

#### Answer the following

##### Q.1.

Ans.	A	B	C
1.	The past	A soft and mild autumn evening	A pleasant time which has ended
2.	The present hour	A green and flowery spray where a young bird sits	A time, full of life in which you gather strength
3.	The future	A sea beneath a cloudless sun	An exciting, thrilling time which has no end

**Q.2.** (1) The wind in the autumn evening is soft and mild and it sighs mournfully.

(2) The young bird mounts the green, flowery spray, gets a lot of strength from that and then flies away.

(3) The sea is mighty, glorious and dazzling, it stretches on and on forever.

**Q.3.** (1) On a green and flowery spray. (2) infinity.

#### Comprehension

**Q.1.** (1) The past is compared to an Autumn evening.

(2) The future is compared to a sea.

(3) The young bird sits on a green and flowery spray.

(4) The words mighty, glorious and dazzling are used to describe the sea.

**Q.2.** According to Emily Bronte, the past is like a soft and mild autumn evening that keeps mourning softly. The present is

like a green and flowery spray and the future is like a mighty, glorious and dazzling sea beneath a cloudless sun.

**Q.3.** (1) The rhyme scheme of the first stanza is abab.  
(2) (a) Personification - Wind is given human qualities.  
(b) Metaphor - hidden comparison.  
(c) Hyperbole - the statement is exaggerated.

### Grammar / Language study

**Q.1.** (1) old English word for the pronoun 'you' (2) sadly  
(3) cluster of branches and leaves (4) powerful

**Q.2.** (1) autumn-soft, mild (2) green, flowery  
(3) mighty, glorious, dazzling

**Q.3.** (a) The past is an autumn evening.  
(b) The present is a green and flowery spray.  
(c) The future is a sea beneath a cloudless sun.

### Topic 1.2 : Odd One In

#### Answer the following

**Q.1.**

Malti	Rima
Oily hair and very long skirt	Smart and neat
Good in studies	Good in studies
Very melodious and well-trained voice Sang Hindi songs	Good voice Sang English songs
Always ready to help others	Thought she was the best and looked down on others
Poor English pronunciation	Too much of an attitude and ego

**Q.2.** The girls in the school made fun of me because of my bad pronunciation. My English was weak and hence I asked Rima to help me improve my English language, since she spoke the language very well. Rima and her friends, never lost the chance to make fun of me. Rima mocked me mercilessly for saying 'aks' instead of 'ask', Rima told me that speaking English would not be an easy thing for a countrified person like me.

**Q.3.** (1) (a) getting comfortable in a new situation.  
(b) making fun of somebody while uttering words that show contempt or dislike.  
(c) could not be tolerated or bad behaviour.  
(2) (a) something you are particularly good at.  
(b) gave false idea of something.  
(c) made friends with someone who had no friends.

**Q.4.** (1) Rima decided whether Malti was smart or not by her oily hair, long skirt and poor pronunciation in English. I feel that the outward appearance does not tell you whether the person is smart or not. One must see the academic performance of the person and also see how the person reacts in different circumstances.

(2) No, Rima and her parents do not share the same attitude. Rima was informed by her father, that the people from the state from where Malti came were very smart people specially in Maths. Her parents sometimes found Rima unbearable. They actually hoped that she and her friends would not make things difficult for Malti.  
(3) Malti must have wanted to say "please mind your own business" or "please do not make fun of me."  
(4) Rima came first in her category, but Malti had won the

singing competition in the Hindi section. She had a melodious and well-trained voice and there was absolute silence when Malti was on stage. When Malti finished singing, the Principal was the first to start clapping followed by the teachers and other students. Rima could not bear this. She felt this was an insult to her, hence she felt no joy even though she won the prize.

(5) The girls in Rima's clique are Neha, Clara, Shahnaz.

## Comprehension

## Grammar / Language study

**Q.1.** (1) melodious, well-trained      (2) Rima, gang  
(3) sang - verb; beautifully - adverb

**Q.2.** quietly, specially, uncharitably, sharply, snidely, abundantly,  
slowly, readily, stubbornly, particularly, roundly.

### Topic 1.3 : In Time of Silver Rain

### **Answer the following**

**Q.1.** rain - again, plain; heads - spreads; wings - sing;  
cry - sky; too - new.

**Q.2.** 'In time of rain, when spring and life are **renewed** the butterflies lift **their silken** wings to catch a **rainbow** cry and trees put forth **new** leaves to sing in **joy** beneath the sky as **passing** boys and girls too **go** singing down the roadway.'

**Q.3.** (1) The poet is talking about rain that has come after a long time.  
(2) Yes, the boys and girls are very happy that it is raining.

**Q.4.** My favourite season is the monsoon season. The rain brings relief from the heat. Once it rains, everything becomes green. The dried up earth wakes up to moisture, fresh roots and greenery all around. Bare trees sprout new roots and bare branches are seen covered with new leaves. Nature swings to the rhythm of the wind and the rain. Rain is a blessing to the earth and to mankind.

## Comprehension

**Q.1. (1)**

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graph TD
    A[earth puts forth new life] --> B[green grasses grow]
    A --> C[flowers lift their heads]
    A --> D[butterflies lift their silken wings]
    A --> E[trees put forth new leaves]
    A --> F[boys and girls sing]
    B --> G[new rain]
    C --> G
    D --> G
    E --> G
    F --> G
  
```

**Q.2.** During the time of silver rain, the face of the earth completely changes. The earth puts forth new life, green grasses are seen on the surface, flowers are happy, hence they lift their heads. New rain brings life to everything on the earth. The butterflies lift their silky wings and trees put forth new leaves. The boys and girls are happy, hence we hear them singing. Everywhere we can see new life.

**Q.3.** (1) abacdad  
(2) (a) Alliteration - the sound of 'g' is repeated.  
(b) Repetition - 'of life' is repeated for stress.  
(c) Personification - trees are given human quality of singing.  
(d) Antithesis - 'boys' and 'girls' of opposite gender.

### Grammar / Language study

**Q.1.** (a) Green grasses grow      (b) To catch a rainbow cry.

**Q.2.** Lucky Lucy likes lollipops.

Bob bought a big brick.

Sally sells seashells.

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### Topic 1.4 : The King's Choice

#### Answer the following

**Q.1. The lion** - The lion was the king of the forest. He was called the king. The other animals gifted him with many things, but the more he had, the more he wanted. He wanted a court, hence he made the fox his adviser, the leopard his body guard and the vulture his messenger. The lion king always took the advice of his courtiers. The lion king was kind to those who were true to him.

**The fox** - The fox is a wise and clever animal, hence the king made him his adviser. The fox was very loyal to the lion king for sometime. He was very clever and decided to get the camel to the lion king. He managed to do so by lying to the camel who believed him. The lion king was very pleased with the fox. Finally the fox betrayed the lion king by running away.

**The leopard** - The leopard is very watchful and swift footed, hence he is the best animal to be the body guard of the lion king, since he can be alert and always be there to look after the king. However the leopard too has his own ideas, and is not honest and faithful to his lion king.

**The vulture** - This is a bird that can fly high and be used as a messenger. This is true, but the vulture inspite of being one of the courtiers in lion's king court, always puts himself first and keeps thinking of his own benefits and not about his king.

**Q.2.** (1) The king is the ruler of such a vast domain. There are thousands / millions of subjects he has to look after. He cannot solve every problem on his own. He needs an adviser, people to look after him i.e. body guards, to guard him, people to take his messages to and fro, members of the council, etc. One man cannot make so many important decisions on his own, hence he needs a court.

(2) (a) **King** : The king must be wise to make out exactly what is going on in his kingdom. He must be impartial and see no difference in his subjects when giving his judgement. He must be brave to lead the way in battles so that his soldiers look up to him and fight bravely.

(b) **Adviser** : He must be loyal to his king and give correct advice without thinking of his friends. He

must be wise to understand the problem the monarch is facing. He must be unbiased and think of everyone as equal.

(c) **Bodyguard** : Must be alert at all times, since there can be an attack on the monarch at any time. Must be brave and fearless to look after the king.

(d) **Messenger** : Must be ready at all times to deliver messages from the king and get messages to the king. Must be brave and fearless.

(3) An oath of loyalty is a solemn promise made by the person to be by your side and guard and guide you whatever the circumstances are. The fox must have said, "Your Majesty, I shall always be by your side and offer my advice when you ask for it. I shall never leave you."

The leopard must have said "Your Majesty, I am thankful that you have chosen me as your body guard, I shall always be with you and see that no harm comes to you."

The vulture must have said, "Your Majesty, I am very thankful that you have chosen me as your messenger, I shall go to and fro delivering your messages and keeping you informed of everything."

(4) When the vulture told the king and his courtiers about the camel in the desert, the fox and the leopard did not know the desert. But they did not want the vulture to seem wiser than them, hence they said that since it was the vulture's idea, he should lead the way.

(5) The habitat of the lion and camel are absolutely different. The lion lives in a forest while the camel lives in a desert. The lion never goes to the desert because

of the extreme heat and open terrain, hence he had never seen a camel.

(6) The fox and the leopard said that since it was the vulture's idea, he should lead the way. This was not based on good and sound thinking, but on the fact that they did not want the king and the vulture to know that they had no idea of the desert at all.

(7) Yes, according to me the vulture was enjoying the search.

(8) Yes, I think the king's decision to go back was right.

(9) The fox wanted to be the only one in the king's favour. He was selfish but very smart. He did not want the leopard and the vulture to be in the king's court, hence he thought of a plan to get the camel to the king so that the lion king would be highly pleased with him and would favour him more.

(10) Animals like the camel who are docile and meek will surely get frightened of the jungle animal like the fox. In order to win the trust of the camel and follow him without getting scared, the fox addressed the camel as 'friend camel'.

(11) The leopard wanted to run away, the desert sun was too strong and the sand was too hot. The king's advisers were all frightened. They did not know how to get the king back home. The vulture was at an advantage, he wanted to watch and wait and eat the lion later on.

The clever fox had an idea of how to get the camel to the king and he set about it quickly. All these courtiers were shrewd and cunning.

**(12)** The fox, the leopard and the vulture were all very hungry and tired, when they reached the forest. They looked at each other and smiled hungry smiles. They had brought the camel for the king's dinner and according to them it was time for the feast.

**(13)** Yes, I expected the king to be kind to the camel. Yes, his decision was right. He was the king of the animals in the forest, he would be kind to an animal from the desert.

**(14)** The courtiers had to obey the king, because they had taken an oath, when they were appointed as members of the king's court that they would listen to him and obey him. They could not afford to make their king angry.

**(15)** Actually, the courtiers were not being loyal to the king. They showed the king that they were going out to get food for him but they sat down in a safe place and discussed what they could do.

**(16)** The camel, basically a mild animal, decided to offer himself to the king. He is being thankful to the king for offering him a home. He tried to say that since the leopard, fox and vulture were the king's advisers and friends of the king, they were more important to him than he was.

The camel is shown as thankful, kind and loving.

**(17)** The king had his doubts about the fox, the leopard and the vulture. He knew that they were planning something. He understood that they cared only for themselves and not for him. When they ran away, the king knew that he had been right in doubting his courtiers.

**(18)** No, the 'friend' is not a position in the court. Those in the court are advisers, guards, messengers, etc. A friend is intimate and close to the king here. This friend is the camel who was loyal and good.

**Q.3.** water - litre; milk - litre; distance - centimetre, metre, kilometre; weight - grams, kilograms.

**Q.4.** Physically violent and frightening.

### Comprehension

#### Extract - 1

**Q.1.** (1) they followed him (2) my messenger  
(3) wise and clever creature (4) watchful and swift of foot

**Q.2.** (1) The fox, the vulture and the leopard took an oath of loyalty to the king.  
(2) The leopard was chosen as the king's bodyguard.  
(3) When the king roared, they stood in awe.  
(4) When the king went hunting they found the animals for him to kill.

**Q.3.** (1) wise and clever (2) watchful and swift-footed  
(3) ability to fly high

<b>Q.4.</b>	<b>Noun</b>	<b>Verb</b>	<b>Adjective</b>
(a)	watchfulness	watch	watchful
(b)	loyalty	X	loyal
(c)	protection	protect	protected
(d)	height	heighten	high

**Q.5.** The king decided to have courtiers because the more he had the more he wanted. He called the fox and told him that he was wise and clever, hence he wanted him to be his adviser. The king next called the leopard and said that since he was

watchful and swift-footed, he wanted the leopard to be his bodyguard. Finally the king told the vulture that since he could fly very high he could become the king's messenger. He asked for their loyalty and promised to give them food and protection. The three agreed and became the king's courtiers.

## Extract - 2

**Q.1.** (1) His plan (2) The king  
(3) The vulture (4) On the camel

**Q.2.** (1) (a) False - First the vulture stepped forward (b) True  
(c) False - The lion laughed to see them go (d) True  
(2) (a) good, grateful, happy, loyal  
(b) camel, lion, offer, others  
(c) seen, shocked, stepped, suffer  
(d) king, life, sat, subject

**Q.3.** (1) jump at the camel (2) the vulture aside  
(3) in the forest again (4) but to be kind is better

**Q.4.** **Subject** **Predicate**  
(1) The courtiers / I had to obey the king,  
(2) The vulture / stepped forward  
(3) The lion / laughed to see them go  
(4) The camel / was happy and grateful

**Q.5.** Personally, I feel that the courtiers were not at all loyal to the lion king. They took an oath to be loyal to him, but whenever there was a problem, they thought about their own benefits. They got together and planned how to save themselves and cheat their king. They were not honest at all. They were very deceitful and tried to find out ways and

means of gaining from their post. They cared for nobody except themselves.

## Grammar / Language study

<b>Q.1. Countable nouns</b>	<b>Singular</b>	<b>Plural</b>
leopards	leopard	leopards
animals	animal	animals
courtiers	courtier	courtiers
Camel	Camel	Camel
Vulture	Vulture	Vulture

## Topic 1.5 : Seeing Eyes Helping Hands

### **Answer the following**

**Q.1. (a)** (1) A formal invitation (2) A notice  
(3) An oral invitation (4) Another oral invitation

(1) The students of New Vision High School.  
(2) The programme is the inauguration of the project 'Seeing Eyes, Helping Hands'.  
(3) "Seeing Eyes, Helping Hands" is the name of the project.  
(4) Smt. Vimala Naik, the former Principal of New Vision High School will inaugurate the programme.  
(5) Dr. A.M.Chaudhary, the Dean of the New Life Medical College and Hospital will preside over the function.  
(6) The function will start at 10.00 a.m. in the morning.  
(7) It will take place at the Assembly Hall. New Vision High School, Off Main Street, Girgaon.

**(8)** Six names get mentioned in the invitation.

**(b)**

Points covered	A	B	C	D
(1)	✓	✓		
(2)	✓	✓	✓	✓
(3)	✓	✓	✓	✓
(4)	✓	✓		
(5)	✓	✓	✓	✓
(6)	✓	✓	✓	✓
(7)	✓	✓	✓	✓
(8)	6	3	1	2

**Q.2.** We

Mr. Amit Athaide (Son) and Mrs. Rance Rodrique (Daughter)  
solicit your presence at  
the Silver Jubilee Anniversary  
of our parents Mr. and Mrs. Athaide  
at the hands of  
Rev. Fr. Percinal Fernandes  
the Bishop of the Catholic Congregation  
and  
Fr. Joaquim D'Silva  
The Incharge of the Congregation

**Date :** Sunday 10th Oct. 2017

**Venue:**

**Time :** 7 pm - 10 pm

St. Ignatius Church,  
Jacob Circle.

**Q.3. Ranee** : Hello Prudence! How are you?

**Prudence** : I am fine. How are you? I know Uncle and Aunt are very soon going to celebrate their silver wedding anniversary.

**Ranee** : Yes, that is the reason I have called; to invite you and your family for this ceremony.

**Prudence** : Of course. We all remember this date.

**Ranee** : The ceremony will be in St. Ignatius Church, Jacob Circle at 7.00 p.m. on the 10th of October, 2017 and will be followed by dinner at our residence.

**Prudence** : Surely, I will convey this message to my parents. All of us will be there.

**Ranee** : I hope to see all of you. Good bye.

**Prudence** : We will all be there. Bye.

**Q.4.** Shakila called up around 4 p.m. She has invited all of us to the inauguration of the Drama and Speech show in St. Ignatius School Hall on the 20th of December, 2017 at 5.00 p.m. in the evening.

### Topic 1.6 : A Collage

#### Activity

**Q.1.** (To be done by students)

# मराठी सुलभभारती

## १. प्रार्थना

विद्यार्थ्यांनी स्वतः कृती करा.

## २. श्यामचे बंधुप्रेम

### स्वाध्याय

प्र.१. (अ) नवीन पाऊस सुरु झाल्यावर मातीचा एक रम्य सुंदर वास सुटते.  
 (आ) खाऊच्या पैशांतून लहान भावास नवीन कोट किंवा सदरा शिवायचा असा निश्चय श्यामने केला होता.  
 (इ) श्यामच्या आईने लहान भावास सांगितले, तुझे अण्णा, दादा मोठे होतील, कामधंद्याला लागतील. मग तुला सहा महिन्यांनी नवीन सदरा शिवतील. अशा प्रकारे आईने लहान भावास समजावले.  
 (ई) श्यामचे वडील कोर्ट-कचेरीच्या कामासाठी वरचेवर दापोलीला जात.  
 (उ) खाऊच्या पैशांतून लहान भावासाठी शिवलेला कोट घेऊन कधी एकदा त्याला नेऊन देतो असे श्यामला झाले होते. म्हणून त्याला चालण्याचे श्रम वाटत नव्हते.

प्र.२.

### श्यामला थंडीच्या दिवसांत न मिळणाऱ्या गोष्टी

मफलर	जाकिटे	गरम कोट
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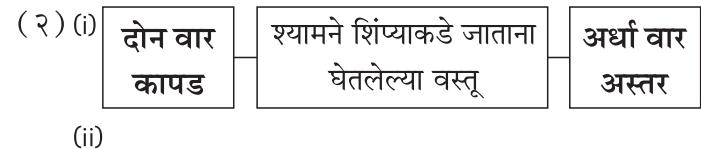
प्र.३. (अ) स्वतःसाठी खाऊचा एकही पैसा न खर्च करता त्या पैशांतून श्यामने लहान भावासाठी नवीन कोट शिवला. नवीन कोट मिळाल्यावर भावाला होणाऱ्या आनंदाचा विचार मनात आला. त्याचा हट्ट आपण पूर्ण करू शकलो म्हणून श्यामचे ढोळे अश्रूनी न्हाले होते.  
 (आ) श्याम ज्यांच्या घरी राहायचा त्यांना श्यामची काळजी वाटत होती. पावसाळ्याचे दिवस होते. नदीनाल्यांना पूर आले असतील. अशा परिस्थितीत श्यामने जाणे त्याच्या जीवाला धोकादायक होते. म्हणून श्याम ज्यांच्या घरी राहायचा त्यांनी 'जाऊ नको' असे म्हटले.  
 (इ) पावसाळ्याचे दिवस असल्यामुळे नदीनाल्यांना पूर आल्याने पिसईच्या पऱ्ह्याला ओढ फार असल्यामुळे तो दुथडी भरून वाहत होता.

(ई) वडिलांनी दिलेले खाऊचे पैसे स्वतःसाठी खर्च न करता श्यामने लहान भावासाठी नवीन कोट शिवला. तो कोट घरी घेऊन येण्यासाठी श्यामला अनेक अडचणींना तोंड द्यावे लागले. श्यामचे आपल्या लहान भावावरील निःस्वार्थी प्रेम पाहून आईला गहिवर आला.

### कृतिपत्रिका - १

#### उतारा क्र. १

प्र.१. (अ) (१) (i) दापोली  
 (ii) गंधवती पृथ्वी



लेखकाच्या घरातील माणसे	आई	श्याम	वडील	श्यामचे भाऊ
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सूचना : Term Book मध्ये ३ Box दिलेले आहेत जे ४ आहेत.

(३) मी माझ्या भावासाठी नेहमी बुद्धीला चालना आणि हातांना काम देणारे खेळ घेतो. असे खेळ दिल्यामुळे त्यालाही गुंतवून ठेवता येते. आता तो बच्यापैकी मोठा झाला आहे. त्यामुळे त्याच्यासाठी मी आता चित्रे असलेली गोष्टींची पुस्तके घेतो. छोटे छोटे प्रयोग असणारी विज्ञानाची पुस्तके घेतो. या भेटवस्तू मी त्याला त्याच्या वाढदिवसाला देतो. मे महिन्याच्या सुट्टीत आणि दिवाळीच्या सणाला देतो.

### कृतिपत्रिका - २

#### उतारा क्र. २

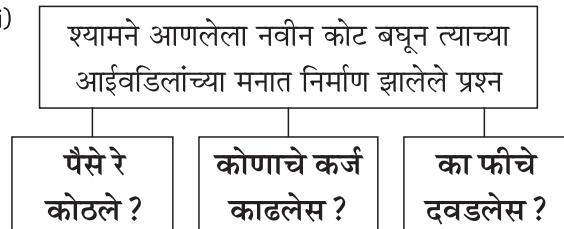
प्र.१. (अ) (१) (i) खळखळ (ii) नानेटी  
 (२) (i) चूक (ii) बरोबर  
 (४) श्यामच्या धाकट्या भावाचा सदरा फाटला होता. श्याम दापोलीस शिकण्यासाठी होता. तेथे त्याने स्वतःच्या खाऊच्या पैशातून भावासाठी

नवीन कोट शिवून घेतला. गणेश चतुर्थीला घरी जाण्यासाठी तो कोट घेऊन निघाला तेव्हा पावसापाण्याचे दिवस होते. तेव्हा त्याच्या मनात आले पंख असते तर एकदम उडून गेलो असतो. कारण श्यामला स्वतःच्या पैशातून शिवलेला कोट कधी एकदा भावाला नेऊन देतो असे झाले होते आणि श्याम ज्या रस्त्याने घरी येणार होता त्या मार्गात असलेले पिसईचा पह्या, सोंडघरचा पह्या दुथडी भरून वाहत होते. त्यांना उतारही नव्हता. त्यामुळे त्याला जाण्यासाठी वेळही लागणार होता आणि अनेक अडचणीचा सामना करावा लागणार होता. पक्षी केव्हाही आणि कोठेही पंखांच्या मदतीने जाऊ शकतात. त्यांना जमिनीवरून, पाण्यातून चालत जावे लागत नाही. ते आकाशात भरारी मारून पाहिजे त्या ठिकाणी पोहोचू शकतात. श्याम सुखस्वप्नात दंग होता. त्याच्या हृदयात प्रेमाचा पूर आला होता म्हणून त्याला वाटले पंख असते तर एकदम उडून गेलो असतो.

### कृतिपत्रिका - ३

उतारा क्र. ३

प्र.१. (अ) (१) (i)



(ii) (अ) नवीन कोट (ब) पुरुषोत्तम (क) अण्णा

(२) (i) शिकवण (ii) दृष्टी

(३) श्यामने सांगितलेली हकीकत ऐकून आई शेवटी श्यामबद्दल म्हणाली, 'श्याम, तू वयाने मोठा नाही, पैशाने मोठा नाहीस, शिकून मोठा नाहीस; परंतु मनाने मोठा आजच झालास हो! हेच प्रेम बाळांनो, पुढेही ठेवा. या प्रेमावर कोणाची दृष्टी नको पडायला.

### खेळूया शब्दांशी

प्र.१. (अ) थंड × गरम	सापडणे × हरवणे	सुगंध × दुर्गंध
थोरला × धाकटा	जुना × नवीन	लक्ष × दुर्लक्ष
स्मृती × विस्मृती		
(आ) (१) <b>शब्द</b> - त्यांनी. कारण, इतर सर्व नामे आहेत व 'त्यांनी' हे सर्वनाम आहे.		
(२) <b>शब्द</b> : सातपुते. कारण, इतर सर्वनामे आहेत व 'सातपुते' हे नाम (आडनाव) आहे.		
(३) <b>शब्द</b> : हिमालय. कारण, इतर विशेषणे आहेत. 'हिमालय' हे विशेषनाम आहे.		
(४) <b>शब्द</b> : आम्ही. कारण, इतर सर्व क्रियापदे आहेत. 'आम्ही' हे सर्वनाम आहे.		

प्र.२. खालील वाक्प्रचारांचा वाक्यात उपयोग करा.

(१) रोजगारी होणे - कामधंद्याला लागणे

वाक्य : वडील गेल्यानंतर आपल्या कुटुंबासाठी महेश रोजगारी झाला.

(२) दुथडी भरून वाहणे - पूर्ण भरून वाहणे

वाक्य : पूर्ण नदीला पूर आल्यामुळे ती दुथडी भरून वाहत होती.

(३) निश्चय करणे - निर्धार करणे

वाक्य : सहामाही परीक्षेत चांगले टक्के मिळवण्याचा सुहासने निर्धार केला.

### क्रियाविशेषण अव्यय

प्र.१. (१) पूर्वी (२) नेहमी

प्र.२. (१) सभोवार (२) पलीकडे

प्र.३. (१) पटापट (२) हळू

प्र.४. (१) भरपूर (२) अतिशय

प्र.५.

कालवाचक क्रियाविशेषण अव्यये	स्थलवाचक क्रियाविशेषण अव्यये	रीतिवाचक क्रियाविशेषण अव्यये	परिमाणवाचक/ संख्यावाचक क्रियाविशेषण अव्यये
परवा, दररोज, क्षणोक्षणी	समोरून, वर, तिथे, पलीकडे	कसे, सतत, झटकन, टपटप, सावकाश	जरा, थोडा, अतिशय, पूर्ण, मुळीच

### ३. माझ्या अंगणात

#### स्वाध्याय

प्र.१. (अ) कवीच्या अंगणात गळ्हाची आणि ज्वारीची रास पडते.

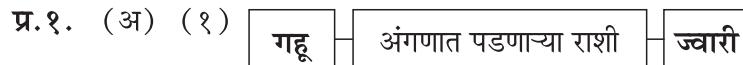
- (आ) रानमेवा कवीच्या अंगणात उगवला आहे.
- (इ) एकमेकांना देत-घेत, एकत्र बसून आपण रानमेवा खाल्ला तर आपल्यातील प्रेम, वात्सल्य, बंधुभावाची भावना वाढीस लागते. आपसातील मतभेद विसरून सर्वजन आनंदाने राहतात, म्हणून कवी रानमेवा गुण्यागोविंदाने खायला सांगत आहे.
- (ई) कवीच्या अंगणात दाणे टिपण्यासाठी पाखरे येतात.

प्र.२. (अ) गहू शाळवाचं मोती

काळ्या रानात सांडलं.

- (आ) काळ्याशार मातीतुनी  
मोती-पवळ्याची रास.
- (इ) जीव दमतो, शिणतो  
घास भरवते माय.
- (ई) दिला-घेतला वाढतो रानातला रानमेवा,  
तुम्ही आम्ही सारेजण गुण्यागोविंदानं खावा.

#### कृतिपत्रिका



- (२) (i) दिल्या घेतल्याने
- (ii) काळ्याशार मातीतून
- (३) रानमेवा म्हणजे दच्या-डोंगराच्या रानातली आंबट, तुरट, गोड अशा प्रकारची फळे. ती खाल्ल्यानंतर जिभेवर रेंगाळणाऱ्या चवीमुळे कुठेतरी अनोखी तृप्ती मनाला लाभते.

सर्वसाधारणपणे रानमेव्यात करवंदे, जांभळे, चिंचा, बोरे, आळू, तोरण, मलबेरी / तुती इ. स्थानपरत्वे यात एखाद दुसऱ्या फळांची भर पडते. आडरानात असलेली, ठराविक मोसमातली फळे रानमेव्यात येतात.

डोंगरची काळी मैना उर्फ करवंदे, गावठी बोरे, जांभळे-यातही रानजांभळे वेगळी. कमी गर असलेली तसेच आळू हे चिककूसारखे दिसणारे व आंबट गोड चवीचे फळ, जाम म्हणजे पांढरट व काहीसं पिस्ता रंगाचं फळ, ताडगोळे एक रसदार, उन्हाच्या काहिलीत थंडवा देणारं फळ, रायआवळा हे एकदम छोट्या आकाराचे आवळे, रानातला हा रानमेवा गुणांच्या बाबतीतही श्रेष्ठ. चवही एकदा खाल्ल्यावर जीभेवर रेंगाळणारी. आंबट-तुरट गोड चव असणारा रानमेवा आरोग्यासाठी खूपच उत्तम असतो. रानावनातल्या निसर्गातिलं हे फळाचं वैभव लक्षणीय असे आहे.

- (४) दिवाळीच्या सुट्टीत गावाला, मी बाबांबरोबर शेतावर गेलो होतो. हिरवेगार शेत पाहून मला खूप आनंद झाला. मोत्यासारख्या टपोऱ्या दाण्यांनी भरलेली ज्वारीची कणसं वाच्यावर डुलत होती. वाच्याची झुळूक येताच, समुद्राच्या पाण्याप्रमाणे पिकांवर सुंदर लहरी उमटत होत्या. ताठ मानेने वाच्यावर डोलणारी ज्वारीची कणसं खूप गोंडस दिसत होती. निसर्गाचा हा हिरवागार ठेवा पाहून मला खूप आनंद झाला.

(आ) प्र.१. ज्ञानेश्वर कोळी

प्र.२. जीव दमतो, शिणतो घास भरवते माय,  
घरामंदी घरट्यात जशी दुधातली साय

प्र.३. शेतकरी रात्रंदिवस शेतात कष्ट करतो तेव्हा आपल्याला धान्य मिळते.  
काहीही खाताना एकमेकांना वाटून खावे. वाटून खाल्ल्यामुळे त्या  
पदार्थाची गोडी वाढते. मनातील सारे रुसवेफुगवे विसरून आनंदाने  
रहा. हा संदेश या कवितेतून मिळतो.

### खेळूया शब्दांशी

(अ) (१) रास	(२) साय	(३) गालावर
(आ) (१) मोळी	(२) थवा	(३) घड
(इ) (१) पडलं	(२) मिजास	(३) साय
(ई) (१) खाऊया	(२) आई	(३) घरामध्ये
		(४) अश्रू

### उपक्रम

प्रश्नावली :

- (१) तुमचे नाव काय ?
- (२) तुम्ही किती वर्षापासून शेती करत आहात ?
- (३) तुमची किती एकर शेती आहे ?
- (४) तुमच्या शेतात तुम्ही कोणकोणती पिके घेता ?
- (५) शेतीचे तुम्ही कोणते प्रशिक्षण घेतले आहे ?
- (६) शेतात तुम्ही कोणत्या खतांचा वापर करता ?
- (७) तुम्हांला सरकारच्या योजना उपयोगी वाटतात का ?
- (८) या व्यवसायात तुम्ही आनंदी आहात का ?
- (९) वर्षभर शेतातून पिके घेण्यासाठी पाण्याची व्यवस्था केली आहे का ?

खेळूया

★

१	स			
२	स	सा		
३	स	त	त	
४	स	र	ब	त
५	स	ड	क	
६	स	ण		
७	स			

### कविता करूया

(१) आला आला गुढीपाडवा	(२) माझ्या घराभोवती
स्वागतयात्रेची तयारी करा ॥१॥	झाडे झुडुपे किती ॥१॥
दारी रेखीली रांगोळी	रंगीबेरंगी पाने फुले
दिव्यांचा सण दिवाळी ॥२॥	दारी सुंदर तोरण झुले ॥२॥
करा दुरुणांची होळी	
आनंदाने खा पुरणोळी ॥३॥	

### ४. गोपाळचे शौर्य

#### स्वाध्याय

प्र.१. (अ) नागपूर जिल्ह्यातील नरखेड तालुक्यातील मोहदी या खेडेगावापासून आठ ते दहा किलोमीटर अंतरावर कर्णागड वसलेला आहे.

(आ) गडावर लागलेली आग विज्ञविण्यासाठी ‘गाडी थांबवा’ असे गोपाळ ओरडला.

(इ) वाटेच्या बाजूला असलेल्या शेतातील नदीवरून सुरु असलेला पाण्याचा पाईप गोपाळने ओढून आगीवर पाणी मारण्यास सुरुवात केली.

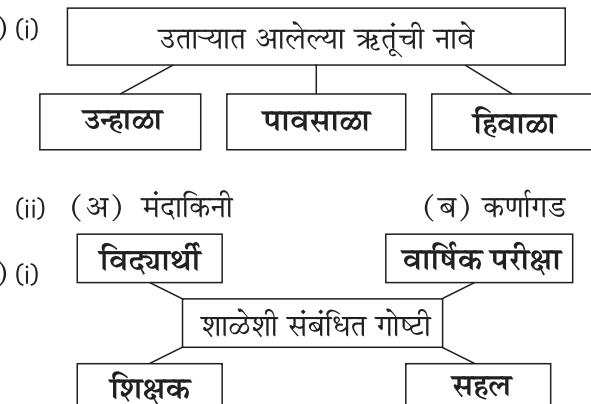
(ई) आग वेळेवर विज्ञली नसती तर गडावर गेलेले गुराखी व गुरे वाचली नसती. गडावरील आणखी झाडे-झुडपे आगीत जळून खाक झाली असती म्हणजेच गडाचे आणि निसर्गाचेही नुकसान झाले असते.

प्र.२. (अ) असे शिक्षक गोपाळा दरडावून म्हणाले.  
 (आ) असे गोपाळ गुराख्याला म्हणाला.  
 (इ) असे शिक्षक दुसऱ्या गाडीतील गृहस्थांना म्हणाले.

### कृतिपत्रिका - १

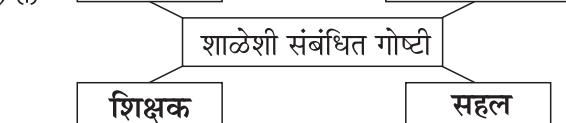
उतारा क्र. १

प्र.१. (अ) (१) (i)



(ii) (अ) मंदाकिनी (ब) कर्णांगड

(२) (i)



(ii) (१) तालुका (२) खेडेगाव (३) जिल्हा

(३) निसर्गरम्य ठिकाणे थकल्या भागल्या मनात एक नवी ऊर्जा निर्माण करतात. आमच्या घरच्यांबरोबर नुकताच मी महाबळेश्वरला जाऊन आलो.

महाराष्ट्राच्या पश्चिम घाटाच्या रांगेतील महाबळेश्वर हे थंड हवेचे निसर्गरम्य असे ठिकाण आहे. निसर्गाची नानाविध रूपे महाबळेश्वरच्या परिसरात प्रत्यक्ष जाऊन अनुभवण्यासारखी आहेत.

महाबळेश्वरमधील पंचगंगा मंदिर कृष्णा, वेणा, कोयना, सावित्री व गायत्री या पाच नद्यांचे उगमस्थान. वेणा तलावातल्या नौकाविहाराची मज्जा काही औरच आहे. महाबळेश्वरमधील विविध देखाव्यांची ठिकाणे-पॉईंट खिळवून ठेवणारे आहेत. ऑर्थर पॉईंटवरून आजुबाजूच्या परिसराचे विहंगम दर्शन व सूर्योदयाचा अनुभव मनात घर करणारा आहे. अस्ताला जाणाऱ्या सूर्याचे विविध

रंग 'बॉम्बे पाईट' वर घेता येतात. जवळच असणारी ऐतिहासिक ठिकाणे-प्रतापगड, मकरंदगडालाही जाता येते. महाबळेश्वरच्या परिसरातील स्ट्रॉबेरी, जांभळाचा मध, लाल मुळा तोंडाला एक वेगळीच चव आणतात. निसर्गाच्या नानाविध रंग रूपाला न्याहाळण्याचे सुख महाबळेश्वरच्या परिसरात प्रत्येकालाच लाभते.

### कृतिपत्रिका - २

उतारा क्र. २

प्र.१. (अ) (१) (i)



(ii) घाटाच्या खालच्या बाजूने आग लागली होती. नाहक आपण आगीत सापडू नये या उद्देशाने

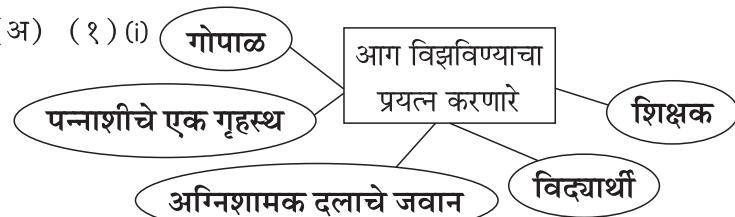
(२) (i) चौंदा वर्षे (ii) अडीच-तीन इंच परिघ असलेला

(३) दुसऱ्याला मदत करणे हा गोपाळचा गुण मला आवडला. कारण गडावरील आग विझविण्यासाठी गोपाळने स्वतःचा जीव धोक्यात घालून आग विझविण्याचा यशस्वी प्रयत्न केला.

### कृतिपत्रिका - ३

उतारा क्र. ३

प्र.१. (अ) (१) (i)



(ii) (अ) नरखेड्हून (ब) गुराखी

(२) (i) गोपाळने

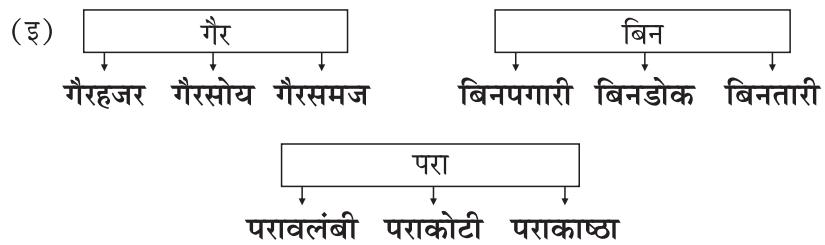
(ii) (अ) असत्य (ब) सत्य

(३) रविवारचा दिवस होता. बाबा भाजी मार्केटमध्ये गेले होते. सकाळी साधारण ११.३० वाजले होते. घरात मी, आई, माझी धाकटी बहीण आम्ही तिघेच होतो. आईने स्वयंपाकघरात गॅसवर कुकर ठेवला होता. मी टी.क्वी पहात होतो. आई स्वयंपाकघरात जेवणाची तयारी करत होती. बहीण तेथेच होती. बराच वेळ कुकरची शिटी होत नव्हती. आई आपल्या कामात मग्न होती. अचानक जोराचा आवाज झाला. म्हणून मी धावत स्वयंपाकघरात गेलो तर कुकरचे झाकण खाली पडले होते. कुकर वरती उडाला होता. कुकरमधील अन्न इकडे तिकडे सांडले होते. मी धावत जाऊन गॅस बंद केला. बहिणीला तेथून दूर केले. आई तर थरथरत होती. आईच्या अंगावर थोडे गरम पाणी पडल्यामुळे भाजले होते. बहीण रडत होती. मी आईला आणि बहिणीला बाहेर घेतले. अशा रीतीने थोडक्यात मोठा अपघात होताना वाचला.

### खेळूया शब्दांशी

क्र.	नाम	सर्वनाम	विशेषण	क्रियापद
(१)	कर्णागड			आहे
(२)	ड्रायव्हर, गाडी			वाढवला
(३)	पाईप, गोपाळ	तो	लांब	आणला
(४)	चेहरे			होते.

(आ) (१) प्रत्यक्षदर्शी (२) अकलिप्त  
 (३) पोशिंदा (४) कौतुकास्पद



(ई) (१) माझे हसणे क्षणोक्षणी वाढतच गेले.  
 (२) मंदा लिहिताना नेहमी चुका करते.  
 (३) आईने आशाला शंभरदा बजावले.  
 (४) सभोवार द्राट झाडी होती.  
 (उ) (१) पूर्वी (२) घटाघटा (३) समोरून (४) सगळीकडे

### चर्चा करा. सांगा.

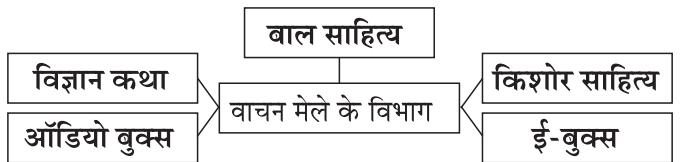
- आपत्ती म्हणजे संकट. नैसर्गिक रितीने निर्माण झालेल्या आपत्तीला नैसर्गिक आपत्ती असे म्हणतात. उदा. पूर, भूकंप, ज्वालामुखी, वादळ, अतिवृष्टी. मानवाने केलेल्या कृतीमुळे ज्या आपत्ती येतात त्यांना मानवनिर्मित आपत्ती असे म्हणतात. उदा. बॉम्बस्फोट, दंगली, चेंगराचेंगरी, घरगुती अपघात.
- विद्यार्थ्यांनी स्वतः कृती करा.

# हिंदी सुलभभारती

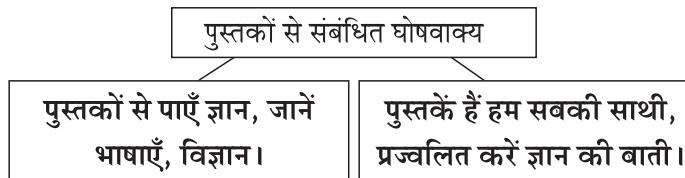
## पहली इकाई

### 1. वाचन मेला

प्र.1. (1)



(2)



(3)

(i) (1) किताब (2) पोथी  
 (ii) (1) परी कथा (2) रहस्य कथा

(4)

पुस्तकें ज्ञान और मनोरंजन से ओत-प्रोत होती हैं। वे ज्ञान का अक्षय भंडार होती हैं जो हमारा सही मार्गदर्शन करती हैं। वे समाज में नवचेतना का संचार कराती हैं। अपने अंदर समाए विचारों के अस्त्र का अचूक निशान साधकर जनजागृति लाने का कार्य करती हैं। समाज की डगमगाती नौका की सशक्त पतवार हैं ये पुस्तकें। ये हमें साहस और धैर्य प्रदान करती हैं। अच्छी पुस्तकें हमें अमृत की तरह प्राण शक्ति अर्पित करती हैं। वे चरित्र निर्माण का सर्वोत्तम साधन हैं। उन्हें पढ़कर जीवन में कुछ महान कर्म करने की भावना हमारे मन में जगाती है। पुस्तकें प्रकाश-गृह हैं जो समय के विशाल समुंदर में खड़ी हैं और हमारी जीवन नौका का मार्गदर्शन कर रही हैं।

(5)

जब किसी स्थान पर लोग सामाजिक, धार्मिक, व्यापारिक या अन्य कारणों से एकत्रित होते हैं तो उसे मेला कहते हैं। मेले में तरह-तरह के क्रियाकलाप देखने को मिलते हैं। वास्तव में 'वाचन मेला' पुस्तक प्रेमियों के लिए महान उत्सव का अवसर माना जाता है। चित्र में पुस्तकों के अलग-अलग विभाग दिखाई दे रहे हैं। बच्चे अपनी-अपनी रुचि के अनुसार पुस्तकों की जानकारी पाने में व्यस्त हैं। बच्चों ने ग्रंथदिनी

निकालकर पुस्तकों का महत्व समझाने का प्रयास किया है। उनके हाथों में फलक पट्टियाँ हैं जो कह रही हैं कि पुस्तकें हमें ज्ञान देती हैं, भाषा और विज्ञान की जानकारी देती हैं। चित्र के घोष वाक्य पुस्तकों का महत्व समझाते हैं।

#### उपक्रम (Activity)

(1) पुस्तक में होती नई खोज, पुस्तक से मिलती नई सोच।  
 जब ना हो कोई संगी-साथी, पुस्तक हीं तब मन बहलाती।  
 पुस्तक देती हमको ज्ञान जब होता मन परेशान  
 सोने चाँदी या रत्न से पुस्तक की कीमत अधिक होती है।

(2) विद्यार्थी स्वयं करें।

### 2. फूल और काँटे

प्र.1. (1)

एकही-सी चाँद की चाँदनी

एक-सा मेघ का बरसना

फूल और काँटों को उपलब्ध समानताएँ

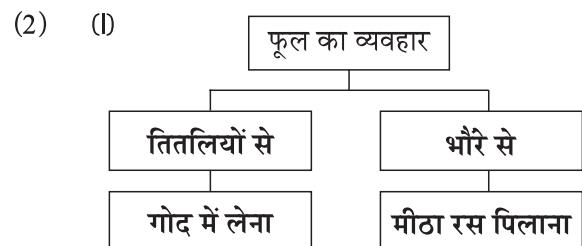
एक-सी हवा का बहना

एक ही पौधे द्वारा भरण-पोषण

(2) (i) (1) मेह (2) रात  
 (ii) रात में उनपर चमकता चाँद भी,  
 एक ही-सी चाँदनी है डालता।

फूल और काँटों का जन्म एक ही जगह पर होता है। एक ही पौधा दोनों का भरण-पोषण करता है। रात में उनपर चाँद चमकता है और अपनी चाँदनी समान रूप से उनपर बिखेरता है।

बादल उनपर समान रूप से अपना जल बरसाता है। हवाएँ उन दोनों पर एक जैसी ही बहती हैं। इस तरह एक ही परिवेश में बढ़ने वाले ये दोनों फिर भी एक जैसे नहीं होते। दोनों का व्यवहार बिलकुल अलग होता है।



(ii) मनुष्य को खुश करने के फूल के साधन



(3) काँटा किसी की उँगलियाँ छेदकर लहूलुहान कर देता है तो किसी के सुंदर वस्त्र फाड़ देता है। प्यारी-प्यारी तितलियों के पंख कतर देता है तो भौंरे के श्यामल शरीर को भी छेदकर धायल कर देता है।

काँटे के बिलकुल विपरीत होता है फूल। वह तितलियों को अपनी गोद में लेता है और भौंरे को अपना मधुर रस (शहद) पिलाता है। अपनी सुगंध और सुंदर आकर्षक रंग से सभी को खुशी देता है।

प्र.3. (1) अयोध्यासिंह उपाध्याय 'हरिओौथ'

(2) है खटकता एक सबकी आँख में, दूसरा है सोहता सुर सीस पर, किस तरह कुल की बड़ाई काम दे, जो किसी में हो बड़प्पन की कसर।

(3) कवि ने इन पंक्तियों द्वारा मनुष्य महान कुल में जन्म लेने से बड़ा नहीं बनता बल्कि अपने महान, श्रेष्ठ कर्मों से बड़ा बनता है। कर्मों को महत्त्व दिया है। इसिलिए यह पंक्तियाँ मुझे पसंद हैं।

(4) फूल और काँटे को प्रकृति की कृपा और पौधे द्वारा भरण-पोषण एक-सा मिलता है फिर भी दोनों के व्यवहार में जमीन-आसमान का अंतर है। काँटे का दुष्ट व्यवहार उसे हम सब की आँखों में खटकाता है और फूल के कोमल व्यवहार के कारण वह देवताओं के शीश पर चढ़ाया जाता है। अर्थात् बड़प्पन भी हमें हमारे कर्मों के कारण ही मिलता है। जन्म किस कुल में हुआ इससे भी महत्त्वपूर्ण है हम किस तरह औरों के साथ बर्ताव करते हैं। कुल की बड़ाई से भी हमारे कर्म श्रेष्ठ होते हैं जो हमें संसार में बड़प्पन दिलाते हैं। इसिलिए अच्छे कर्म करने का संदेश कविता द्वारा कवि दे रहे हैं।

### स्वाध्याय

प्र.1 (अ) (1) फूल भौंरे को अपना मीठा रस पिलाता है।

(2) बड़प्पन की कसर रह जाने पर कुल की बड़ाई काम नहीं देती।

(3) काँटा तितलियों के पर कतरता है।

(4) फूल तितलियों को गोद में लेता है।

(5) मेह (मेघ) एक-सा बरसता है।

(आ) (1) फूल और काँटों का ढंग अलग-अलग है।

(2) काँटा सबकी आँखों में खटकता है।

(3) फूल को उसके कुल के कारण बड़प्पन मिलता है।

(4) फूलों की सुगंध हमें खुश नहीं कर पाती।

(इ) (1) देवताओं के शीश पर (2) अपनी चाँदनी (3) काँटा

(ई) (1) पौधा (2) श्याम

★ समानार्थी शब्दों की जोड़ियाँ विरुद्धार्थी शब्दों की जोड़ियाँ

पुष्ट - फूल	रात × दिन
जल - पानी	छोटा × बड़ा
मेह - बादल	उदय × अस्त
पवन - हवा	सम्मान × अपमान

वाक्य : पुष्ट = फूल - पुष्ट बनकर जीवन को महकाना चाहिए ।

बालक फूल-सा कोमल था ।

जल = पानी - जल ही जीवन है, उसे व्यर्थ न बहाएँ ।  
पानी पीते ही प्यास का फूर हो गई ।

मेह = बादल - मेह की कृपा से कृषि फूली-फली ।  
आकाश में बादल छाए थे ।

पवन = हवा - मलय पर्वत से शीतल पवन बह रही है ।  
हवा में प्रदूषण बढ़ गया है ।

रात × दिन - रमेश रात-दिन मेहनत कर अपने बच्चों को पढ़ा रहा है ।

छोटा × बड़ा - कोई भी काम छोटा या बड़ा नहीं होता ।

उदय × अस्त - ध्रुवीय प्रदेशों में सूर्य के उदय और अस्त का अंतर 20 से 22 घंटे तक बड़ा होता है ।

सम्मान × अपमान - आज तक जो लोग रमेश को सम्मान देते थे, दिन पलटते ही गरीबी आने पर उसका बात-बात पर अपमान करने लगे ।

वाचन जगत से

★ खादी ग्रामोदयोग का उद्देश्य ग्रामीण क्षेत्रों में रहने वाले लोगों को अधिक से अधिक रोजगार के अवसर प्रदान करना है । खादी हाथ से काते हुए सूत का उपयोग करके हाथ से बुना हुआ कपड़ा होता है । सूत कताई की यह प्रक्रिया चरखे द्वारा की जाती है । इस प्रक्रिया के लिए न तो फैक्ट्री बनाने की जरूरत

होती है ना ही इंधन की जरूरत होती है जिससे पर्यावरण को नुकसान हो । सरकार जानती है कि खादी ग्रामोदयोग को प्रोत्साहन देकर जहाँ लोगों को रोजगार के अवसर प्राप्त होंगे वहीं देश और विश्व के पर्यावरण को अच्छा बनाने में भी योगदान होगा । खबर है कि खादी ग्रामोदयोग आयोग ने एअर इंडिया कंपनी के साथ करार किया है । अब उसके क्रू मेंबर खादी की वर्दी पहनेंगे । इससे देश विदेश में खादी का नाम होगा । खादी का विक्रिय बढ़ाने में यह करार मददगार सिद्ध होगा और रोजगार के अवसर बढ़ेंगे ।

बताओ तो सही

★ मुझे गुलाब का फूल पसंद है । इसलिए नहीं कि वह फूलों का राजा है बल्कि इसलिए कि अनगिनत काँटों के ऊपर खिला है और उफ तक नहीं करता बल्कि अपनी मुस्कराहट, अपनी सुगंध बिखेरकर दूसरों को प्रसन्न करता है । रेगिस्तान में जहाँ अन्य पेड़-पौधे अपने होश-हवास खो बैठते हैं वहाँ भी इसकी मुस्कराहट में कमी नहीं आती । यह मुस्कराहट मुझे कहती है कि जीवन की कठिनाइयों को हँसते-खेलते सहकर आगे बढ़ो और दूसरों की भलाई के लिए कुछ कर के अपने जीवन को सार्थक बनाओ ।

3. दादी माँ का परिवार

प्र.1. (1) (i)

चिड़िया के बच्चों के नाम

टीनू

मीनू

(ii)

चिंकी के बच्चों के नाम

चुस्कू

मुस्कू

(2)

उनका ख्याल रखती ।

उनसे मन बहलाती ।

दादी माँ का बच्चों को इस तरह समझाना

रोने लगते तो पुचकारती ।

स्नेह प्यास से वह दुलारती ।

हिंदी सुलभभारती

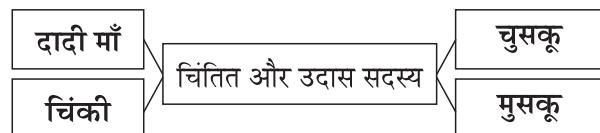
(3) (i) (1) हँसते-खेलते (2) घर-आँगन

(ii) (1) गम (2) नफरत

(4) एकता का अर्थ है एक साथ रहना। कठिन परिस्थितियों में एक-दूसरे की मदद करना। एकता हमारे जीवन में हर कदम पर महत्वपूर्ण है। एकजुट रहने से विपत्ती में कोई अकेले नहीं रहता। एकजुट रहनेवाले स्वयं को सुरक्षित महसूस करते हैं। साथ रहने से सबके सुझाव और मार्गदर्शन से कोई भी कार्य पुरा हो सकता है। साथ में किया काम समय पर खत्म होता है। जब हम एक साथ काम करते हैं तो हम प्रेरित होते हैं और कड़ी मेहनत करने की ठान लेते हैं। एक व्यक्ति अकेले काम करता है तो अनेक कठिनाईयों का सामना करना पड़ता है। एकसाथ रहने से हम मजबूत हो जाते हैं। अकेले व्यक्ति को कोई भी तकलीफ पहुँचा सकता है। एकता अपने आप में आत्मविश्वास उत्पन्न करती है।

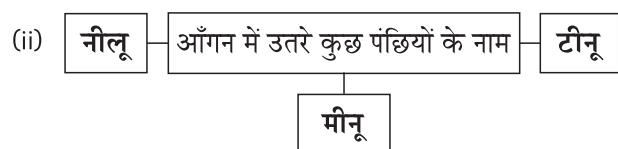
अपने लक्ष्य को पाने के लिए, अपनी जिंदगी में सुखी और स्वस्थ जीवन बिताना हो, अपना विकास करना हो तो एक साथ रहना आवश्यक है क्योंकि एकता में बल है।

प्र.2. (1)



(2) (i) (1) पंछियों की एकता ने उसे हरा दिया था।

(2) उन्हें नीलू, टीनू, मीनू की चिंता हो रही थी और मन में बुरे विचार आ रहे थे।



(3) (i) (1) एक (2) प्रसन्न

(ii) (1) छाया + दार = छायादार (2) दम + दार = दमदार

(4) समझदारी से हर समस्या का हल ढूँढ़ा जा सकता है। समझदारी में ही भलाई है। किसी भी काम को करने से पहले समझदारी दिखाना जरूरी है। जल्दबाजी में सिर्फ नुकसान ही होता है। आपस में संघर्ष होते हैं और कोई काम सफल नहीं होता। दोनों बकरियों ने भी आपसी सूझाबूझ से नदी पार कर ली थी। कोई भी निर्णय लेने से पहले अच्छी तरह सोच समझ लेना जरूरी है। समझदारी से किए हुए काम को हमेशा सफलता मिलती है क्योंकि बिना सोचे समझे कुछ भी करने से बाद में पछतावा होता है। जीवन में आवी कठिनाईयों, समस्याओं को समझदारी से दूर करना ही जरूरी है क्योंकि समझदारी से हम उचित निर्णय लेने में समर्थ हो सकते हैं।

### स्वाध्याय

प्र.1. (ग) घर के आँगन में बरगद का पेड़ था।

(क) चिंकी ने भी दो बेटों का उपहार दिया।

(ख) एक साथ उड़ने को रहेंगे तैयार।

(ग) टीनू-मीनू चुस्कू-मुस्कू खेलने लगे।

प्र.2. (1) दादी माँ के घर के आँगन में बरगद का पेड़ था। चिंकिया ने उसपर घोंसला बनाया था और वहाँ अपने बच्चों के साथ वह रहती थी।

(2) बहेलिए के जाल में कई चिड़े-चिड़ियाँ फँसे थे। वे सब जाल के साथ उड़ गए। जाल में फँसे पंछियों की एकता देखकर बहेलिया ठगा-सा रह गया।

(3) दादी माँ सुबह उठकर घर बुहारती-सँवारतीं। आँगन में आसन धरतीं, खाना बनातीं, खातीं। अपने परिवारजनों से बातें करतीं।

(4) चुस्कू-मुस्कू चिंकी चुहिया के बच्चे थे। उनके पास पैने दाँत थे। उन्होंने अपने पैने दाँतों से जाल काटा और पंछियों को आजाद किया।

प्र.3. (अ) (1) बरगद (2) खुशहाली (3) कलरव (4) एकता  
(5) चरखा (6) हिलोरें (7) औरों

(आ) (1) एकता की ताकत दिखाएँगे। (2) उनका घर आबाद था।

(इ) (1) - (ग), (2) - (घ), (3) - (क), (4) - (ड), (5) - (ख)

(अ) (1) घर के आँगन में	(2) मुनमुन की	(3) दादी माँ
(4) जाल में	(5) एकता की	(6) दादी माँ के घर
(आ) (1) दादी माँ समझदार और सयानी थी।	<input checked="" type="checkbox"/>	
(2) नीलू और चिंकी के बच्चे कभी झगड़े-टंटा नहीं करते।	<input type="checkbox"/>	
(3) मुनमुन के घर दादी-माँ आने वाली थी।	<input type="checkbox"/>	
(4) दादी-माँ की सीख रंग लाई।	<input checked="" type="checkbox"/>	

### व्याकरण

(अ) थैलियाँ - थैली : पॉलिथिन की थैली का प्रयोग नहीं करना चाहिए।  
 पंखा - पंखे : हमारी कक्षा में चार पंखे लगे हुए हैं।  
 दीवार - दीवारें : भेदभाव, नफरत की दीवारें गिरा दो।  
 राजा - राजा : राजा प्रजा का पालनहार कहलाता है।  
 वस्तुएँ - वस्तु : वस्तु का मूल्य उसकी उपयोगिता पर निर्भर होना चाहिए।  
 भेड़िया - भेड़िए : वन में लोमड़ी के साथ दो भेड़िए भी थे।  
 बहू - बहुएँ : खानदानी बहुएँ कुल की परंपरा का मान रखती हैं।  
 रोटी - रोटियाँ : अकाल के दिनों में जमींदार ने रोटियाँ बाँटना शुरू किया।

(आ) (1) तुनककर बोलना - चिढ़कर बोलना।  
 वाक्य : चंदा माँगने आए लोगों को रमेश ने तुनककर बोलते हुए भगा दिया।  
 (2) अक्ल का पत्ता खोलना - तरकीब बताना।  
 वाक्य : राज ने अक्ल का पत्ता खोलते हुए अपने दोस्तों को बुरी संगति से मुक्त किया।  
 (इ) (1) एकता में बल (2) परिणाम अच्छा तो सब अच्छा  
 (ई) (1) संज्ञा (2) सर्वनाम (3) क्रिया (4) विशेषण

### लेखन कौशल (Writing Skill)

★(1) प्रकृतिद्वारा, उपहार के रूप में प्रदान किए गए साधनों को प्राकृतिक संसाधन कहा जाता है, जैसे लकड़ी, मिट्टी का तेल, पानी आदि। ये प्रकृति द्वारा हमें हमारे जीवन को आसान बनाने के लिए दिए गए हैं। लेकिन शहरीकरण, औद्योगिकरण, बढ़ती आबादी के नाम पर मनुष्य द्वारा लगातार इनका शोषण हो रहा है। अगर हमने इसे नहीं रोका तो ये संसाधन भविष्य में समाप्त हो जाएँगे। क्योंकि ये सीमित हैं।

**जल :** हमें पीने के लिए, भोजन बनाने, नहाने, फसल पैदा करने के लिए पानी नितांत जरूरी है। पानी की बर्बादी और जलप्रदूषण नहीं रोका गया तो हमारा भविष्य खतरे में है। हम अपनी मामूली जरूरतें भी पानी के अभाव में पूरी नहीं कर पाएँगे और अपना अस्तित्व ही मिटा देंगे।

**वन :** वनों में नानाविधि पेड़-पौधे, पशु-पक्षी, जीव-जंतु होते हैं। आज मनुष्य इन वनों की अंधाधुंध कटाई में लगा उनका बैरी बन बैठा है। इसके दुष्परिणाम साफ नजर आ रहे हैं। प्रदूषण बढ़ रहा है। बरसात में अनियमितता साफ नजर आ रही है, कहीं अति वर्षा, बाढ़, भूस्खलन हो रहा है तो कहीं सूखा। वन्य पशुओं से मनुष्य को खतरा बढ़ रहा है। इन वनों को नष्ट कर हम अपने अस्तित्व को ही चुनौति दे बैठे हैं।

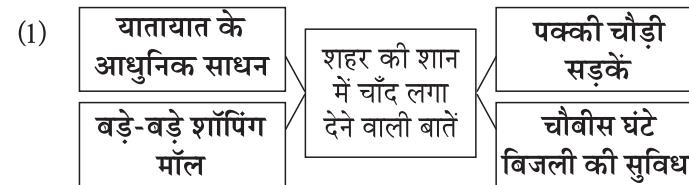
### वाचन जगत से :

★(1) ♦ स्वामी जी के भाषण के कुछ प्रमुख वाक्य -  
 ♦ उठो, जागो और तब तक नहीं रुको, जब तक लक्ष्य न प्राप्त हो जाए।  
 ♦ बस वहीं जीते हैं जो दूसरों के लिए जीते हैं।  
 ♦ स्वयं पर विश्वास करो।  
 ♦ किसी के साथ विवाद न कर हिल-मिलकर अग्रसर हो जाओ, हंकार मात्र से दुनिया को बदल देंगे।  
 ♦ जिस समय जिस काम के लिए प्रतिज्ञा करो, ठीक उसी समय पर उसे करना ही चाहिए, नहीं तो लोगों का विश्वास उठ जाता है।  
 ♦ सब कुछ खो देने से ज्यादा बुरा है उस उम्मीद को खो देना, जिसके भरोसे पर हम सबकुछ वापस पा सकते हैं।

★(2) विद्यार्थी स्वयं करें।

## 4. देहात और शहर

प्र.1.



(1) (1) असुविधा, बेरोजगारी, गुटबाजी, आपसी झगड़े, अशांति  
 (2) अशिक्षित लोग, अल्पशिक्षित लोग

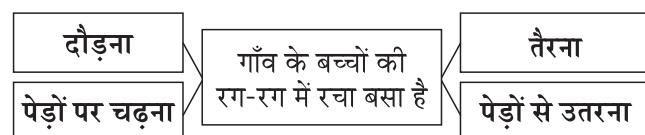
(ii) (1) गाँव में पहले बहुत खुशहाली थी। चारों तरफ हरियाली थी पर  
 अब पहले जैसे रौनक नहीं रही यह सोचकर  
 (2) गाँव में पीने का पानी लाने के लिए दूर-दूर तक जाना पड़ता है  
 इसलिए

उपसर्गयुक्त शब्द	प्रत्यययुक्त शब्द
असुविधा बेरोजगार	विकसित उदासीन

(4) गाँव में शिक्षा, वैद्यकीय सुविधा, पीने का पानी, बिजली, यातायात के साधन, बाजार व्यवस्था इन पर ध्यान देकर बदलाव लाने की बहुत आवश्यकता है। लोक संगठन, सहकारिता, स्वच्छता का महत्व समझाना चाहिए।

शहर के विकास के लिए यातायात के नियमों का पालन करना, बिजली-पानी का उपयोग करते वक्त उनकी बचत का ख्याल रखना इनपर ध्यान देने की जरूरत है। शहर को स्वच्छ रखने की जिम्मेदारी हर नागरिक की है।

प्र.2.



(2) (i)

गाँव और शहर की समस्या का मूल कारण

गरीबी

बढ़ती आबादी

अशिक्षा

गाँव के लोगों में विकसित होना चाहिए

विभिन्न व्यावसायिक कौशल

कंप्यूटर संबंधी जानकारी

(3) (i)

शब्द

मूल शब्द

प्रत्यय

(i) व्यावसायिक

व्यवसाय

इक

(ii) विकसित

विकास

इत

(ii) (1) जिम्मेदारियाँ

(2) समस्याएँ

(4) गरीबी दूर करने के लिए बढ़ती जनसंख्या नियंत्रित की जाए। अधिक जनसंख्या के कारण संसाधन कम पड़ जाते हैं। जो भी काम आए हमें वह काम करने में शर्म महसूस नहीं करनी चाहिए। बच्चों को अच्छी शिक्षा जो उनके कौशल्य को विकसित करनेवाली हो और उसके लिए अत्याधुनिक और अच्छी सुविधाएँ मिलने की जरूरत है। अच्छी शिक्षा के कारण वे पढ़-लिखकर अच्छी नौकरिया पा सके। सभी लोगों को रोजगार उपलब्ध कराने की आवश्यकता है। ग्रामीण भागों में महिलाओं के लिए भी रोजगार मिलने का अवसर देना चाहिए ताकि पूरा परिवार अपना जीवन स्वस्थ और अच्छे से बिता सके।

### स्वाध्याय

प्र.1. (अ) (1)

गाँव में बीमारियाँ हैं पर पर्याप्त मात्रा में सुसज्ज और अच्छे अस्पताल हैं।

(2)

'मोबाईल' के माध्यम से नित-नवीन सूचनाएँ हम तक पहुँचने लगी हैं।

(3)

अपने गाँव को परिवार समझकर उसे विकसित करने का प्रयत्न करना होगा।

(4)

तुम गाँववाले यहाँ रोजगार की तलाश में आया करो।

(5)

खेल ग्रामीण जीवन की आत्मा है।

(आ) (1) क्योंकि रोजगार की तलाश में लोग शहर जा रहे हैं।  
 (2) क्योंकि शहर में दिन-ब-दिन भीड़ बढ़ती जा रही है।  
 (3) क्योंकि पहले खुशहाली और हरियाली की जो रौनक थी वह अब नहीं रही।

(इ) (1) इमारतों के जंगल में (2) खेल  
 (3) अशिक्षित और अत्यशिक्षित लोग

(ई) (1) दूरध्वनि (2) स्वास्थ्य (3) ग्रामीण

**व्याकरण**

प्र.1. (अ) (1) चाचा - वाक्य : चाचा जी प्रकल्प में मेरा मार्गदर्शन करते हैं।  
 (2) बालिका - वाक्य : बालिका अब पाठशाला जाने लगी है।  
 (3) अध्यापक - वाक्य : अध्यापक हमें पाठ पढ़ा रहे हैं।  
 (4) अभिनेत्री - वाक्य : अभिनेत्री ने घमंड दिखाया।  
 (5) गुड्डे - वाक्य : मेरी गुड़िया से तुम्हरे गुड्डे की शादी रचाएँगे।  
 (6) ऊंटनी - वाक्य : ऊँटनी का दूध बहुत महँगा है।  
 (7) सास - वाक्य : रजनी की अपनी सास के साथ नहीं बनती।  
 (8) हंस - वाक्य : हंस सरोवर की शोभा बढ़ा रहे थे।

(आ) (1) पुरुष (2) बेटा (3) देवर (4) छात्रा (5) मोरनी  
 (6) पत्नी (7) विदुषि (8) बेटी (9) कार्यकर्ता

(इ) (1) आबादी (2) कल्याण (3) कृषि (4) ग्रामजन  
 (5) चिल्लपों (6) तहसील (7) विख्यात  
 (8) व्यथित (9) यातायात (10) रौनक

**वाक्यः**(1) आबादी दिन-ब-दिन बढ़ती जा रही है।  
 (2) मिल-जुलकर रहने में ही हमारा कल्याण है।  
 (3) गाँव में कृषि महाविद्यालय का उद्घाटन हुआ।  
 (4) ग्रामजन बेरोजगारी से परेशान हो उठे हैं।  
 (5) वाहनों की चिल्लपों से रक्तचाप बढ़ता है।

(6) नेता को अपने तहसील की भलाई में लग जाना है।  
 (7) देवगढ़ का आम विश्व भर में विख्यात है।  
 (8) महिलाओं पर अन्याय की खबरें मुझे व्यथित कर देती हैं।  
 (9) यातायात के आधुनिक साधन विश्व की दूरियाँ मिटाने में योगदान दे रहे हैं।  
 (10) त्योहार पास में आने पर बाजार में रौनक आ गई।

प्र. 2.

बोली	प्रदेश	बोली	प्रदेश
मारवाड़ी	- राजस्थान	भोजपुरी	- बिहार
कुमाऊँनी	- उत्तराखण्ड	बुंदेली	- हरियाणा
अवधी	- उत्तर प्रदेश	छत्तीसगढ़ी	- छत्तीसगढ़
मैथिली	- बिहार	बांगरू	- हरियाणा
मेवाती	- राजस्थान	मालवी	- राजस्थान
ब्रज भाषा	- उत्तर प्रदेश	गढ़वाली	- हिमाचल प्रदेश
खड़ी बोली	- उत्तर प्रदेश	बघेली	- मध्य प्रदेश

**स्वयं अध्ययन**

★ गाँव में घर पास-पास में होते हैं इसलिए यातायात के साधन न हों तो भी मिलने-जुलने में कोई दिक्कत नहीं आएगी, लेकिन उनके उत्पाद, जो वे शहर जाकर बेचते हैं, बेच नहीं पाएँगे और बहुत नुकसान उठाना पड़ेगा। सब्जी, अनाज, दूध आदि चीजें खराब हो जाएँगी। न उनके दाम मिलेंगे ना ही किसी की क्षुधा मिटाने में काम आएँगी।

शहरों में खेती बाड़ी होती नहीं। वहाँ गाँव से सब्जी, फल, दूध वगैरह नहीं पहुँच सकेंगे और कई मुसीबतों से वे घिर जाएँगे। महानगर में तो अलग ही समस्या होगी। दूर-दूर तक काम पर जाने वाले लोगों को यातायात के साधन न होने की वजह से काम पर पहुँचना ही मुश्किल हो जाएगा। न मंडी में सब्जी होगी न कारखानों में कच्चा माल। इन सारी बातों का असर देश की अर्थव्यवस्था पर होगा। देश का विकास थम जाएगा।

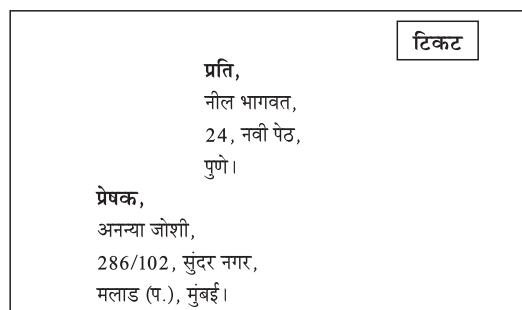
## लेखन कौशल (Writing Skill)

(1) अनन्या जोशी,  
286/102,  
सुंदर नगर,  
मलाड (प.), मुंबई।  
दि. 5 नवंबर, 2022।  
प्रिय मित्र नील,  
सप्रेम नमस्ते।

तुम्हारा पत्र कल ही मिला। यह जानकर बहुत खुशी हुई कि तुम कक्षा में अब्बल आए। बहुत बहुत बधाई हो, मेरे दोस्त। मिठाई तो बनती है। खैर जब मिलूँगी तो सूद के साथ वसूल करूँगी। आज मैं तुम्हें कुछ और भी बताना चाहती हूँ।  
पढ़ाई के साथ-साथ खेलों का भी हमारे जीवन में बड़ा महत्त्व है। खेलने से शरीर फुर्तिला बनता है। शरीर स्वस्थ रहता है और स्वस्थ शरीर में तेज दिमाग भी बसता है। हम अपने सभी कार्य सुचारू रूप से पूरे करने में सक्षम बनते हैं। खेल-कूद से मनोरंजन भी होता है और सहकारिता, अचूक निर्णयक्षमता, सूझ-बूझ जैसे गुणों का भी हमारे अंदर विकास होता है। हमारा शरीर सुंदर, सुदृढ़ बनता है। जब इतने लाभ होते हैं तो हमें खेल-कूद को भी पढ़ाई के बराबर महत्त्व देना चाहिए। उम्मीद है कि मेरी बातों से प्रभावित होकर जल्द ही टेनिस टुनिमेंट में तुम्हें देखने का सौभाग्य मुझे मिले।  
आदरणीय चाचा जी तथा चाची जी को मेरा प्रणाम कहना। दीदी को भी मेरा नमस्ते कहना।

तुम्हारी सहेली,

अनन्या



## 5. बंदर का धंधा

प्र.1. (1) (अ) लोमड़ी (ब) वैद्यकीय (क) घी-कुँवार (ड) कुंदन  
(2) (i) (1) असत्य (2) सत्य  
(ii) (1) मैं ही दीखूँ सबसे सुंदर ऐसी बूटी लाओ  
(2) अच्छी-अच्छी जड़ी-बूटियाँ जंगल से वह लाता।  
(3) लोमड़ी को सुंदर दिखना था, इसलिए वह बंदर के पास जड़ीबूटी माँगने आई। बंदर ने उसे घी कुँवार दोनों समय चेहरे पर लगाने की सलाह दी। ऐसा करने से लोमड़ी का चेहरा कुंदन की तरह चमकने लगेगा। बंदर ने उससे अपनी फीस भी देने को कहा। इस तरह बंदर का यह वैद्यकीय व्यवसाय खूब चलने लगा और वह मौज मनाने लगा। जंगल से वह अच्छी-अच्छी जड़ी-बूटियाँ लाने लगा।

प्र.2. (1) नरेंद्र गोयल (2) हास्य कविता  
(3) बंदर बोला-घी-कुँवार तुम दोनों समय लगाओ,  
चमकेगा कुंदन सा चेहरा फीस मुझे दे जाओ।  
(4) कवि ने पारंपरिक उपचार पद्धति और जड़ी बूटियों से होनेवाला लाभ बताया है। मनुष्य को सुंदर दिखने का शौक तो होता ही है लेकिन यहाँ पर लोमड़ी को भी सुंदर-चिकना बनना है यह कल्पनाही बहुत मजेदार और हँसानेवाली है। बंदर भी उसे घी-कुँवार दोनों समय चेहरे पर लगाने की सलाह देता है और सलाह की फीस भी माँगता है। इसलिए मुझे यह पंक्तियाँ पसंद हैं।

प्र.3. बीमारियों के इलाज में जड़ी-बूटियों का इस्तेमाल पुराने जमाने से चलता आया है। जड़ी-बूटियों में पोषक तत्त्व और औषधीय गुण दोनों होते हैं। आज के आधुनिक रहन-सहन और आपाधापी ने मनुष्य को अंदर से खोखला बना दिया है। मौसम में आनेवाले उतार-चढ़ाव से वह बीमार पड़ जाता है। मनुष्य ने अपनी बुद्धि के दम पर जीवाणु-विषाणुओं को देखने के यंत्र बना लिए परंतु नई उपचार पद्धति के दुष्परिणामों ने उसे फिर एक बार सोचने पर विवश कर दिया है। प्राचीन उपचार पद्धति के दुष्परिणाम नहीं होते बल्कि प्रकृति द्वारा वनौषधियाँ वरदान बनकर

हमारी मदद करती हैं। ये घास-पात जैसी दिखती हैं पर अपने विशेष गुणों के कारण रोग निवारण, आरोग्यवर्धन एवं परिशोधन के काम आती हैं। ये औषधियाँ हानिरहित, निरापद होने के कारण सबसे सुरक्षित उपचार पद्धति हैं। आज इसीलिए लोगों ने जड़ी-बटियों में दोबारा दिलचस्पी लेना शुरू किया है।

## व्याकरण

(अ) (1) दूटा-फूटा (2) कुरसी-मेज (3) सुबह-शाम  
 (4) चिकना-सुंदर (5) अच्छी-अच्छी

(आ) (1) नृत्य (2) शुल्क

(इ) (1) कुरसियाँ (2) जड़ें (3) पत्ता (4) भालू

(ई) (1) वानर (2) सवेरा (3) ज्वर (4) वन, कानन

## General Science

## Topic 1 : The Living World : Adaptations and Classification

**Q.1. (A)**

- (1) Air spaces in **stems** and **petioles** of aquatic plants help them to float in water.
- (2) The leaves of desert plants are modified into **thorns** to prevent evaporation of water.
- (3) Climbers have **tendrils** on their stems to grow to a great height with the support of trees.
- (4) Cuscuta has **haustorial (sucking)** roots for absorbing nutrients from its host.
- (5) Fishes have **air bladders** within their body which help them to float in water.
- (6) Bats fly with the help of **patagium**.
- (7) The theory of natural selection was given by **Charles Darwin**.
- (8) **Carl Linnaeus** suggested binomial nomenclature.
- (9) **29<sup>th</sup> April** is observed as 'World Frog Protection Day'.

**(B)**

- (1) Plants like Acacia are found in **deserts**.
- (2) Grasses in the **equatorial** regions grow very tall.
- (3) **Drosera** grows in soil which is deficient in nitrogen.
- (4) Frogs breathe through the **skin** in water.

**(C)**

- (1) Cuscuta      (2) Blackbuck      (3) Camel
- (4) Potato      (5) Yam

**(D)**

- (1) Cockroach      (2) Hen      (3) Cactus      (4) Mango

**(E)**

- (1) *Bos taurus*      (2) Binomial nomenclature
- (3) vast meadows      (4) *Homo sapiens*
- (5) modified root

**(F) (1)** (1) - (d), (2) - (c), (3) - (b), (4) - (a)  
**(2)** (1) - (d), (2) - (c), (3) - (e), (4) - (a), (5) - (b)

**(G) (1)**

Plant	Habitat	Type of root	Characteristics of leaves	Characteristics of stem
Lotus	Aquatic	Fibrous	Large and round with waxy layer	Hollow and flexible
Cactus	Desert	Tap	Leaves are reduced to thorns	Green and fleshy
Banyan	Terrestrial	Tap	Large, glossy green and elliptical	Thick and woody

**(2)**

Adaptation	Animal	Use of adaptation
Sharp teeth	Lion, tiger	To tear the flesh
Long and pointed beak	Woodpecker	To feed on ants, termites and other insects
Short beak	Coppersmith	To feed on fruits
Long and sticky tongue	Frog	To catch the prey
Long neck	Giraffe	To reach for food (leaves) on top of trees

**(H) (1)** Pine and deodar.  
**(2)** Acacia and cactus.  
**(3)** Bittergourd and grapevine.  
**(4)** *Cuscuta* (dodder) and gall.  
**(5)** Sundew, venus flytrap, pitcher plant.  
**(6)** Yak, polar bear, white fox, silver fox.

**(I)**

	Mango	Human	Rose
Kingdom	Plantae	Animalia	Plantae
Phylum	Anthophyta	Chordata	Spermatophyta
Class	Dicotyledonae	Mammalia	Dicotyledonae
Order	Sapindales	Primates	Rosales
Family	Anacardiaceae	Hominidae	Rosaceae
Genus	<i>Mangifera</i>	<i>Homo</i>	<i>Rosa</i>
Species	<i>indica</i>	<i>sapiens</i>	<i>gallica</i>

**(J)**

	Living things	Scientific name
(1)	Dog	<i>Canis lupus familiaris</i>
(2)	Cow	<i>Bos taurus</i>
(3)	Hibiscus	<i>Hibiscus rosa-sinensis</i>
(4)	Jowar	<i>Sorghum bicolor</i>

**Q.2. (A) (1)** **Adaptation** : Gradual changes that occur in the body parts and also in the behaviour of organisms, which help them to adjust to their surroundings is called adaptation.

**OR** Changes that take place in the various organs and life-processes of organisms, that enable them to live, feed, reproduce to perpetuate and protect themselves from their enemies in specific surroundings, depending upon the habitat and its geographical conditions are called adaptations.

**(2)** **Hierarchy of classification** : The formation of a hierarchy in classification starts with Kingdom Plantae or Kingdom Animalia. It proceeds further into

formation of groups and sub-groups depending upon basic similarities and differences. This is called the hierarchy of classification.

**(B) (1)** (i) Some aquatic plants are entirely afloat, while in some, the leaves and flowers float on the surface.  
 (ii) The air spaces are an adaptation seen in aquatic plants.  
 (iii) The air spaces in stems and petioles of aquatic plants help them float on water.

**(2)** (i) The lotus leaves have waxy coating on their upper surface.  
 (ii) So the water trickles off the leaves and keeps the leaves water proof.  
 (iii) Hence, leaves of lotus plant do not rot in water.

**(3)** (i) The leaf of lotus plant is large, flat and undivided.  
 (ii) It has a long and flexible stem and petioles with air spaces.  
 (iii) Due to the air spaces in the stem and petioles of lotus plant, lotus leaf floats on water.

**(4)** (i) Bitter-gourd and grape vine have weak stems.  
 (ii) To grow well, they cling to other things for support.  
 (iii) In order to cling to the support, they develop thin spring-like structures called tendrils.  
 (iv) These tendrils are modified stems.

**(C) (1) Terrestrial plants and Aquatic plants.**

	<b>Terrestrial plants</b>	<b>Aquatic plants</b>
(i)	These plants grow in places where water is neither too much nor too little.	(i) These plants grow in water.

(ii)	Root system of these plants is well developed.	(ii)	Due to availability of plenty of water, such plants are either rootless or with poorly developed roots.
(iii)	Stem is solid and branched.	(iii)	The stems may be reduced or long. Slender or spongy nature of stems is due to large air spaces in them which help them to float in water.

**(2) Terrestrial animals and Aquatic animals.**

	<b>Terrestrial animals</b>	<b>Aquatic animals</b>
(i)	Terrestrial animals are found on land like deserts, wetland, forest, grasslands etc.	(i) Aquatic animals are found in water bodies.
(ii)	The body of terrestrial animals is generally covered with hair, fur.	(ii) Their body is generally covered with scales.
(iii)	They breathe through nose.	(iii) They have gills for breathing.
(iv)	Their toes are generally not webbed, they have legs or limbs to move from one place to the other.	(iv) They have fins or webbed toes to swim in water.

**Q.3. (A) (1)** Diversity in living things is seen with respect to their shape, size, body parts, life cycle, mode of obtaining food and habitat.

**(2)** The leaves of lotus have a waxy coating on their upper surface. This keeps the leaf waterproof and hence water trickles off the lotus leaves.

**(3)** Lotus is an aquatic plant which floats on water. It has short and fibrous roots so that it remains firmly rooted in the soil at the bottom of the water bodies.

(4) Lotus, hydrilla, water lily and duckweed are four aquatic plants.

(5) Sloping branches give a conical shape to the plants found in the snowy region. This conical shape prevents the snow from accumulating on the tree during heavy snowfall and helps the plant to withstand extreme cold.

**(B) (1)**

- (i) Camels are adapted to survive in the desert.
- (ii) Their thick skin prevents loss of water from their body.
- (iii) They have folds of skin on their nostrils and long eyelashes to protect their eyes from sand.
- (iv) They also have long legs with flat and cushioned soles to walk easily on sand without sinking into it.
- (v) These characteristics help camels to move across the desert sand easily, providing a mode of transportation for people living in the desert. Hence, camel is called the ship of the desert.

**(2)**

- (i) Plants like cactus and Acacia have special characteristic features which help them to live in deserts with scarcity of water.
- (ii) In cactus, the leaves are modified into thorns to prevent loss of water by evaporation.
- (iii) Since the leaves of cactus are modified into thorns, their stems are green in colour and perform photosynthesis. They also store water and food, so they are fleshy too.
- (iv) In Acacia, the leaves are small with waxy coating to prevent loss of water.
- (v) Both the plants have long tap roots that penetrate deep into the soil in search of water.

**(3)**

- (i) Organisms are adapted to survive in the conditions in which they live.
- (ii) In order to live in a particular type of habitat and geographical conditions, a gradual and continuous change takes place in the various organs and life processes of the organisms, which enables them to live, feed, reproduce and protect themselves from their surroundings.
- (iii) So, to survive in a particular type of environment, the organisms must have certain adapted features and this is the reason we find certain kinds of organisms living in a particular climate.
- (iv) For example, animals in polar region are adapted to the extremely cold climate and they have special features, such as white fur, strong sense of smell, a layer of fat under the skin, wide and large paws for swimming and walking on snow.

**(4)**

- (i) There are innumerable organisms found on earth.
- (ii) Similarities, differences and the variety among living things are used as criteria for their classification.
- (iii) Different scientists have used different criteria and independently classified plants and animals.
- (iv) Under hierarchy of classification, a hierarchy is formed that starts with Kingdom Animalia or Kingdom Plantae and further groups and subgroups are added to the main group depending upon the similarities and differences among the organisms.

**Q.4.(A)** (1) (a) Penguins have white skin so that it can merge with the white background of the polar region. Also, it has thick skin with a layer of fat underneath to protect itself from extreme cold in the polar region.

(2) Penguins live in flocks sticking close to each other to keep themselves warm.

(3) Penguins live in polar regions. Penguins are adapted to survive in extreme cold climate and hence they are found in polar regions.

(4) (i) In order to live permanently in polar region, an organism must have certain special characteristics such as white skin, furry body, thick skin with fat underneath, strong sense of smell, webbed toes for swimming. These characteristics are necessary to withstand and survive in the extreme cold climate of the polar region.

(ii) Due to the extreme cold climate of the polar region, it is impossible for humans to live permanently in the polar region.

**(B) (1)** Animals and plants that are found in the desert have to face extreme heat and scarcity of water. So, they have special characteristics to adapt themselves to the surroundings.

Most of the desert plants are either leafless or their leaves are modified into thorns to prevent loss of water from their surface by evaporation. They have an extensive root system that goes deep into the soil in search of water. Their stems are green in colour to

perform photosynthesis and fleshy as they store water and food.

Similarly, the desert animals like camels have thick skin to prevent loss of water from their body, long legs with flat and cushioned soles to walk on the sand, folds of skin on the nostrils to protect them. Certain desert animals like rats, snakes, spiders are active at night, when it is comparatively cool, and during the daytime, they remain in the deep burrows.

(2) Different types of bushes and grasses grow in grasslands. Bushes generally have deep spreading roots, whereas grasses have fibrous roots, which help them to prevent soil erosion and grow well in grasslands. So, grasslands are lush green. In equatorial regions, grasses grow tall which enables animals like tiger, elephant and deer to remain hidden in the grasses and also from their prey or predator. Whereas in cold regions, animals like rabbit are found as the grasses in these regions are very short.

(3) Insects are adapted to different kinds of climatic conditions. They mature fast and lay eggs in large numbers. So, they reproduce very fast and hence are found in large numbers.

(4) Animals like frogs, butterflies, lizards, grasshoppers have typical colours which blend with those of their surroundings. This helps the animals to get camouflaged amidst grasses, parts of plants like stems, leaves, flowers, etc. Animals found in snowy region have white or silver body colour, which merges well with the white background. Such kind of adaptation

either protects the animals from their predators or their prey.

(5) Long ears is an adaptation seen in animals living in the grasslands. This adaptation enables them to hear sounds from long distances and different directions. The long ears also act as a cooling system for the animals. The long ears have thin skin. The large network of blood vessels provides a large surface area for heat exchange.

(C) Animals like garden lizard, crocodile, house lizard, snakes are reptiles. They have very short limbs or are limbless. For example, snake is a limbless reptile. They creep or crawl on the ground since they have short limbs. Animals like house lizard, garden lizard, crocodile use their muscles for creeping. They also show adaptation in skin, soles of feet, body colour, etc. Lizards have clawed toes and thin soles, whereas snakes have a scaly skin.

(D) (1) The given plant is a cactus. It belongs to the desert region.  
(2) A is thorn, B is stem.  
Thorns are modified leaves, so they reduce loss of water by evaporation, whereas stem performs photosynthesis and stores food and water.

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## Topic 2 : Plants : Structure and Function

Q.1. (A) (1) **Root** grows from the radicle.  
(2) The part that grows from inside the seed, above the soil is called **plumule**.  
(3) Leaf-blade of maize plant has **parallel** venation.  
(4) Roots that grow from the stem just above the soil are called **adventitious** roots.  
(5) **Androecium** is the male reproductive part of the flower.

(B) (1) The stalk of flower is called **pedicel**.  
(2) **Corolla** is made up of petals.  
(3) **Fertilized ovule** forms the seeds.  
(4) **Ovary** develops into a fruit.  
(5) **Gynoecium** is made up of carpel.

(C) (1) Sorghum (2) Pea (3) Onion  
(4) Receptacle (5) Carpel

(D) (1) Leaf margin (2) Corolla (3) Pollen grains  
(4) Dicotyledonous

(E) (1) - c, (2) - e, (3) - a, (4) - b

Q.2. (A) (1) **Root** : The part of the plant growing below the soil for support is called root.  
(2) **Tap root** : Roots of plants that produce secondary roots which grow obliquely and spread far and wide in the soil are called tap roots.  
(3) **Reticulate venation** : Arrangement of veins in a leaf to form a network of veins is called reticulate venation.

OR Secondary veins arise from the mid-vein in a leaf. They are branched and form a network. Such an arrangement of veins is called reticulate venation.

(4) **Parallel venation** : When veins are parallel, running from the leaf-base to the leaf apex, such type of arrangement of veins is called parallel venation.

(5) **Pollination** : Transfer of pollen grains from the anther to the stigma is called pollination.

(6) **Fibrous roots** : Thread-like or fibre-like roots arising from the stem that do not grow deep into the soil are called fibrous roots.

(B) **Monocotyledonous seeds** : maize (corn), sorghum (jowar)  
**Dicotyledonous seeds** : pea, coriander, mustard

(C) (a) Pineapple, jackfruit, spiny gourd  
(b) Rose, cactus, bougainvillea  
(c) Rose, bougainvillea, hibiscus  
(d) Sunflower, marigold, tulip  
(e) Mimosa plant, Prayer plant, Tamarind tree  
(f) Cashew nut, peach, mango  
(g) Jackfruit, pomegranate, custard apple  
(h) Morning glory, lotus, poppy  
(i) Pineapple, aloe, holy tree

Q.3. (A) (1) The parts of a seed are cotyledons, plumule and radicle.

(2) A cap-like structure that covers the tip of a root is called the root cap. The root-cap protects the root-tip from injuries.

(3) Fibrous roots are short, thread-like roots that grow under the soil very close to its surface and also they do not have branches. If plants like tamarind, banyan and mango had fibrous roots, the plants would not have

got enough support, they would have fallen and would not have grown well. These plants have hard, strong and thick stems with many branches which spread out in many directions.

(4) The roots grow from the root tip. If the root tip is injured, the roots will not grow and plants may not grow well or may die.

(5) Fenugreek and spinach have tap roots, whereas onion plants have fibrous root.

(6) Underground parts of plants like radish, carrot, beet and sweet potato are thick, fleshy and swollen as they store food in them. They are the roots of the plants, modified to perform the function of storing food.

(7) Insects flitting about around the flowers of plants help in pollination which further leads to fertilization and formation of fruits. Fruits contain seeds and seeds grow into new plants.

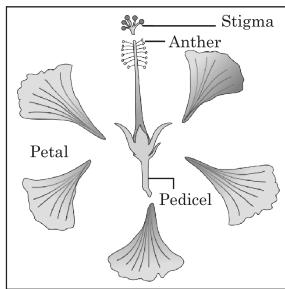
(B) (1) (a) The root tip is a delicate part of the root.  
(b) It is the region of growth of the root.  
(c) A cap-like structure called the root cap protects the root tip from injuries.

(2) (a) Plants like maize, sugarcane, sorghum have fibrous roots which are short, thread like and which do not grow deep into the soil.  
(b) Along with fibrous roots, these plants have roots which grow above the ground from the stem. They are called stilt roots.  
(c) These stilt roots give additional support to the stems of the plants and help them to stand erect.  
(d) Hence, plants like maize, sugarcane, sorghum have two types of roots.

**Q.4. (A) (1)** Flower is the reproductive part of a plant and it is the most colourful part of the plant.

The flower is attached to the stem with the help of stalk called pedicel.

There are four main parts of the flower. They are calyx, corolla, androecium and gynoecium which are supported on the expanded and swollen end of the stalk called the receptacle.

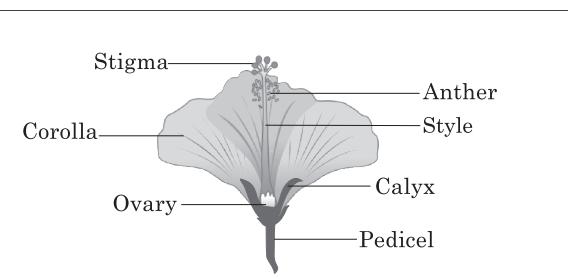


Calyx is the outermost part of the flower, which is made up of sepals. It is green in colour and protects the flower when it is in bud state.

Corolla is made up of petals. They are colourful and have fragrance.

Androecium is the male reproductive part of the flower. It consists of stamen and each stamen is made up of anther and filament.

Gynoecium is the female reproductive part of the flower. It is made up of carpel and carpel consists of stigma, style and ovary.



**(2) (i) Root :** The main functions of roots are anchoring the plant to the ground and supporting it, absorption of water and minerals from the ground.

Some roots are modified to perform additional functions like storage of food as in case of radish and beetroot.

**(ii) Stem :** The main function of stem is to provide support to the plant by holding leaves, flowers and buds. It also transports water and minerals absorbed by the roots and supplies food from the leaves to other parts of the plant. Stems of certain plants are modified to perform additional functions like storage of food as in the case of potatoes and photosynthesis as in case of cactus.

**(iii) Leaves :** Leaves help the plant to prepare their own food with the help of the chlorophyll in them. Some leaves are modified to perform the function of storage of food as in case of Aloe leaf.

**(iv) Flower :** Flower is the reproductive part of the plant. The main function of flower is to attract insects for pollination, which results in fertilization and formation of seeds.

**(v) Fruit :** Fruit bears seeds and seeds grow into a new plant.

**(3) (a) Similarities :** (i) Both the plants bear flowers and their seeds are edible.  
(ii) They do not grow very tall.

**Differences** : Jowar has monocotyledonous seeds and fibrous roots, whereas moong contains dicotyledonous seeds and tap roots.

(b) **Similarities** : Both onion and coriander are flowering plants.

**Differences** : (i) Onion is a monocot, whereas coriander is a dicot.

(ii) The roots of onion are fibrous and those of coriander are tap roots.

(c) **Similarities** : Leaves of both the plants have single undivided leaf blade and a single mid-rib, so they are simple leaves. Their leaf margin is entire.

**Differences** : Leaves of banana are very big with very thick mid-rib and show parallel venation. Whereas leaves of mango are comparatively very small with thin mid-rib and their leaf-blade has reticulate venation.

(d) **Similarities** : Both plants are monocots. They have fibrous roots and the leaves have parallel venation.

**Differences** : Coconut trees grow very tall and have thick and woody stems, whereas jowar stalk plants are short plants with thin and soft stems.

(4) (i) **Leaves with smooth surface** : Mango is a plant which has leaves with smooth surface. The stem of mango is thick and woody, it has tap roots. It bears flowers and its fruits contain only one seed. The seeds of mango have two cotyledons, so it has dicotyledonous seeds.

Leaf margin of mango is entire and the leaves are simple leaves.

(ii) **Leaves with rough surface** : Coconut tree has leaves with rough surface. It has long compound leaves with parallel venation. The coconut tree has thick and woody stem. It has fibrous roots. It also has adventitious roots to give additional support to the plant.

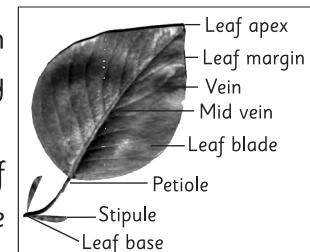
(iii) **Fleshy leaf** : Aloe is a plant with fleshy leaf. These leaves are thick, fleshy and juicy as they can store water. There are spines on the margin of these leaves. Aloe grows in desert regions where there is scarcity of water and it has fibrous root system.

(iv) **Spines on leaf** : Pineapple plant has spines on its leaves. It is a fruit-bearing plant that grows in tropical regions. The leaves of pineapple plant are succulent, that is they can store water. The leaves are closely spaced in rosette on a thick fleshy stem. It is a monocot having fibrous root system.

(B) (1) Leaves grow from the nodes on a stem and they are generally thin, flat and green in colour.

(2) The broad, spread-out part of the leaf is called the leaf-blade or lamina.

(3) The edge of the leaf is called the leaf-margin. Leaf margins are of different types, like entire, dentate or lobe. The tip of the leaf is called the leaf apex which may be tapering, pointed or rounded.



(4) The stalk by which the leaf is attached to the stem is called petiole. Some leaves may or may not have a stalk.

(C) **Image A** : It is a maize (corn) seed. It is a monocotyledonous seed. It cannot be divided into two equal parts.

**Image B** : It is a bean seed. It is a dicotyledonous seed. It can be divided into two equal parts.

### Topic 3 : Properties of Natural Resources

**Q.1. (A)** (1) The capacity of air to hold moisture depends upon the **temperature** of the air.

(2) Water does not have a **shape** but has definite **volume** and **mass**.

(3) While freezing, the **density** of water is lowered.

(4) **Neutral** soil has pH 7.

**(B)** (1) Density of water is **greater** than ice.

(2) **Silt** soil contains large proportion of organic material.

(3) The proportion of small particles is maximum in **clay** soil.

(4) To determine the pH of soil, a mixture of water and soil is taken in **1:2** proportion.

(5) **Peanut** crop is cultivated to restore the fertility of the soil.

**(C)** (1) Atmospheric pressure at sea level is **1,01,400** N/m<sup>2</sup> under ordinary conditions.

(2) Atmospheric pressure is measured using an instrument called a **barometer**.

(3) The density of water is **1** gm/cc.

(4) The ratio of mass to the volume of a substance is called its **density**.

(5) Water expands when the temperature falls below **4 °C**.

(6) **Solvent** is the substance in which the solute dissolves.

(7) The proportion of particles of various sizes in the soil determines its **texture**.

(8) Water drains rapidly through **sandy** soil.

**(D)** (1) (i) - (b), (ii) - (a), (iii) - (c)

(2) (i) - (c), (ii) - (d), (iii) - (b), (iv) - (a)

**(E)** (1) True (2) False (3) True

(4) True (5) False

**(F)** (1) Fluidity (2) Terracotta soil (3) China clay

**Q.2.** (1) Air contains oxygen, carbon dioxide, nitrogen, water vapour and some inert gases. Air is a homogeneous mixture because the gases present in it are in a definite proportion by volume.

(2) No, there is no atmospheric pressure on the moon as there is no air on the moon.

(3) If the temperature over an area increases, the air over that region will expand, become lighter and rise up. So, the pressure of air at that region will decrease.

(4) When an uncorked empty bottle is dipped into the water in slanting position, the air is seen escaping from the bottle in the form of air bubbles and also there is

increase in the level of water in the bottle as the air escapes from the bottle.

(5) When air is filled into a balloon, its shape changes and its size increases. It shows that air occupies space, has certain volume and also has mass and weight.

(6) The density of ice is less than water, so ice floats on water.

(7) Sea water contains a large amount of salt dissolved in it. Due to the dissolved salts in sea water, its density is more than that of rain water.

(8) Clay soil has the greatest proportion of small particles. This soil is sticky when wet, as it has high water holding capacity but very hard and cloddy when dry. Therefore, it is difficult to plough clay soil.

(9) Sandy soil has a greater proportion of large particles, that is sand and gravel. Sandy soil has the least capacity to hold water, so its particles do not stick together. Hence, it is easy to plough sandy soil. Silt soil has a medium capacity of holding water compared to sandy and clay soils.

(10) Silt soil has a medium capacity of holding water compared to sandy and clay soils.

(11) Silt soil is suitable for cultivation. The particles of silt soil are of medium size. This soil contains a large proportion of organic materials and also its capacity to supply nutrients is much greater, so the plants grow well in this soil. Hence, silt soil is suitable for cultivation.

(12) The advantages of good soil structure are that the roots get sufficient supply of oxygen. Water drainage becomes good and the roots of plants grow well.

(13) Air contains very fine particles of some gases, dust, smoke and moisture. When a ray of light falls on these minute particles, the particles deflect the light in different directions and thus scatter the light.

(14) Soil is a thin layer of material covering the earth's surface. It is made up mainly of organic matter (humus), minerals, small rocks, and various microbes. Soil is formed by a natural process (weathering) in which the bed rock breaks into pieces due to various physical, chemical, and biological factors. The process of soil formation is slow and continuous.

(15) Soil is composed of the following: weathered rock, minerals, organic matter, air, water and living organisms.

**Q.3.(1)**

- (i) Air is a mixture of various gases like oxygen, carbon dioxide, nitrogen and inert gases.
- (ii) These gases are uniformly mixed throughout the air.
- (iii) Also, the properties and the composition of air is the same throughout, so air is said to be a homogeneous mixture of various gases.

**(2)**

- (i) Many substances dissolve in water without chemically reacting.
- (ii) Since water dissolves many substances, it is called universal solvent.

**(3)**

- (i) Water is a universal solvent used for cleaning

purposes such as bathing, washing clothes and utensils at home.

- (ii) It is also used as a solvent in factories, industries and hospitals.
- (iii) Being a universal solvent, water can dissolve more substances than any other liquid.
- (iv) Water is capable of dissolving solids, liquids and even gases.

Hence, there is no alternative to water for cleaning purpose.

**Q.4. (1) Given :**

Mass (m) = 1 kg, volume (v) = 1 litre, Density (D) = ?

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

$$\begin{aligned}\text{Density (D)} &= \frac{1\text{kg}}{1\text{ litre}} \\ &= 1\text{ kg/litre}\end{aligned}$$

The density of water will be 1kg/litre or  $1\text{ kg/m}^3$ .

**(2) Given :**

Mass (m) = 6 gm, volume (v) = 3 cc, Density (D) = ?

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

$$\begin{aligned}\text{Density (D)} &= \frac{6\text{ g}}{3\text{ cc}} \\ &= 2\text{ gm/cc.}\end{aligned}$$

The density of the object is 2 gm/cc.

The object will sink in water as its density is more than that of water.

**Q.5.**

No.	Types of soil	Colour	Uses
(1)	<b>China clay (Kaolin)</b>	White	To make crockery, bathroom tiles, tanks, laboratory apparatus.
(2)	Shadu soil	Whitish	<b>To make statues and idols.</b>
(3)	<b>Terracotta soil</b>	Red	Decorative articles and pots for growing plants.
(4)	<b>Multani soil</b>	Brownish	<b>Cosmetics</b>

**Q.6. (A) (1)**

	<b>Sandy soil</b>		<b>Clayey soil</b>
(i)	The proportion of sand, i.e. large particles is high in sandy soil.	(i)	The proportion of small particles is maximum in clayey soil.
(ii)	It has very less capacity to hold water, as water drains rapidly through it.	(ii)	It has very high capacity to hold water, as water does not drain easily through it.
(iii)	It is easy to plough sandy soil.	(iii)	It is difficult to plough clayey soil.

**(2)**

	<b>Silt soil</b>		<b>Clayey soil</b>
(i)	The particles of silt soil are of medium size.	(i)	Clayey soil has a great proportion of small particles.
(ii)	It has medium capacity to hold water.	(ii)	It has the greatest capacity to hold water.
(iii)	It is much more ploughable than clayey soil.	(iii)	It is difficult to plough clayey soil

**Q.6. (B) (1)** (i) Air has certain capacity to hold water vapour.  
(ii) This capacity of air to hold water vapour depends upon the temperature.  
(iii) During the night, when temperature of the air is low, its capacity to hold water vapour becomes less.  
(iv) At such time, the excess vapour condenses to form water droplets on the surfaces of leaves and dew is formed.  
(v) Hence, we find dew drops early morning.

**(2)** (i) In cold countries as the temperature of the surroundings goes down, the temperature of water in the rivers or lakes also decreases.  
(ii) When the temperature of water decreases below  $4^{\circ}\text{C}$ , water expands instead of contracting and its density decreases. This is due to anomalous behaviour of water.  
(iii) At  $0^{\circ}\text{C}$  water freezes to form a layer of ice at the surface of water, since the density of ice is less than that of water.  
(iv) The water below this layer of ice remains at  $4^{\circ}\text{C}$  and hence in cold countries aquatic animals continue to survive even after the rivers or lakes freeze in winter.

**Q.6. (C) (1)** (i) Air contains water vapour and the level of humidity of the air is determined by its capacity to hold water vapour.  
(ii) If the amount of water vapour in the air increases, the humidity of the atmosphere will increase and we will feel dampness.

**(2)** (i) Soil contains organic and inorganic ingredients in certain amounts, which help plants to grow well in the soil.  
(ii) If only one crop is grown repeatedly, it will utilize all the ingredients of the soil for its growth and the fertility of the soil will decrease.

**(3)** (i) Due to anomalous behaviour of water, as water freezes to form ice, it expands and its volume increases.  
(ii) As water expands while freezing, it will exert pressure on the walls of the completely filled glass bottle and the bottle will break.

**Q.7. (1)** (i) Plant growth : Soil contains various organic and inorganic ingredients, which supply nutrients to the plants and help plants to grow.  
(ii) Water conservation : Soil has capacity to hold water. As a result, water becomes available to us throughout the year from deep ponds, lakes, bunds.  
(iii) Plasticity : Soil has the property of plasticity i.e. it can be given any desired shape. Due to this property, soil is used to make articles of different shapes. These articles can be baked to make them hard. For example, articles like water storage earthen pots, earthen lamps, idols, bricks, etc. are made from soil.

**(2)** (i) Sound needs material medium for its transmission.  
(ii) Air is a medium through which sound can travel.

- (iii) All the sound that we hear, reaches us through the surrounding air.
- (iv) Since there is no air in space, sound cannot be heard in space.
- (v) Air is a medium that is necessary for the transmission of sound, so that it can be heard.

**(3)**

- (i) The proportion of the various ingredients of soil can be determined by soil testing.
- (ii) The colour, texture, and the organic matter of the soil are determined during soil testing.
- (iii) Soil testing can help a farmer to find out if there is any deficiency of ingredients in the soil and take necessary steps to remove the deficiency, so that he gets a good harvest.
- (iv) Soil testing can also help a farmer to find which type of crop will grow well in a particular kind of soil.

**(4) The properties of water are :**

- (i) It is a universal solvent.
- (ii) Under ordinary conditions, water occurs in liquid state.
- (iii) Water is a transparent fluid substance.
- (iv) It is tasteless and odourless.
- (v) It does not have its own shape. It takes the shape of the vessel (container) in which it is kept.
- (vi) Water is a bad conductor of heat and electricity.

**Q.8.** Water is a fluid substance, so it can seep through the cracks or crevices in rocks and get collected there, as shown in picture a. According to picture b, when the temperature of the surroundings goes down, water freezes and turns into ice at  $0^{\circ}\text{C}$ . When the temperature goes below  $4^{\circ}\text{C}$ , water starts expanding. As it freezes, it exerts tremendous pressure on the walls of rocks due to anomalous behaviour of water and the rocks crack. The expansion of water after freezing results in widening of the cracks as shown in image (b).

#### **Topic 4 : Nutrition in Living Organisms**

**Q.1. (A)**

- (1) Plants convert light energy into **chemical** energy and store it in the form of food.
- (2) The carbon dioxide from the air is absorbed by plants through **stomata** on their leaves.
- (3) Leaves contain **chlorophyll**, which absorbs sunlight during the process of photosynthesis.
- (4) Root-nodules of leguminous plants contain **Rhizobium** micro-organism, which helps in nitrogen fixation.
- (5) **Azotobacter**, a micro-organism present in the soil, converts atmospheric nitrogen into nitrates.
- (6) **Lichen** is an example of symbiotic relationship of algae and fungi.

**(B)**

- (1) **Vitamin** is a micro-nutrient.
- (2) **Oxygen** is not necessary for photosynthesis.
- (3) **Loranthus** is a partially parasitic plant.
- (4) Mushroom and yeast are **saprophytic** plants.
- (5) Mushrooms are rich in **iron and vitamins**.

(C) (1) Micronutrients (2) Phloem  
 (3) Biological nitrogen fixation  
 (4) *Cuscuta* (5) Saprophytic plant

(D) (1) oxygen (2) vitamins (3) proteins  
 (4) nutrition (5) lion (6) deer

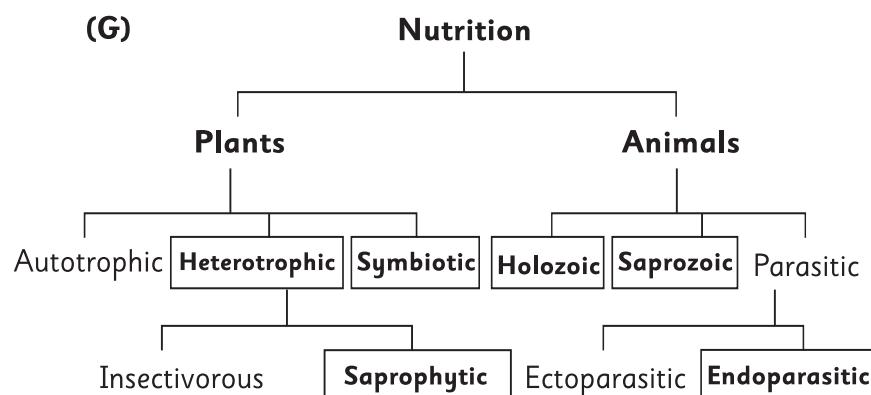
(E) (1)

Herbivores	Carnivores	Omnivores	Scavengers	Decomposers	Parasites
cow	tiger	human	vulture	bacteria	tick
deer	lion	sparrow	cockroach	fungus	
goat	frog	chameleon			
buffalo		fox			
		parrot			

(2) **Endoparasites** : tapeworm, hookworm, roundworm

**Ectoparasites** : louse, bed bug, leech, tick

(F) (1) Chloroplast (2) *Cuscuta* or Dodder  
 (3) Magnesium and iron (4) Snail  
 (5) Pseudopodia (6) Bobcat or udmanjar



(H) (i) - (d), (ii) - (c), (iii) - (a), (iv) - (b)

**Q.2. (A) (1)** **Photosynthesis** : The process in which green plants, with the help of sunlight and chlorophyll make their own food in their leaves, using water and nutrients from the soil and carbon dioxide from air is called photosynthesis.

**(2)** **Symbiotic nutrition** : The type of nutrition in which two or more than two different types of plants live together to fulfil their needs of nutrition, protection, support, etc., with each other's help is called symbiotic nutrition.

**(3)** **Saprophytic plants** : Plants which obtain their food from dead and decaying bodies of other organisms are called saprophytic plants.

**(4)** **Nutrition** : The process of taking in and using food, which takes place in living organisms is called nutrition.

**Q.2. (B) (1)**

	<b>Autotrophs</b>	<b>Heterotrophs</b>
(i)	Organisms which can prepare their own food are called autotrophs.	(i) Organisms which cannot prepare their own food and depend on plants or animals for their food are called heterotrophs.
(ii)	All green plants are autotrophs.	(ii) Some non-green plants and animals are heterotrophs.

(2)

	<b>Macronutrients</b>	<b>Micronutrients</b>
(i)	Nutrients present in foodstuffs, required in large quantities by living organisms for their growth are called macronutrients.	(i) Nutrients present in foodstuffs, required in very small quantities by living organisms for their growth are called micronutrients.
(ii)	Carbohydrates, proteins and fats are macronutrients.	(ii) Minerals and vitamins are micronutrients.

**Q.3. (1)** (i) Insectivorous plants generally grow in soil or water deficient in nitrogen compounds.

- (ii) They do not get enough nitrogen, so they fulfil their nitrogen requirement by capturing and digesting the insects, that is, they feed on insects.
- (iii) In order to attract the insects, insectivorous plants are attractively coloured.

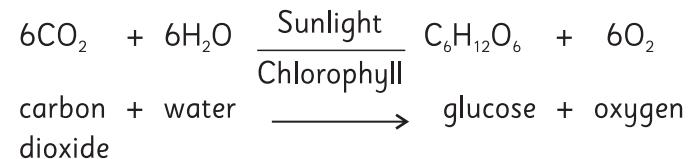
**(2)** (i) Different organisms feed on different types of food.

- (ii) Depending upon what they eat, organisms have specific types of mouth parts to ingest their food.
- (iii) Butterflies suck nectar from flowers for their nutrition, so they have long tube-like proboscis.

**Q.4. (1)** When all the nutrients that the body needs are not obtained in the proper proportions in the diet, it is called malnutrition.

**(2)** Malnutrition can be prevented by eating a healthy, balanced diet. A diet which will include plenty of fruits, vegetables, cereals, pulses, etc.

**(3)** Chemical reaction of photosynthesis :



**(4)** The leaves of the *Loranthus* plant carry out photosynthesis.

**(5)** *Loranthus* plant being parasitic obtains minerals and water from the host plant.

**(6)** *Loranthus* is a partially parasitic plant because it can perform photosynthesis, but is dependent on the host plant for water and minerals needed for photosynthesis.

**(7)** Amoeba, Euglena, Paramoecium.

**(8)** A pitcher plant grows in soil which is deficient in nitrogen. Hence, to fulfill the need of nitrogen, a pitcher plant feeds on insects.

**(9)** The plants that grow on the body of other plants to obtain food are called parasitic plants. Parasitic plants are of two types : Completely parasitic plants e.g., *Loranthus* and Partially parasitic plants e.g., *Cuscuta*.

**(10)** Living organisms need nutrition to supply the energy required for carrying out various life processes.

**Q.5. (1)** Autotrophs are organisms that have the ability to produce their own food without depending on anyone else. Even though we prepare variety of foodstuffs and dishes at home, we are not autotrophic organisms since the ingredients for preparing them comes from other organisms.

(2) Autotrophs are greater in number because heterotrophs are dependent on them for food. If the number of heterotrophs would be more than number of autotrophs, there won't be any autotrophs left. This would mean no food for heterotrophs as well. Hence, to maintain the balance in nature, the number of autotrophs are greater than the number of heterotrophs.

(3) The desert region does not have many different types of plants and animals compared to the sea. As autotrophs (green plants) are less, the number of heterotrophs who are dependent on autotrophs are also less. However, in the sea, there are plenty of organisms ranging from aquatic plants to small and big fishes. Since, the sea environment supports survival of heterotrophs, they are found in higher numbers in the sea.

(4) Ectoparasitic animals live outside the body of the host, while endoparasites live inside the body of the host. Ectoparasites suck blood from the host body, while endoparasites get nourishment from the nutrients of the host body. Both types of parasites can cause infection in the host body.

(5) Preparation of food by plants through the process of photosynthesis requires the presence of chlorophyll pigment. Since, this pigment is only present in the green parts of the plant, food is not produced in any other part of the plant except the green ones.

(6) Plants can produce their own food through the process of photosynthesis. In this process, plants make food in their leaves using water and nutrients from the soil, carbon dioxide from air and sunlight and chlorophyll. Photosynthesis is the process by which green plants convert light energy into chemical energy and store it in the form of food. The chloroplasts present in leaves contain chlorophyll, which absorbs sunlight and help convert carbon dioxide and water into food. Oxygen is released in this process.

(7) Nutrition in animals involves various steps. These are :

- Ingestion : Food is taken into the body.
- Digestion: Food is converted into simple soluble forms.
- Absorption: Soluble food is transferred to blood.
- Assimilation: Absorbed food is utilized by cells and tissues for energy production, growth and repair.
- Egestion : Undigested food and waste products are removed from the body.

(8) The dark red or purple colour in leaves is due to the presence of anthocyanins. Chlorophyll is present in non-green plants as well but in small amounts. Hence, photosynthesis occurs in dark red or purple coloured leaves.

(9) Chemosynthesis is the process in which food is synthesized using energy from chemical reaction. To obtain energy, chemical compounds are broken down. Chemosynthesis does not involve utilization of sunlight like photosynthesis. Eg. Nitrogen-fixing bacteria, iron-oxidising bacteria are chemosynthetic.

(10) The different substances excreted by plants are carbon-dioxide, water, nitrogenous compounds, resins, gum,

tannins, organic acids, volatile oils, etc. The metabolic and excretory products produced during photosynthesis and respiration diffuses out of the plant.

(11) [Refer Q. 4. (8)]

(12) Carbohydrates, proteins, and fats are macronutrients, while vitamins and minerals are micronutrients. Carbohydrates provide source of energy for the body, proteins help in the repair of body tissues and energy, while fats provide energy to the body. Vitamins and minerals perform several essential bodily functions.

### Topic 5 : Food Safety

**Q.1. (A)** (1) Wrong methods of farming, improper storage and wrong methods of distribution of food lead to **quantitative** wastage of food.

(2) Washing the vegetables after cutting them, excessive use of food preservatives, mishandling of fruits are some causes of **qualitative** wastage of food.

(3) Prevention of food spoilage by microbial growth and infestation by pests is called **food protection**.

(4) Full form of 'FSSAI' is **Food Safety and Standards Authority of India**.

(5) The adulterant **brick dust** is generally added to red chilly powder.

**(B)** (1) Drying the foodgrains from farms under the hot sun is called **dehydration**.

(2) Materials like milk are instantly cooled after heating up to a certain high temperature. This method of food preservation is called **pasteurization**.

(3) Salt is a **natural** type of food preservative.

(4) Vinegar is a **chemical** type of food preservative.

(5) Air tight packets of potato wafers and other food products are preserved by filling **nitrogen gas** in the packets.

**(C)** (1) salt      (2) turmeric powder      (3) almond  
 (4) storing      (5) beans      (6) rava

<b>Sr. No.</b>	<b>Foodstuff</b>	<b>Adulterant</b>
(1)	<b>Turmeric powder</b>	Metanyl yellow
(2)	Black pepper	<b>Papaya seeds</b>
(3)	<b>Rava</b>	Iron filings
(4)	Honey	<b>Sugar syrup</b>

<b>Sr. No.</b>	<b>Food/ Source</b>	<b>Nutrients obtained</b>	<b>Functions in body</b>
(1)	Jowar, wheat, millet (bajra), rice	Carbohydrates	Provide energy to the body
(2)	Beans and pulses	Proteins	Help in growth, repairing wear and tear of the body
(3)	Fruits and vegetables	Minerals, vitamins, fibres	Minerals and vitamins improve the body's resistance to diseases and fibres are effective in regulating the process of digestion and prevent constipation.

Sr. No.	Foodstuff	Adulterant
(1)	Milk	<b>Water</b>
(2)	Red chilly powder	<b>Brick dust</b>
(3)	<b>Black pepper</b>	Seeds of papaya
(4)	Ice cream	<b>Washing powder</b>

**Q.2. (A)** (1) **Food protection** : Prevention of food spoilage by microbial growth and infestation by pests is called food protection.

(2) **Food preservation**: Use of various preservatives to prevent food spoilage due to internal factors for a long period of time, is called food preservation.

(3) **Pasteurization**: The method of food preservation in which foodstuffs like milk are heated up to a certain temperature and then cooled instantly, to destroy the microbes present in them and keep them safe for a longer time is called pasteurization.

**(B)** (1) (i) Low temperature retards the growth of food spoiling micro-organisms like bacteria and fungi present in the food materials.

(ii) Low temperature also prevents the action of food-spoiling enzymes present in the food material.

(iii) Since the biological and chemical reactions in food materials are slowed down at low temperature, food remains in good condition for a longer duration.

(iv) Hence, food remains safe at 5° Celsius.

(2) (i) As a result of the tradition (custom) of offering and serving too much food to guests at functions, a large amount of food gets wasted.

(ii) In a buffet style, people generally tend to serve themselves only as much as they can eat, and this prevents wastage of food.

(iii) Thus, in order to avoid wastage of food, nowadays food is served buffet style during large gatherings.

**Q.3. (A)** (1) We should avoid buying sweetmeats from vendors selling uncovered sweetmeats in open places, as uncovered food gets contaminated with disease-causing germs due to flies sitting on them. We can also bring it to the notice of the concerned authorities, so that such practices can be stopped and help in preventing spread of diseases.

(2) We should insist the 'pani puriwalla' to serve hygienically. Better avoid eating from such places. We can also bring it to the notice of the concerned authorities, so that necessary action can be taken against such people. As, when food is served in an unhygienic manner, it causes various diseases.

(3) Fruits and vegetables are perishable items as their shelf life is very short. If you have purchased them in large quantities, then they should be properly stored, by keeping them in refrigerator or certain food items like pickles, sauces, etc., can be made from them. You can

also give them to some needy people instead of spoiling and throwing them away.

(4) In order to protect foodstuffs from pests like rats, cockroaches, wall lizards, neem leaves or pesticides can be used, which will keep them away. The food should be stored in air-tight containers and in dry areas.

(B) (1) There are various reasons for the qualitative wastage of food. Wrong methods of farming like hand-sowing of seeds, inadequate threshing, improper storage and wrong methods of distribution of foodstuffs results in qualitative food wastage. Food also gets wasted when too much is served to the guests at traditional feasts. Wastage of food can be prevented by adopting modern farming techniques like using machines to sow seeds, for threshing, better storage facilities and proper methods of distribution of foodstuffs. Wastage of food at large gatherings can be avoided if buffet style is used, as people will tend to serve themselves as much as they can eat.

(2) The cooked rice remains underdone when rice is not cooked in the right way. For example, when cooked with less quantity of water or time than required. Instead of throwing the rice, add hot water to it and cook the rice for some more time till it is fully cooked.

(3) This happens if the wheat was not dried properly after harvest to remove the moisture content or

was not stored properly. We should first sun-dry the wheat properly to remove the moisture content in it, then it should be stored properly or ground to make flour, otherwise it will get infested by insects and get spoiled.

(4) Yoghurt tastes too sour or slightly bitter when it is kept for a longer time than its shelf life or if it is made from milk that had not been boiled and cooled. The micro-organisms present in the yoghurt bring about an undesirable change like the decomposition of fat present in the milk into butyric acid, which turns the yoghurt too sour or bitter. We should not consume such yoghurt.

(5) Cut fruits turn black due to oxidation reaction. We should not cut fruits and keep them for a long time. They should be consumed as soon as they are cut. This will prevent fruits from turning black and will help to retain their nutritive value.

(C) In 1954, Parliament passed the 'Prevention of Food Adulteration Act'. It has been amended from time to time and the amendment of 1976 provides for 'life imprisonment' for the person involved in adulterating food with a harmful substance. There are clear directions that food should be properly stored, packing material should not endanger the food or medicines and there should be clear and legible information on it about the manufacturing date, expiry date and instructions for storage.

Q.4. (A) (1) (i) Milk is pasteurized by heating it to a temperature of 80°C for 15 minutes and then cooling it quickly.

(ii) This destroys the microbes present in the milk and keeps it safe for a longer duration of time.

**(2)** (i) Food is adulterated by either removing some important component of food or by mixing low quality, inedible or cheaper materials to it.

(ii) By consuming adulterated food materials, the health of all people, young and old, poor or rich is endangered.

(iii) Different types of adulterants affect our health in different ways.

(iv) Certain adulterants cause abdominal discomfort or poisoning, while some may affect the functioning of some of our organs or may even cause cancer if consumed for a long period of time.

**(3)** (i) Foodstuffs like milk are boiled at regular intervals, as boiling kills micro-organisms and milk does not get spoiled.

(ii) Cooked food, if it has to be kept safe for a long time, is kept in the refrigerator as a low temperature prevents the growth of micro-organisms in the foodstuffs.

(iii) Foodgrains like rice, wheat, pulses are dried well and then stored in air tight containers. Drying reduces the water content in the grains and they do not get infested easily by insects. Sometimes neem leaves are also used.

(iv) While preparing jams, murabbas or sauces, right proportion of sugar, salt or even vinegar is added, as these substances are preservatives and keep the food safe for a long time.

**(4)** (i) Food spoilage occurs when various kinds of changes occur in food materials like change in its colour, odour, texture, quality, taste or when there is a loss of its nutrient content.

(ii) For example, fruits turn black or change taste, meat becomes sour or peanuts become rancid.

(iii) Various factors that causes spoilage of food stuffs are as follows :

- Improper handling, as when they are overcooked or washed after cutting.
- Improperly stored, that is when they are stored in a damp place, they get contaminated by micro-organisms or insects. Some foodstuffs like meat and milk get spoiled either by turning acidic or alkaline due to chemical reactions on contact with metals.
- Improper transportation, that is, when the foodstuffs are not packed properly, mishandled, or there is miscalculation of time to transport foodstuffs from production place to the consumer causes spoilage of food.

(5) (To be done by students).

Refer textbook page 37.

Food material	Milk	Red chilly powder	Turmeric powder	Rava
Adulterant	Water	Brick dust	Metanyl yellow	Fine iron filings
	Starch			
Test	Take a glass slide. Put a drop of milk on it and slightly incline it to spread the drop.	Take a spoonful of chilly powder in a beaker, add water upto half of the beaker, stir it and leave it undisturbed for a few minutes.	Take a pinch of turmeric powder in a test-tube, add a small quantity of water to it, shake the mixture and add a few drops of conc. HCl.	Pass a magnet through the rava.
	Take some milk in a test-tube, add few drops of iodine to it.			

Conclusion	If the spread mark of milk does not appear milky-white, water must have been added to it.	If a red layer is seen settled at the bottom of the beaker it must have been adulterated with brick dust.	The mixture becomes red on addition of conc. HCl and the red colour does not disappear if metanyl yellow is present.	Iron filings adhere to the magnet if rava is adulterated with iron filings.
	If milk turns dark blue in colour, milk is adulterated with starch.			

# History

## Topic 1 : Sources of History

**Q.1. (A)** (1) Arabic-Persian (2) Emperor Akbar  
(3) Marathi (4) Proofs  
(5) copper plate (6) Paramanand  
(7) Forts (8) Maharashtra

**(B)** (1) True (2) True (3) False (4) True  
(5) False (6) True

**(C)** (1) - (e), (2) - (d), (3) - (a), (4) - (b), (5) - (c)

**(D)** (1) Unwritten sources (2) Stories  
(3) Temples (4) Tarikh

**(E)** (1) legend (2) tarikh (3) bakhar  
(4) powada (5) inscription  
(6) monument

**(F)** (1) (1) Devanagari (2) Modi  
(2) (1) Mahikavatichi Bakhar (2) Sabhasad Bakhar  
(3) (1) Robert Arm (2) Grant Duff  
(4) (1) Folk songs (2) Powada  
(5) (1) Forts (2) Buildings  
(6) (1) Biographies (2) Paintings

**Q.2. (1)** **Material Sources** : Material sources means the real or physical things available to us in the study of history. e.g., forts, buildings, monuments, etc.

**(2)** **Written Sources** : Written sources means the feelings, emotions or informations expressed or written on paper. They are scripts, languages, biographies, etc.

We can also gather information about people's life, their food items, festivals, etc.

**(3)** **Oral Sources** : Oral resources means spoken resources. Oral sources are passed on from generation to generation e.g. owis, folk songs, legends, etc.

**Q.3. (1)** Monuments include samadhis, graves and veergalas.  
**(2)** Tarikh means sequence of events.  
**(3)** Impartiality and neutrality are the important qualities of the author in the writing of history.  
**(4)** Individuals, society, place and time are the four factors important from the viewpoint of history.  
**(5)** The period from ninth century C.E. till the end of the eighteenth century C.E. is considered to be the Medieval period.  
**(6)** A carving on a stone or wall is called "an inscription".  
**(7)** The coins made by different rulers using metals like gold, silver, copper are important sources of history. These coins give us information about the language, rulers and their period, governance, religious ideas, personal details, financial transactions at that time and advancement of metallurgy in that period. The images of Ram-Sita or Shiva Parvati on the coins denote the religious coordination of those days.

**Q.4. (1)** Though history is written once, research on it goes on continuously. New sources and informations came to light through these research. Accordingly history has to be rewritten.  
**(2)** Yes. It is necessary to evaluate sources of history because history is based on authentic evidences and proofs. They must be verified and used judiciously only after critical analysis.

**(3)** An inscription helps us to understand features like the language, script, social life of a period. Stone inscriptions are written on hard surfaces like stone or rocks and hence cannot be destroyed easily. Therefore, it is considered to be an authentic source of history.

**(4)** Oral sources are the folk literature like owis, powadas, folk tales, legends, etc. They are passed on from generation to generation. They are based on the lives of the people of that particular period. So they reveal the various aspects of the people's lives.

## Topic 2 : India Before the Times of Shivaji Maharaj

**Q.1. (A)** (1) Bhillam Yadava (2) Pal  
 (3) Anandpur (4) Gadadharshinha  
 (5) Khanua (6) Durgadas Rathod

**(B)** (1) Sikhs (2) Mewad (3) Arabs

**(C)** (1) - (d), (2) - (a), (3) - (b), (4) - (c)

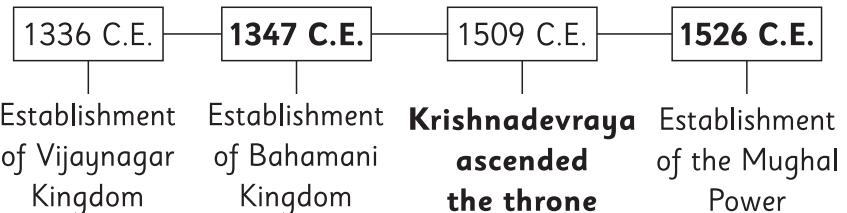
**(D)** (1) The Yadava period  
 (2) Govind III and Krishna III (3) Durgadas Rathod  
 (4) Ahom (5) Queen Durgavati  
 (6) Maharana Pratap (7) Babur  
 (8) Hasan Gangu (9) Khalsa Dal

**(E)** (1) Ghaznis (2) Sikhs (3) Babur  
 (4) Sultanate (5) Shershah

**(F)** (1) (b) Harihar and Bukka founded the Vijaynagar Kingdom.  
 (c) Krishnadevarya died.  
 (a) Disintegration in the Bahamani Kingdom.

**(2)** (d) Death of Muhammad Ghuri.  
 (a) Establishment of the Vijaynagar Kingdom.  
 (c) Establishment of the Bahamani Kingdom.  
 (b) The Sultanate came to an end.

## (G) (A)



**(H)** (1) True (2) False (3) True (4) False (5) False

**(I)** (1) Qutubuddin Aibak (2) Daulatkhan Lodi  
 (3) at Bidar (4) Vijayanagar (5) Hampi  
 (6) Hazar Ram Mandir and Vitthal Mandir

**Q.2. (1)** The battle of Talikot was fought between Adilshahi, Nizamshahi, Qutubshahi and Baridshahi on one side and Vijaynagar on the other side.

**(2)** Prithviraj Chauhan was the valiant king of the Chauhan dynasty.

**(3)** Bukka brought the region upto Rameshwar under his control.

**(4)** Guru Gobindsingh became the tenth Guru of the Sikhs.

**(5)** Babur was the ruler of Farghana.

**(6)** The army of the Delhi Sultan was defeated by Hasan Gangu.

**(7)** The capital of the Bahamani Kingdom was Gulburga in Karnataka.

(8) Maharana Pratap fought for the independence of Mewad.

(9) During Krishnadevraya's reign, Vijaynagar kingdom extended from Cuttak in the east to Goa in the west and from the Raichur Doab in the north to the Indian Ocean in the south.

**Q.3. (1)** After the death of Mahmud Gawan factionism increased among the Bahamani Sardars. The provincial governors began to act more independently. Vijaynagar kingdom had an adverse effect on the Bahamani kingdom. This led to the disintegration of the Bahamani kingdom into five fragments (small powers).

(2) After the battle of Panipat, there was a battle between Babur and Rana Sanga of Mewad at Khanua. Rana Sanga and his army did their best in the battle, but Babur's artillery and reserved force played a key role in the defeat of Rana Sanga's army in the battle.

(3) Guru Tegh Bahadur protested against Aurangzeb's policy of religious intolerance, hence he was imprisoned by Aurangzeb.

(4) Maharana Pratap ascended the throne after the death of king Uday Singh. He continued the struggle for Mewad's existence. He struggled with Akbar till the end to maintain his independence. Due to his qualities of valour, courage, self-respect, sacrifice, etc. Maharana Pratap became immortal in history.

(5) Akbar was the most powerful king of the Mughal dynasty. When he tried to bring India under his central authority, he had to face opposition from the Rajputs.

For example: Maharana Pratap and Rani Durgavati showed their courage till the end of their lives. They did not surrender. Even while fighting with Babur, Rana Sanga of Mewad brought all the Rajputs together. But he was defeated in the battle of Khanua.

(6) Guru Gobind Singh was the next Guru after Guru Tegh Bahadur. He wanted to protect the Sikhs and give a stiff resistance to Aurangzeb's attacks. Therefore he organised the Khalsa Dal.

**Q.4. (1)** The Ahoms in Assam fought against the imperialist policy of Aurangzeb. United under the leadership of Gadadhar Singh and with Lachit Borphukan as their commander, the Ahoms by using the guerilla tactics fought an intense battle against the Mughals. This made it impossible for the Mughals to strengthen their power in Assam.

(2) Revolts arose among the formidable Vijaynagar and Bahamani kingdoms. The brothers Harihar and Bukha, from South India were Sardars in the service of the Delhi Sultanate. Taking advantage of the instability in the South during the reign of Muhammad bin Tughluq, they founded the kingdom of Vijaynagar in the South. Harihar was the first king of Vijaynagar.

(3) Mahmud Gawan was a good administrator. He strengthened the Bahamani Kingdom. He started paying soldiers their salaries in cash instead of through land grants. He brought discipline in the army. He also introduced reforms in the land revenue system. He opened a madarasa at Bidar for Arabic and Persian studies.

(4) During the reign of Aurangzeb, the Mughal empire extended from Kashmir in the North to Ahmadnagar in the South and from Kabul in the West to Bengal in the East. To this Aurangzeb added Assam in the east, the kingdoms of Bijapur and Golconda. Thus, the Mughal empire almost covered the whole of India.

(5) During the reign of Sultan Muhammadbin-Tughluque of Delhi, there were many revolts in the South against the central power of Delhi. From these revolts arose the formidable Vijaynagar and Bahamani kingdoms.

**Q.5. (1) Krishnadevraya :** In 1509 C.E. Krishnadevraya became the ruler of Vijaynagar. He was a scholar and a good administrator. He wrote 'Amuktamalyada', a Telugu compendium on polity. He built the Hazar Ram and Vitthal temples.

He was a brave and valorous king. He conquered Vijaywada and Rajmahendri and annexed the regions to his kingdom. He defeated the combined forces of the Sultans, under the leadership of the Bahamani Sultan, Mahmud Shah. During his reign, the kingdom was at its zenith. He died in 1530 C.E.

**(2) Chandbibi :** Chandbibi was the daughter of Husain Nizamshah of Ahmadnagar. She acted as the regent of Ahmadnagar. She bravely defended the Ahmadnagar fort from Mughal army. She was murdered due to the internal strife amongst the factions of the Sardars in the Nizamshahi's kingdom.

**(3) Rani Durgavati :** Rani Durgavati was born in the Rajput Chandel dynasty. She became the queen of Gondvana after her marriage. She was an excellent

administrator. Her struggle against the Mughals is important in medieval history. After the death of her husband, she laid down her life while fighting against Akbar. But till the very end of her life she did not surrender.

### Topic 3 : Religious Synthesis

**Q.1. (A)** (1) Sanskrit (2) Secularism (3) Ras Khan  
(4) Ramanuja (5) equally  
(6) Basaveshwar

**(B)** (1) Sikhs  
(2) (i) Khwaja Moinuddin Chisti  
(ii) Shaikh Nijamuddin Aivaliya  
(3) Sant Namdeo and Sant Kabir  
(4) Narsi Mehta  
(5) Sant Kabir, Guru Nanak

**(C)** (1) - (c), (2) - (d), (3) - (a), (4) - (b)

**(D)** (1) Rajasthan (2) Bengal  
(3) Maharashtra, Assam (4) Karnataka, Gujarat

**(E)** (1) True (2) True (3) False (4) True (5) False

**(F)** (1) Guru Granth Sahib (2) Surdas  
(3) Guru Nanak (4) Manmathswami  
(5) Meerabai (6) Ramanand  
(7) Kabir (8) Pamp

**Q.2. (1)** Naynars and Alawars were the two Bhakti Movements that emerged in South India.

**(2)** Sant Meerabai's verses give the message of devotion, tolerance and humanity.

**(3)** Bhakti Movement preached the values like love of God, humanity, compassion and mercy.

**(4)** Shankaradeva spread Bhakti Movement in Assam under the influence of Chaitanya Mahaprabhu.

**(5)** According to Sant Kabir, God is the 'Truth'.

**Q.3. (1)** God was the 'truth' according to Sant Kabir. He opposed the differences based on caste, creed, sect and religion. He did not believe in the places of pilgrimage, vratas or idol worship. He criticized the orthodox Hindus and Muslims. He wanted to bring about Hindu Muslim unity. Hence, Sant Kabir became a renowned sant in the Bhakti movement.

**(2)** Sant Basaveshwar spread the Lingayat stream in Karnataka. He opposed the caste system. He stressed on the dignity of labour. 'Kayakave Kailas' is his well-known saying which means 'Work is worship'. He encouraged women to participate in religious discussions. He did not make the difference among the people on the basis of caste, class, creed, men or women. Because of this equality the people participated in religious discussions. This was the impact of Basaveshwar's work on society.

**Q.4.**

	<b>Movement</b>	<b>Names of the Sants</b>	<b>Work</b>
<b>(1)</b>	<b>Bhakti Movement</b>	Sant Meerabai Sant Narsi Mehta (1st poet in Gujarati) Surdas Ras Khan Sant Tulshidas	Composed verses on Krishnabhakti in Gujarati language. Poetical work -Sursagar. Composed verses on Krishnabhakti Ramcharita Manas Devotion to Rama.
<b>(2)</b>	<b>Mahanubhav Panth</b>	Chakradhar Swami Founder of this sect.	Development of the Marathi language. Many works were composed in Marathi.
<b>(3)</b>	<b>Sikhism</b>	Guru Nanak founder of Sikhism	Adigranth, known as Granth Sahib is a holy book of the Sikhs. Compositions by Sant Namdeo and Kabir are included in Aadigranth.

**Q.5. (1)** Sant Meerabai stressed the importance of devotion to Krishna. She belonged to the royal family of Mewad. She immersed herself in devotion of Krishna. She composed devotional verses in Rajasthani and Gujarati. Her devotional verses gave the message of devotion, tolerance and humanity. Her compositions are popular even today.

**Q.6. (1)** The path of Bhakti movement was easy to follow for the common people. It was open to all men and women. Sants expressed their thoughts in the language of the people. The common people found them close to their heart. Thus, the Bhakti movement has contributed greatly to the Indian culture.

## Civics

### Topic 1: Introduction to Our Constitution

**Q.1. (A)** (1) written (2) Government (3) Family-norms (4) Constitution (5) Democracy (6) Princes (7) 299

**(B)** (1) - (d), (2) - (e), (3) - (c), (4) - (b)

**(C)** (1) Kolkata

**(D)** (1) Dr. Babasaheb Ambedkar (2) 26<sup>th</sup> January 1950 (3) The Government (4) Dr. Babasaheb Ambedkar

**(E)** (1) False (2) True (3) False (4) True (5) True

**(F)** (1) Mahatma Gandhi (2) Dr. Babasaheb Ambedkar (3) England (4) Dr. Rajendra Prasad

**Q.2. (1)** The rules to be followed in a school are regarding the admission procedure, the school uniform and the curriculum followed.

**(2)** The book in which all the provisions regarding the administration of a country are mentioned together in a systematic way is called a Constitution.

**(3)** The rules and provisions in the Constitution are the basic or fundamental laws of the land.

**(4)** Indian Government is established by the representatives elected by the people.

**(5)** The Constitution includes a list of duties for the citizens and fixes the responsibility of the citizens along with the rights.

**(6)** The British divided India into provinces for the convenience of administration.

**(7)** The Constitution includes and safeguards the rights and freedoms of the citizens.

**(8)** The representatives of the provinces and the Princely States were included in the Constituent Assembly.

**Q.3. (1)** The provisions in the Constitution are about different things. E.g. citizenship, the rights of the citizens, the relationship between citizens and the State, subjects of the laws to be made by the Governments, restrictions on Government, jurisdiction of the State, etc.

**(2)** The Constituent Assembly enacted the Constitution and adopted it on 26<sup>th</sup> November 1949. Therefore, 26<sup>th</sup> November is observed as Constitution Day.

**Q.4. (1)** The country began to be governed according to the provisions of the Constitution from 26<sup>th</sup> January 1950. The Indian Republic came into existence from this day. Therefore, 26<sup>th</sup> January is celebrated as Republic Day.

**(2)** The advantages of running a country as per the provisions of the Constitution are as follows :

- (i) The Government has to function within a set of rules, and as per the provisions of the Constitution so that no one can misuse the power and authority given to them.
- (ii) The Constitution states rights and freedoms of the citizens and safeguards them. The Government cannot take away these rights and freedoms from the citizens. Hence, citizens can participate in the activities of the Government and the democracy becomes strong.
- (iii) The Constitution has given the duties along with the rights to the citizens. This makes the citizens aware of their responsibilities.
- (iv) The Constitution presents some political ideals before the country. These political ideals create an

atmosphere conducive to attain world peace and security and preservation of human rights.

**(3)** The Government has to make laws relating to several subjects, such as defending the boundaries, protecting the people from external aggression, eradication of poverty, creating employment, education and health services, encouragement to commerce and industries, protection of the weaker sections, making policies for the progress of women, children and the tribal people, etc. The Government has to bring about desirable changes in the society by implementing laws. In short, the Government in the modern times has to take decisions related to different issues right from space research to public cleanliness.

**Q.5. (1)** The process of making of the Indian Constitution started in 1946. The leaders of the freedom movement insisted that Independent India will be governed not by the laws made by the British, but by laws made by Indians themselves. So, a committee was established to prepare the Constitution of Independent India. It came to be known as the Constituent Assembly.

**\*(2)** Dr. Babasaheb Ambedkar was the Chairman of the Drafting Committee. He studied the Constitutions of different countries of the world in depth. He worked day and night to draft our Constitution. The draft presented by him was discussed Article by Article in the Constituent Assembly. He answered the questions raised on it and made changes in it after taking the suggestions given to him by the Constituent Assembly, hence making every provision of the Constitution flawless. Due to his contribution towards the making of the Constitution, Dr. Babasaheb Ambedkar is called the 'Architect of the Indian Constitution.'

## Geography

### Topic 1 : How Seasons Occur – Part 1

**Q.1. (A)** (1) 24 (2) day (3) west, east (4) time, days  
(B) (1) – (c), (2) – (a), (3) – (b), (4) – (e), (5) – (d)  
(C) (1) Rotation is the movement of the earth around itself.  
(2) The earth's rotation enables us to measure time in terms of days.  
(3) It takes 24 hours for the earth to rotate around itself.  
(4) The earth rotates from west to east.  
(5) During a single day, we experience the different stages such as sunrise, midday, sunset, daytime and nighttime.  
(6) Revolution is the movement of the earth around the sun.  
(7) Seasons are caused due to revolution of the earth.  
(8) The earth takes one year to complete one revolution around the sun.

### Intext Question

**Activity :** (1) (To be done by students.)

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### Topic 2 : The Sun, the Moon and the Earth

**Q.1. (A)** (1) Perigee (2) annular (3) axial, orbital  
(4) lunar (5) apogee  
(B) (1) - c, (2) - e, (3) - d, (4) - a, (5) - b  
(C) (1)  $90^\circ$  (2) Apogee (3) Solar eclipse  
(4) Earth, moon (5) Annular solar eclipse  
(D) (1) This is because the moon's orbit of revolution is as elliptical as that of the earth.

(2) The reason is that the time the moon takes to make one revolution around the earth and one rotation around itself is the same.

(3) The moon intersecting the plane of the earth's orbit twice during one revolution is annular solar eclipse.

(4) From a very small region of the earth only an illuminated part of the sun disc is seen in the form of a ring. This is called annular solar eclipse.

(5) A lunar eclipse occurs when the moon enters the shadow of the earth, while revolving around it and when the earth is in between the sun and the moon and all three of them are in the same plane at the same time.

(E) (1) False (2) True (3) False (4) False (5) True

(F) (1) Perigee (2) Semicircular (3)  $0^\circ$   
(4) Solar (5) Solar

(G) (1) astronomical (2) lunar (3) 107  
(4)  $180^\circ$  (5) annular solar

**Q.2.** (1) The moon revolves around the earth.

(2) On a full moon day, while revolving around the earth, the moon is on the opposite side of the sun.

(3) The moon's revolutionary orbit makes an angle of  $5^\circ$  with that of the earth.

(4) In one revolution of the moon, its orbit intersects the earth's orbit twice.

(5) The intense light of the sun can be harmful to the naked eye. One must wear special goggles made for this purpose.

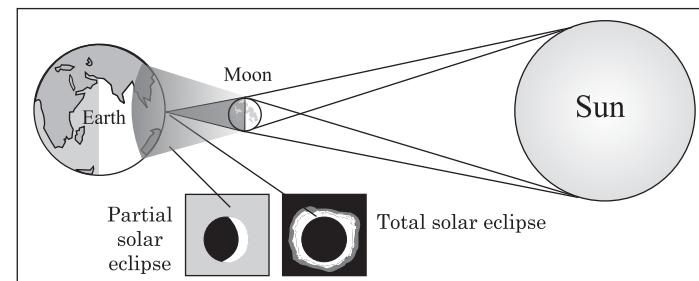
(6) An annular solar eclipse occurs when the moon is in the apogee position.

**Q.3. (1) - (b), (2) - (b), (3) - (a), (4) - (c)**

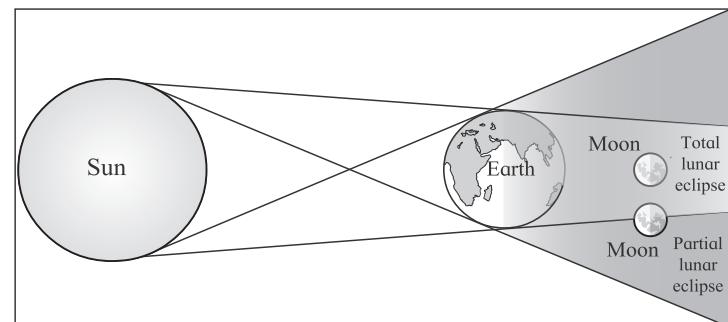
**Q.4.**

	Details	Lunar Eclipse	Solar Eclipse
(1)	Phase of the moon	<b>Full moon day</b>	New moon day
(2)	Sequence	Moon-Earth-Sun	<b>Sun - Moon - Earth</b>
(3)	Type of eclipse	<b>Partial Lunar Eclipse</b> <b>Total Lunar Eclipse</b>	<b>Partial Solar Eclipse</b> <b>Total Solar Eclipse</b> <b>Annular Solar Eclipse</b>
(4)	Maximum duration of Total Eclipse	107 minutes	<b>7 minutes 20 secs.</b> <b>440 seconds.</b>

**Q.5.(1)**



**(2)**



**Q.6. (1)** The moon's orbit of revolution is also elliptical as that of the earth. Hence the distance of the moon from the earth is not the same everywhere along its orbit while revolving. The orbital paths of the earth and the moon are not in the same plane. On each new moon day, the lines joining the earth, the sun and the moon make an angle of  $0^\circ$  whereas on each full moon day, this angle is of  $180^\circ$ . Even so, the sun, the earth and the moon may not be in one straight line in the same plane on every new moon and full moon day.

**(2)** When the moon is between the sun and the earth the place on the earth where the moon's shadow falls on earth experiences solar eclipse. The central portion of the shadow is darker and the periphery is lighter. In the area where the shadow is darker on the earth, the sun becomes completely invisible. This is total solar eclipse. However, during the same period, at the places where the shadow is lighter, the sun's disc appears partially covered. This condition is partial solar eclipse.

**(3)** People who believe in these superstitions must be informed that they are wrong. They should be explained that eclipses are astronomical events. They should be told that eclipses are the result of the earth and the moon being in specific positions and it is natural. There is nothing auspicious or inauspicious about these events.

**(4)** While observing a solar eclipse, it is necessary to view the sun disc through dark glasses or special goggles made for that purpose, otherwise the intense light of sun can be harmful to the naked eye.

**(5)** Total and partial solar eclipses will be seen in the perigee condition.

**Q.7.**

	<b>Solar Eclipse</b>	<b>Lunar Eclipse</b>
(1)	Occurs on a new moon day but not on every new moon day.	(1) Occurs on a full moon day but not on every full moon day.
(2)	If and only if the sun, the moon and the earth are in the same plane, and fall in one line, the solar eclipse occurs.	(2) The lunar eclipse occurs if and only if the sun, the moon and the earth are in the same plane and fall in one line.
(3)	The maximum duration of a total solar eclipse is 7 minutes and 20 seconds. (440 seconds).	(3) The maximum duration of a total lunar eclipse is 107 minutes.

**Q.8. (1)** The time it takes for the moon to make one revolution around the earth and one rotation around itself is the same, that is why we constantly see one and the same side of the moon.

**(2)** On the first and third quarter days, the moon, the earth and the sun make an angle of  $90^\circ$ . At these positions, we see half the portion of the illuminated moon. Hence in the sky it appears semicircular in shape.

**(3)** Sometimes the moon is in apogee position. This means it is at its farthest from the earth. As a result the deep shadow of the moon is cast in space and does not reach the earth. From a very small region of the earth,

only an illuminated edge of the sun disc is seen in form of a ring. This is very rarely seen. Hence, the annular solar eclipse is a rare phenomenon.

### Intext Questions

#### \* Think about it!

(1) Yes, there must be something called earthlight. We will surely find it on the moon.

(2) The outer ring is seen from space since the moon is shown as half in light and half in shadow through out the entire circle. The inner circle are the phases of the moon as we see them from the earth as new moon, crescent moon, half moon and full moon.

(3) On new moon day, the sun, the moon and the earth are in a straight line. The sun and the moon form an angle of  $0^\circ$  with the earth. In the first quarter the three bodies form an angle of  $90^\circ$ . (This is the waxing moon). In the third quarter, the sun, earth and the moon form an angle of  $270^\circ$  (waning moon). On each full moon day, they will form an angle of  $180^\circ$ .  
The moon intersects the plane of the earth's orbit twice during one revolution. This angle will be formed twice in a month.

(4) The moon has a shadow, but the shadow cannot be seen since the side that faces us is dark.

#### \* Use your brain power!

(1) It will not be seen in the places that are on the opposite side of the places where we can visualise the solar eclipse.

(2) No, total and annular solar eclipses do not occur on the same occasion.

(3) This is because the earth is a bigger body than the moon, hence the earth's shadow too will be bigger than the moon.

(4) The solar eclipse.

(5) This is because other planets, when they come in between the line of the earth and the sun, a transit occurs. A small dot appears to move across the sun's disc. This is a type of solar eclipse.

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### Topic 3 : Tides

**Q.1.** (1) tides (2) gravitational, centrifugal (3) centre (4) rotation (5) tides (6) new moon, full moon (7) tidal range (8) mangroves (9) 12 hours and 25 minutes (10) wind

**Q.2.** (1) Tides are movements of sea water occurring daily and regularly.  
(2) The sun, the moon, the earth and the gravitational and centrifugal forces are the factors responsible for the occurrence of tides.  
(3) During rotation, the force that works away from the centre of the earth is called centrifugal force.  
(4) The force that works towards the centre of the earth is called gravitational force.  
(5) The highest tidal range in the world is observed at Bay of Fundy along the Atlantic coast of North America.  
(6) The sea water moves up and down or slightly forward and backward due to the waves.

**(7)** The vertical distance between a crest and the following trough is called the amplitude of the wave.

**Q.3.**

Group 'A'	Group 'B'	Group 'C'
Waves	Wind	These are also generated due to earthquakes and volcanoes.
Centrifugal force	Rotation of the earth	Objects get thrown towards the outer side.
Gravitational force	The moon, the sun and the earth	Operates in the direction towards the centre of the earth.
Spring Tide	New moon day	Highest high tide occurs on this day.
Neap Tide	8th phase of the moon (Quarter)	The forces of the sun and the moon operate in different directions.

**Q.4.** (1) - (b), (2) - (c), (3) - (d), (4) - (a), (5) - (f), (6) - (e)

**Q.5. (1)** The moon is closer to the earth than the sun, hence its gravitational force becomes more effective than that of the sun. This is why the moon's influence on tides is more than that of the sun.

**(2)** Soil erosion is always occurring. In many places the rocks are weak and break up easily. This erosion leads to formation of hollows in the open sea. When the tide is high, the water collects in these big hollows and remains there forming lakes and lagoons. These water bodies remain filled because of high tides.

**(3)** Tides occur due to the relative positions of the moon, the sun and the earth. A place on the earth located at the opposite point of the place experiencing high or low tide also experiences high, or low tide respectively at the same time due to the result of the centrifugal force. When there is high tide at  $0^\circ$  meridian, the  $180^\circ$  meridian also experiences high tide.

**(4)** The gravitational force is working towards the centre of the earth at the same time as the centrifugal force. The gravitational force is many times greater than the centrifugal force, hence any object on the earth stays where it is and does not get thrown away.

**(5)** On new moon and full moon days, the gravitational pull of the sun and the moon act in the same direction. Due to this, the total pull increases, hence the tide is much higher than the average high tide on these days.

**(6)** This is because the attraction of the sun and the moon are not complementary, but at right angles to each other. At such times, neap tides are caused.

**Q.6. (1)** Generally high tides and low tides occur twice a day (24 hours). The time difference between two high tides is 12 hours 25 minutes.

If the high tide is at 7 a.m., the next high tide will occur at 7.25 pm. Low tide will occur at 1 p.m. approximately and the next low tide will be at 1.25 a.m.

**(2)** Exactly on the opposite side of  $73^\circ$  E meridian, on  $107^\circ$  W meridian there will be high tide. This place will be at an antipodal position to  $73^\circ$  meridian since it is exactly opposite to  $73^\circ$  E meridian.

(3) Due to the force of the wind, water appears to be moving. The sea water gets pushed by the wind and ripples are generated on the water surface. These are called waves.

If a strong wind is blowing in one direction, large waves are generated. Sometimes due to earthquakes or volcanic eruptions below the floor of the sea, waves get generated, such waves assume a great height in the shallow waters near the coast. These waves are called Tsunamis. They are very destructive. They cause huge loss of life and property.

**Q.7. (1) Swimming :** Lack of understanding of the timings of high and low tides can cause accidents to swimmers entering the sea.

**(2) Steering a ship :** Ships can move up to the port during high tide. Low tide can get the hull of the ship stuck in the wet sand.

**(3) Fishing :** With the high tide, fish move into the creeks and this helps in fishing activity.

**(4) Salt pans :** During the high tide, sea water can be stored in salt pans from which salt is obtained.

**(5) Going to coastal areas for trips :** Ports do not get filled with sediments, hence ships carrying tourists can dock easily and tourists can leave the ship without any problem.

**Q.8. (1)** It shows the first quarter of the month.

**(2)** The earth is at the centre. The moon and the sun are at right angles to each other with the earth at the vertex.

## English Balbharati

### Unit - II

#### Topic 2.1 : From a Railway Carriage

##### Answer the following

**Q.1. (1)** Bridges and houses, hedges and ditches, horses, cattle and meadows are the sights seen through a railway carriage which are mentioned in the first stanza.

**(2)** Hills and plains, painted stations are the sights mentioned in the second stanza.

**(3)** A child clambering and scrambling, gathering brambles all by himself, a tramp standing and gazing and daisies in the green are sights mentioned in the third stanza.

**Q.2. (1)** The train is moving at great speed. Those inside the train feel that the sights are flying. Actually the sights are stationary, the train is moving very fast.

**(2)** The last line makes me sad because these sights of nature are really beautiful and people in the train cannot see the beauty because the train is moving very fast.

**Q.3. (a)** Here is a child. **(b)** Here is a tramp.  
**(c)** And there is the green. **(d)** Here is a cart.  
**(e)** And here is a mill. **(f)** And there is a river.

Yes, we can tell which ones are closer and which are at a distance from the train.

The word 'here' shows something which is nearby or closer.

The word 'there' shows something which is faraway or at a distance.

##### Q.4. BUS.

As my bus passes by streets.

I see boys playing and beggars begging.

The dogs fighting for some food.

lots of papers scattered on the road.  
And so much of pollution in the air.

### **Aeroplane.**

High up in the sky we fly,  
And some clouds in the sky.  
There we see some mountains.  
And water flowing down like a fountain.  
What a beautiful sight for one's eyes.  
A sight we cannot forget even if one tries.

### **Comprehension**

**Q.1.** (1) They move as thick as driving rain.  
(2) Stations whistle by the poet.  
(3) The poet sees the child clambering and scrambling and gathering brambles all by himself.  
(4) He is standing and gazing.  
(5) The charging train is compared to troops in a battle.

**Q.2.** The poet is in a train that is rushing past at a very high speed. It passes meadows and horses and cattle. It passes painted stations and flower bushes. There is a child clambering and scrambling to gather brambles. He sees a tramp standing and gazing at the passing train. The poet also sees a cart loaded with goods lumping along. There is a river that soon disappears. All these sights are seen just for a moment.

**Q.3.** (1) (a) Alliteration - sound of letter 'f' is repeated.  
(b) Simile - The fast moving train is compared to troops.  
(c) Simile - all the sights are compared to the driving rain.  
(2) Witches - ditches; battle - cattle.

### **Grammar / Language study**

**Q.1.** witches - ditches; battle - cattle; plain - rain - again; eye - by; scrambles - brambles; gazes - daisies; road - load; river - ever.

**Q.2.** Her dress is shining like the sun.  
He keeps his mind like an open book.  
T.V. makes the brain as soft as cheese.  
The sun is as hot as fire.

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### **Topic 2.2 : The Souvenir**

#### **Answer the following**

**Q.1.** (1) (a) grossly excessive (b) actions taken early to avoid risk  
(c) without official permission  
(d) again and again  
(2) (a) orbit, bit (b) caution  
(c) author (d) repeat

**Q.2.** Boarding the space shuttle to reach the moon.  
Dome shaped settlements on the moon visible.  
Space shuttle lands.  
First day on the moon - Sky watch.  
Second day- Circus watching.  
Third day - Visiting the Neil Armstrong historical monument and wearing space suits to go shopping.  
Return to the Earth.

**Q.3.** (1) Right (2) Right (3) Wrong (4) Wrong  
(5) Wrong (6) Right (7) Wrong

**Q.4.** **First Day :** We were taken for a 'Sky Watch'. There is no atmosphere on the moon. We could see the stars shining or

rather I should say dazzling brightly on the dark background of the moon sky. We saw the disc of the earth. The earth looked thirteen times bigger. We could not believe what we were observing. It was also seventy times brighter. We were all ecstatic. It was like 'WOW'.

**Second Day :** The main attraction was the circus on the moon. We were made to sit in the tent and the circus was going on outside. We were surprised at this seating arrangement, but again it was wonderful to see the gymnast jumping twenty-seven metres high. After the circus we visited some settlements and spoke to the people staying there.

**Third Day :** We went to a place of historical importance. This was the place where Neil Armstrong had landed a hundred years earlier. It is the oldest place in the history of man on the moon. Neil Armstrong's first footprint is preserved. On the base, it is carved 'One small step for a man, one giant leap of mankind.' We all were simply amazed.

This was followed by us wearing space suits and roaming outside and experiencing the gravitational force of the moon.

Then we bought ornaments for our parents and friends.

#### **The day I gave the earrings to mom.**

I was waiting to present the earrings to mom. I had bought them to show mother how grateful I was for this amazing trip. I was sad when mummy looked at the earrings and asked me how I expected her to wear such heavy earrings.

I was disappointed, but I suddenly realised that the earrings were heavy on earth, because I had purchased them in the field of the moon's gravity.

**Q.5.** The field of gravity on the moon will not allow big, huge buildings. Secondly, there are not many who have settled on the moon, hence only settlements are mentioned.

**Q.6.** On the third day, the children saw the oldest place in the history of man on the moon. This place was known as the place of historical importance as it preserved the first footprint of Neil Armstrong. Beside the footprint was a grand statue of Armstrong and at the base, first words uttered by a human on moon were carved – 'One small step for a man, one giant leap of mankind'.

**Q.7.**

- (1) In the 21<sup>st</sup> century more or less.
- (2) Sayali lives in India.
- (3) The feeling would be one of surprise, one of awe, something unbelievable. I would not know what would happen next. The feeling would be something, I would find very difficult to define or describe.
- (4) Since the gravitational force of the moon is 1/6 that of the earth, in settlements, this force is made equivalent to that of the earth and artificially maintained, but outside the settlements the gravitational force of the moon is at work, hence the children were told to be very careful when they roamed around.
- (5) The second point was related to shopping on the moon. All were told to buy articles only from the shops inside the dome shaped settlements, and not from unauthorised shops outside.
- (5) There is no atmosphere on the moon, hence on the dark background of the moon sky, the stars shone dazzling bright. This was unlike the foggy atmosphere of the earth.

The most attractive view was the disc of the earth. The earth looked thirteen times bigger than the moon in the moon's sky. It was also seventy times brighter.

(6) It tells us that the earth looked as if it had its own light and it must have been day time on earth, for its light to shine so brightly.

(7) Without atmosphere we will not get gases needed for living, breathing and growing trees and plants. People will have to wear oxygen masks. There will not be any vegetation and trees in such places. Everything around will be clear and bright, not foggy.

(8) If the circus was held in a closed hall, the gymnast would not be able to jump twenty seven metres high. Jumping would be impossible in a tent. Hence, the spectators had to be seated in the tent while the jumping took place outside the tent.

(9) She bought the earrings in the open market. Here, the gravitational pull of the moon was  $1/6$  that of the earth, hence the earrings did not appear heavy. Sayali did not realise this at that time, since she was wearing her space suit. To her, the earrings did not feel heavy.

(10) Sayali had ignored the instructions, which mentioned not to buy anything from the outside shops, but to do shopping only from the shops inside the dome shaped settlements.

(11) Sayali had purchased the earrings in the field of the moon's gravity which is  $1/6$  that of the earth's gravity. When she was purchasing the earrings, she felt the weight was fine but on the earth, the gravity is six times that on the moon. Hence, on the earth the earrings became heavy.

### Comprehension

**Q.1.** (1) You all must be interested in carrying souvenirs back home from the moon.

(2) The gravitational force of the moon is  $1/6$  that of the earth.

(3) The children were escorted through an airtight tunnel to the settlement at the Neil Armstrong base.

(4) You will have to be extremely careful when you roam around here.

**Q.2.** (1) - (c), (2) - (a), (3) - (d), (4) - (b).

**Q.3.** (1) (a) The children would be interested in carrying home souvenirs.  
 (b) The shuttle made a slow, measured and safe landing on the moon.  
 (c) The children were escorted to the settlement at the Neil Armstrong base.  
 (d) A gravitational force equivalent to that of the earth was being artificially maintained at the settlements.

(2) (a) doubtful (b) genuine  
 (c) exit (d) animal

**Q.4.** (1) (a) Souvenirs - common noun  
 (b) force - abstract noun  
 Moon, Earth - proper nouns.

(2) (a) happy, pleasant (b) slow, measured, safe.

**Q.5.** After welcoming the children, the receptionist gave them some instructions. She explained that the gravitational force of the moon is  $1/6$  that of the earth. In the human

settlements the gravitational force was artificially maintained, but outside, the gravitational force of the moon was at work, hence the children had to be very careful while roaming around. The receptionist then told the children to do their shopping only from the shops inside the dome shaped settlements and not to buy anything from outside.

## Grammar / Language study

**Q.1.** (i) an army of arms (ii) a flight of birds  
(iii) a haul of fish (iv) a shoal of fish  
(v) a choir of singers (vi) a band of musicians  
(vii) a crew of sailors

**Q.2.**

	<b>Noun</b>	<b>Verb</b>	<b>Adjective</b>
<b>(1)</b>	attraction	<b>attract</b>	<b>attractive</b>
<b>(2)</b>	<b>brightness</b>	<b>brighten</b>	bright
<b>(3)</b>	<b>beauty</b>	<b>beautify</b>	beautiful
<b>(4)</b>	<b>excitement</b>	excite	<b>excited, exciting</b>

**Q.3.** (1) In every 32 minutes, the shuttle completed one revolution round the moon.

(2) 'It seems so funny, isn't it?' said Sayali laughing.

(3) Don't run, or sprint, you will fall !

## Topic 2.3 : Abdul Becomes a Courtier

### **Answer the following**

**Q.1. (1)** His learning of books, his intelligence, his relations with other people.

**(2)** The Emperor was right in saying that Abdul has great talent. Yes, it tallies with his actions. Abdul used his talent to help others. He used his brain power and fed

the hens and chickens without any expense. Abdul covered the book with fabrics obtained from bags that were sent to the king with formal requests. Abdul used his brain power and his talent along with his intelligence to rise high in the world.

**Q.2.**

Abdul

Agra, India.

To,

## The Emperor,

Agra.

**Sub:** Application for job.

Respected Sir,

I, Abdul, have heard so much of your kindness and generosity to everyone around you. I am in need of a job since I require money to buy books in which I am very interested.

You may give me whatever job you wish to, I will do my best and do the job to the best of my ability. I assure you, sir, that you will find no cause to be dissatisfied with me and my work.

Awaiting to hearing from you soon.

Your obedient and loyal,

Abdul

**Q.3.** Here is a short story about Abdul, who won great name and fame because he used his wits, brain power and perseverance to help others and himself. Abdul wished to read books. He asked his father to get him books, which his father could not do. He went to a merchant and asked him to give him a job and in return as a pay he asked if he could read the books in his

store. He was then employed at the 'Murgikhana' and became a poultry keeper. He used his brain and gave the hens food and leftovers from the kitchen. The Emperor was very pleased with him and put Abdul in charge of the library. One year later when the Emperor visited the library, he saw that the books had beautiful covers made of discarded silk, velvet and brocade bags. This proved to all that Abdul had wits, brains, perseverance, patience and determination.

**Q.4.** Tins can be decorated with pencil shavings and coloured paper, to be used as pencil and pen holders.

[Students can write about any wealth from waste products.]

**Q.5.** (1) I am very particular about my books. I see to it that they are always covered. I never fold the pages, instead I use a book mark. I pile up my books on the book-shelf and do not let them scattered everywhere. I do not write on my books with either pen or pencil.

(2) 'A brighter tomorrow' means that in the future, things will change for the better and our lives will become more productive.

(3) Abdul aspires to get more knowledge and learn from books. He plans to do it by buying books and studying them to attain success in the world.

(4) In the context of the play 'a gem' means someone very precious.

(5) Abdul must have asked the Emperor for a job in his library since he had learnt philosophy, astronomy, Arabic and Persian.

(6) Abdul took scraps and shells and kitchen waste from the Royal kitchen to feed the hens.

(7) The Emperor rewarded Abdul by making him in charge of his library.

Yes, the Emperor was right. He knew that Abdul loved to read.

(8) Abdul collected the discarded bags of silk, velvet, brocade, etc. and told the Royal tailors to make jackets for the books.

(9) This reflects the skill of maintaining good relations with other people.

### Grammar / Language study

**Q.1.** (1) books, manuscripts, erudition, philosophy, astronomy, Arabic, Persian, Scholar.

(2) silk, velvet, brocade, tailor, jacket.

(3) treasures, knowledge, Astronomy, Philosophy, Arabic, Persian.

(4) patience, determination, aim, achieve, perseverance.

**Q.2.** Serve - deserve; clerk - work; care - rare - fair; store - more; learned - yearned; Persian - million; notice - office; prayer - rare; scholar - keeper; refuse - use.

**Q.3.** (a) You are indeed a gem. (b) quite rare  
(c) sagacious (d) astute

**Q.4.** motion, secret, surprise, intelligence, appreciable, change.

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### Topic 2.4 : How Doth the Little Busy Bee

#### Answer the following

**Q.1.** (1) old English for does  
(2) blooming  
(3) small space to store honey

**Q.2.**

<b>How doth the little busy bee (original)</b>	<b>How doth the little crocodile (parody)</b>
Choice of subject (an animal) <b>Bee</b>	<b>Choice of subject (an animal)</b> <b>Crocodile</b>
Number of lines and stanzas <b>8 lines, 2 stanzas</b>	<b>Number of lines and stanzas</b> <b>8 lines, 2 stanzas</b>
Same or similar constructions <b>Different</b>	<b>Same or similar constructions</b> <b>Makes you laugh</b>
Tone of the poem <b>Loving, Goodness of bee is shown</b>	<b>Tone of the poem</b> <b>Mischievous, funny</b>

**Q.3.** (1) It is a hardworking insect that produces honey for man with hardwork and perseverance.

(2) The crocodile is out to get his meal. It stands for cunningness and deceit.

(3) The bee works hour after hour to produce honey and store it. This honey is later used by man.

(4) The crocodile actually does not work. It just lies there pouring water on itself with its mouth open. This is done to attract fishes into its mouth.

(5) Actually both are not gentle - The bee can sting and the crocodile can bite. However the bee is hardworking and useful whereas the crocodile is lazy and dangerous.

(6) The parody sounds funny because, the crocodile is basically a wild and dangerous creature. The poem shows the crocodile in a funny light; even his action of eating fishes is described in a playful manner.

**Q.4.** A crocodile is a large reptile. They are found in different colours which range from brown to grey and greenish-brown in colour. They look frightening because of their long jaws. They appear to be grinning all the time.

- little
- shining tail
- golden scale
- cheerful
- grin
- claws
- gently smiling
- jaws

**Q.5.** I prefer the parody. It is funny and makes you laugh. You want to read further and further in order to find out what joke the poet is going to crack next.

### Comprehension

#### Extract - 1

**Q.1.** (1) shining hour (2) opening flower  
(3) sweet food (4) busy bee

**Q.2.** (1) Honey (2) Skilfully  
(3) Neatly (4) Sweet food

**Q.3.** (1) hour - flower; cell - well. (2) abcb

#### Extract - 2

**Q.1.** (1) little crocodile, little fishes (2) shining tail  
(3) golden scale (4) smiling jaws

**Q.2.** (1) Nile (2) Little fishes  
(3) Gently (4) Neatly

**Q.3.** (1) Crocodile - Nile; tail - scale; grin - in; claws - jaws  
(2) abab

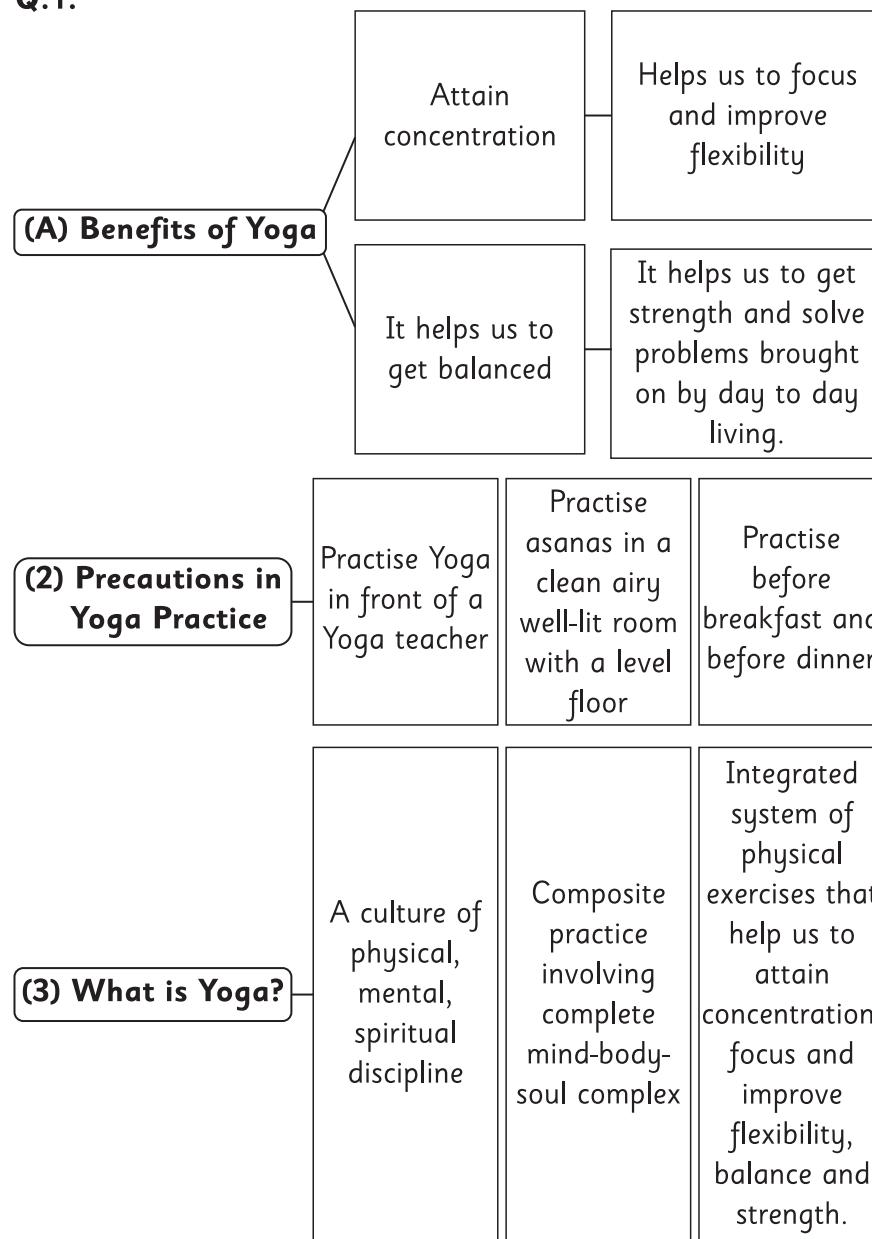
### Grammar / Language study

**Q.1.** (1) busy (2) shining (3) opening  
(4) golden (5) smiling (6) golden

## Topic 2.5 : Learn Yoga from Animals

### Answer the following

Q.1.



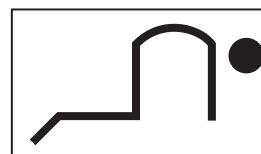
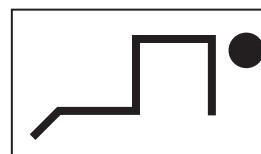
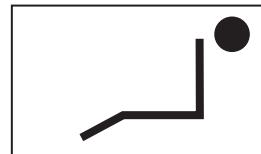
**Q.2.** [Students can write and prepare charts for any one asana of their choice as per the format of the given answer.]

### (1) Marjaryasana or Cat pose

Meaning : Marjar (Sanskrit) : Cat

General Information : The pose resembles a cat stretching. The pose helps stretch the muscles of the abdomen and the back.

Steps and pictures :



(i) Kneel and place your knees slightly apart. Flatten your toes towards the back.

(ii) Place your hands on the ground and move to a table position. Centre your head in a neutral position, with your eyes looking at the floor.

(iii) Exhale smoothly and arch your spine upwards (towards ceiling).

(iv) Inhale and come back to the neutral position on your hands and knees. Repeat this process six times.

**Benefits :** It helps to gently stretch your muscles and get rid of bodyaches.

### (2) Bhujangasana or snake pose

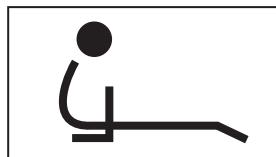
Meaning : Bhujanga (Sanskrit) : Cobra

General Information : The pose resembles a snake stretching with raised head. The pose helps stretch the back chest and shoulder muscles.

Steps and pictures :



(i) Lie face down and relax all your muscles.



- (ii) Place your palms on the sides just below your shoulders. Breather in as you slowly raise your head. Then raise the upper part of your body.
- (iii) Raise your upper part more and come up slowly so that you feel the movement of the spine vertebra by vertebra. Curve the spine well. Hold the breath to a count of twenty.
- (iv) Come down slowly while you breathe out. Repeat the process six times.

**Benefits :** It benefits the chest and shoulder and strengthens the spine.

**Q.3.** Chest, shoulders, palms, head, vertebra, spine, eyes, jaws, tongue, arms, fingers, palette, mouth, muscles, abdomen, back, knees, elbow, hips, joints, calf, toes.

**Q.4.** (1) Yoga was perfected in ancient India.  
 (2) Yoga involves the complete mind-body-soul complex that is a human being.  
 (3) Yoga helps to attain concentration and focus. It also improves our flexibility, balance and strength.  
 (4) Biomimicry is the science of solving human problems with solutions already present in the natural world.  
 (5) Yoga is a form of biomimicry, where in typical asanas or poses, we emulate mountains, trees, fish, cats and so many more animals.

**Q.5.** 'Bhujangasana' is a pose which resembles the posture of a cobra with raised head.

In 'Simhasana' we assume the sitting position and facial expression of a lion.

## Comprehension

### Extract - 1

**Q.1.** (1)-(c), (2)-(b), (3)-(d), (4)-(a)

**Q.2.** (1) (a) Some poses should be learnt from an instructor.  
 (b) Asanas should be practised in clean, airy places.  
 (c) Yoga helps us to feel physically vibrant and mentally sharp.  
 (d) Yoga is a form of biomimicry.

(2) (1) emulate (2) vibrant

**Q.3.** (1) To emulate (2) Yoga classes  
 (3) Biomimicry (4) June 21<sup>st</sup>

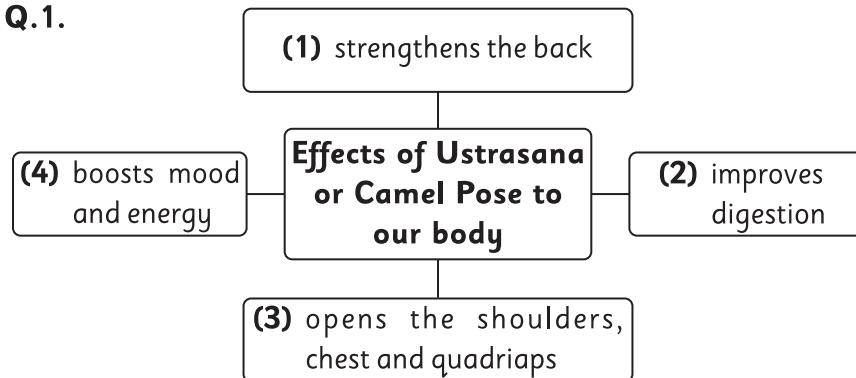
	<b>Noun</b>	<b>Verb</b>	<b>Adjective</b>
(1)	<b>Perfection</b>	Perfected	<b>Perfect</b>
(2)	<b>Simplicity</b>	<b>Simplify</b>	Simple
(3)	<b>Nature</b>	Naturalise	<b>Natural</b>
(4)	<b>Sharpness</b>	Sharpen	<b>Sharp</b>

**Q.5.** If we are beginners, we must begin our practice before a Yoga teacher, or join a Yoga class to understand the dos and don'ts of Yoga. We must take care to see that we are practising the asanas in a clean, airy, well-lit room and we must use a Yoga mat.

The best time to practise Yoga is in the morning before breakfast and in the evening before dinner.

## Extract - 2

Q.1.



Q.2. (1)-(c), (2)-(a), (3)-(d), (4)-(b)

Q.3. (1) (a) balance, eagle, enhances, flexibility

(b) arms, ease, palms, place

(2) (a) arms (b) loosening

Q.4. (1) slowly - adverb, left - adjective

(2) posture - common noun, flexibility - abstract noun

Q.5. (1) Kneel down and place our hands on the hips.

(2) Our knees should be in line with the shoulders and the sole of our feet must be facing the ceiling.

(3) When we inhale, draw the tail bone towards the pubis as if being pulled from the navel.

(4) At the same time, we should arch our back and slide our palms over our feet till the arms are straight.

(5) We should not strain or flex our neck but keep it in a neutral position.

(6) Stay in this posture for a couple of breaths.

(7) Breathe out and slowly come back to the first pose. Bring the hands back to your hips as you straighten up.

## Grammar / Language study

Q.1. Physically, mentally, advisable, before, down, below, completely, smoothly, slowly, behind, immediately, directly, simultaneously, already.

Q.2. (1) (a) navel (b) tone

(2) (a) lowered (b) weaken (c) lightly (d) rough

Q.3. (1) (a) and (b) if (c) but (d) because (e) or

(2) (a) Alas! (b) Ouch! (c) Wow! (d) Oops! (e) Well done!

Q.4. (1) favourite - Demonstrative adjective

(2) lie, relax

(3) (a) breath (b) completion (c) relaxation (d) smooth

## Topic 2.6 : Chasing the Sea Monster

### Answer the following

Q.1. (a) All night long : The crew stayed on their feet.  
(b) Near midnight : The huge animal disappeared.  
(c) At 12.53 : A deafening hiss was heard.  
(d) Near two o'clock : The core of light reappeared five miles away.  
(e) Until daylight : The crew stayed on alert.  
(f) At six o'clock/day break : The animal's electric glow disappeared.  
(g) At seven o'clock : There was a dense mist. Nothing could be seen.  
(h) At eight o'clock : Mist disappeared. They saw the monster astern to port.  
(i) At 10.50 in the evening : The electric light disappeared three miles from the frigate.

**Q.2.** Over twenty four hours.

**Q.3.** (1) e, (2) d, (3) b, (4) a, (5) g, (6) h, (7) f, (8) i, (9) c.

**Q.4. (1)** The narrator's name is Professor Aronnax.

**(2)** 'Abraham Lincoln' is the name of the ship.

**(3)** This event is taking place near midnight.

**(4) (a)** the person who fires the cannon.

**(b)** the person who shoots or lets go of the harpoon.

**(c)** huge

**(d)** terrible

**(5) (a)** a barbed spear - like missile used for catching whales and other sea creatures.

**(b)** weapons.

**(c)** a short large-bored gun firing balls or slugs.

**(d)** towards the rear of a ship

**(6)** The Commander must have told the captain of the frigate to approach without making any sound and let go of the harpoon at a distance of two cable lengths from the monster.

**(7)** The frigate was waiting for the monster to show some signs of weariness, but it did not. The frigate too, along with its crew, went on tirelessly. At 10:50 in the evening the electric light reappeared. The monster did not move, it just rode with the waves. The frigate went towards it very quietly. As they approached, the glow grew stronger. Ned Land was ready with the harpoon and he launched it. It hit a hard surface and all hell broke loose. The lights went out, two enormous water spouts crashed onto the decks, toppling crewmen and breaking masts. There was a collision and the narrator was hurled into the sea.

## Comprehension

### Extract - 1

**Q.1. (1)** Commander Farragut. **(2)** Abraham Lincoln.

**(3)** Whole night.

**(4)** Near midnight.

**Q.2. (2)** We gasped more stunned than afraid.

**(1)** Let's wait for daylight and then we'll play a different role.

**(4)** Near midnight it disappeared.

**(3)** At 12:53, a deafening hiss could be heard.

**Q.3. (1)** (1)-(b), (2)-(d), (3)-(a), (4)-(c).

**(2)** meanwhile, fearsome

**Q.4. (1) (a)** similar **(b)** brightness **(c)** unafraid **(d)** awake

**(2) (a)** The animal mimicked the frigate, didn't it?

**(b)** A full circle was made around the frigate by the monster.

**Q.5.** The crew of the frigate wondered who the unearthly creature was. Its speed was double than that of the frigate. They were all stunned and stood mute and motionless. The monster went round the frigate, which was trying to flee instead of fight. Even the commander, Farragut, was astonished. He decided to wait for daylight before attacking the animal. No one slept, all were on alert. The monster's speed was alarming. Suddenly near mid-night, the monster disappeared.

### Extract - 2

**Q.1. (1)** About three-quarters of an hour.

**(2)** Commander Farragut.

**(3)** Forecastle cannon.

**(4)** \$ 500.00.

**Q.2. (1)** The animal was faster than **the Abraham Lincoln**.

(2) The animal got up a little speed, and kept its distance.

(3) The frigate was speeding so much that its masts trembled down to their blocks.

(4) Ned Land stayed at his post, harpoon in hand.

**Q.3. (1) (a) True.**

**Q.5.** It was an exciting chase no doubt. The author says that the excitement shook his very being. The animal was so smart, it let the frigate get a little closer to it and then picked up speed and kept its distance. It was obvious that the frigate would never catch up with the animal. The animal was playing tricks with the frigate.

The cannoner fired a cannon but it did not even touch the monster. Another man fired another cannon, it hit the target but bounced off its hard shell.

## Grammar / Language study

**Q.1.** Unearthly animal, unknown creature, huge glow worm, cetacean, whale lurking in the waters, blackish body, quivering violently, its tail was creating a considerable current.

**Q.2. (1)** The monster seemed motionless, didn't it?

**(2)** We also struggled on tirelessly.

**Q.3.** (1) had - transitive      (2) hunt - intransitive  
(3) went - intransitive      (4) shot - transitive  
(5) lurking - transitive      (6) waiting - intransitive

## Topic 2.7 : Great Scientists

### **Answer the following**

**Q.1. (1)** People know Faraday as a great scientist, but very few of us are aware of the problems and difficulties Faraday had to face in life. According to those who know nothing about him, life must have been very easy for Faraday, whereas actually Faraday went through many difficulties and problems.

**(2)** Faraday became indispensable to Davy and was promoted to the post of his lab assistant. This was his first step towards a scientific career. Even then (In spite of this), Davy had no hope for Faraday. He still felt that Faraday was not going to do anything in life.

**(3)** Faraday became a celebrity scientist overnight. This man had just created a revolution. Davy was the one who presented him to the world. This was the best discovery that Davy gave the world.

**Q.2. (a)** Michael Faraday is regarded ..... he just kept trying.  
[Textbook Page No.49, 50.]

**Ans.** Faraday's early childhood and life as a young man.

**(b)** Destiny had a strange plan ..... directed at Faraday.  
[Textbook Page No.50, 51.]

**Ans.** Destiny's plan for Faraday.

(c) Faraday became a celebrity.... difficult times. [Textbook Page No. 51-52.]

**Ans.** Faraday: a legend.

(d) He then took the age old experiment ..... discoveries. [Textbook Page No. 53.]

**Ans.** Fortune favours the brave.

\* The passage is about famous, distinguished scientists and the hardwork and perseverance that made them famous.

**Q.3.** There was a chemical explosion that occurred inside Davy's lab and this made Davy temporarily blind. Davy now needed Faraday to become his assistant. Davy made Faraday his secretary. Faraday worked day and night and learnt as much as he could about Davy's experiments. Soon, Faraday became indispensable to Davy and was promoted as his assistant. This was the first step towards his scientific career.

**Q.4. (1)** Faraday was born in a poverty- stricken family in a dirty London suburb. He suffered from a speech defect. Everyone made fun of him. When he was twelve, his mother was forced to take him out of school. This ended his formal education.

At the age of thirteen, he started working with a book-binder. Faraday was still poor at the age of twenty-one.

(2) (a) He could not think of anything else except reading. He tried to give special time for reading.  
(b) He was so much in awe of electricity. His whole life, he thought of electricity and how to improve it.

(3) Faraday's friend knew that Faraday was very much interested in electricity and electrical lighting. The friend knew how poor Faraday was, and that he would not be able to get the money for the ticket, hence he gave Faraday a free ticket for this lecture and demonstration.

(4) The subject was 'the mysterious force of electric fluid.'  
(5) Faraday made comprehensive notes of Davy's lecture on the mysterious force of electric fluid, bound them into a

book, intending to gift it to Davy some day. Now Faraday decided that he wanted to be a great scientist. Davy became his role model. Faraday even thought that it would be wonderful if Davy became his mentor.

(6) mentor - guide.  
(7) A chemical explosion had taken place inside Davy's lab, which temporarily blinded him. Davy now needed an assistant to help him. He was reminded of Faraday and hired him as his secretary.  
(8) Davy was not fair in his treatment of Faraday. Davy never believed that Faraday could do anything in the field of science, going by his social status and education.  
(9) Faraday was relentless. He worked day and night and learnt as much as he could about Davy's experiments. This was the first step towards his scientific career.  
(10) When an electric current is applied to a wire, it causes that wire to behave like a magnet.  
(11) (a) Faraday solved the problem of the forces connected to the wire and went further and the result was the first induction motor which converted electric current into continuous mechanical motion.  
(b) One would think, that as a teacher, Davy would be happy at his pupil's achievement, but in reality, he was jealous. He gave Faraday an impossible task to keep him out of his way.  
(12) Fans, air-conditioning, sewing machines, photographs, power tools, cars and even trains and aeroplane engines.  
(13) If you moved a magnet, it could produce electrical current. Thus, motion could be converted into electricity. This is how the electrical generator was born. It is used today to generate all kinds of power, like dynamos and other device.

**(14)** Faraday did not know much about advanced mathematics, so he just copied the iron filing patterns with his hand. He was unable to explain them in the form of mathematical equations. He made hundreds of such drawings but they were rejected.

### Comprehension

#### Extract - 1

**Q.1.** (1) He suffered from a speech defect as a child.  
(2) Faraday started working with a book-binder.  
(3) His friend gave him a free ticket to a public lecture and demonstration by the famous chemist Humphry Davy.  
(4) Faraday is regarded as one of the most distinguished scientists and inventors of modern times.

**Q.2.** (1) He started reading the book of electricity and was completely hooked.  
(2) Electricity became a lifelong fascination for Faraday.  
(3) Michael Faraday was born into a poverty - stricken family.  
(4) Other children laughed at him.

**Q.3.** (1) (1)-(c), (2)-(a), (3)-(d), (4)-(b).  
(2) (a) Faraday (b) good (c) produced

**Q.4.** (1) (a) speak (b) demonstrate (c) invent  
(2) (a) studious (b) poor (c) fascinating  
(d) productive

**Q.5.** Michael Faraday was born in a poverty-stricken family in a dirty London suburb. He suffered from a speech defect as a child. He could not even pronounce his own name. Other children laughed at him and even his teachers did not help him. When he was twelve, his mother was forced to pull him out

from school. This put an end to his formal education. At the age of thirteen, he started working for a book binder.

### Grammar / Language study

**Q.1.** (1) (a) remember (b) demoted  
(c) dispensable (d) bad

**Q.2.** (1) Destiny had a strange plan in store for him, hadn't it?  
(2) An assistant was now needed by him.  
(3) spellbound, bookbinding

**Q.3.** (1) Subject – Faraday's  
Predicate – started with difficulty  
(2) Subject – Faraday  
Predicate – succeeded Davy as head of the laboratory  
(3) Subject – Destiny  
Predicate – had a strange plan  
(4) Subject – The monster  
Predicate – seemed motionless  
(5) Subject – The electric lights  
Predicate – suddenly went out

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# मराठी सुलभभारती

## ५. दादास पत्र

### स्वाध्याय

प्र.१. (अ) विज्ञान केंद्रातर्फे शाळेत पक्ष्यांसंबंधीची चित्रफीत विद्यार्थ्यांना दाखवली ती पाहून आणि तेव्हा ताई-दादांनी सांगितलेली माहिती ऐकून विद्यार्थ्यांनी अभ्यारण्यात सहलीला जाण्याचा हट्ट धरला.

(आ) अभ्यारण्यातून फिरताना सरांनी विद्यार्थ्यांना सांगितले की माळढोक पक्षी शेतकऱ्याचा मित्र आहे, कारण शेतातील किड्यांवर तो गुजराण करतो. हा पक्षी वर्षातून एकदाच अंडी घालत असल्याने त्यांची संख्या कमी आहे. शिवाय इतर प्राण्यांनी या पक्ष्यांची अंडी तुडवली, तर संख्या आणखीच कमी होते.

### कृतिपत्रिका - १

#### उतारा क्र. १

प्र.१. (अ) (१)(i) माळढोक अभ्यारण्य

(ii) (अ) शेतकऱ्याचा (आ) एकदाच

(२)(i) माळढोक

(ii) शाळेत पक्ष्यांसंबंधीची चित्रफीत कशातर्फे दाखवली?

(३) वाढत चाललेल्या तापमानामुळे, वृक्षतोडीमुळे आणि शहरीकरणामुळे पक्ष्यांची संख्या घटत चालली आहे. ही संख्या वाढावी म्हणून मी गच्चीमध्ये, खिडकीत, बालकनीत पक्ष्यांसाठी खाद्य आणि त्यांना पिण्याच्या पाण्याची सोय करेन. कारण उन्हाळ्यामध्ये पक्ष्यांना पाणी मिळत नाही आणि पाण्यावाचून त्यांना आपले प्राण गमवावे लागतात. फुले व फळे देणारी झाडे लावेन ज्यामुळे पक्ष्यांना अन्न मिळेल. लोकांना सांगेन की प्रत्येकाने किमान एक झाड लावा कारण पक्ष्यांचे आश्रयस्थान असलेली झाडे नष्ट होत आहेत.

### कृतिपत्रिका - २

#### उतारा क्र. २

प्र.१. (अ) (१)(i)

पक्ष्यांची प्रमुख भूमिका

प्रदूषण टाळण्यात

वियांचे वहन करण्यात

(ii) (अ) चंडोल (ब) माळटिटवी (क) माळढोक

(२)(i) असत्य

(ii) पक्ष्यांचे फोटो काढण्यापूर्वी वनखात्याची पूर्वपरवानगी घ्यावी लागते.

(३) पक्षी हा संतुलित पर्यावरणाचा अविभाज्य घटक आहे कारण पर्यावरण संतुलित राखण्यास पक्षी मदत करत असतात. शेतातील पिकांचा नाश करणारे कीटक हे पक्ष्यांचे अन्न आहे. कावळे, निळकंठ यांसारखे पक्षी कीटक व त्यांची अंडी खाऊन कीटकांची संख्या नियंत्रित करण्यास मदत करतात आणि किडींपासून पिकांचे रक्षण होण्यास मदत होते. कोकिळा, मैना, कबुतरे हे पक्षी फळे खातात आणि बिया बच्याच ठिकाणी टाकतात. ज्याठिकाणी या बिया पडतात तेथे नवीन झाडांची निर्मिती होते. तसेच पक्षी परागीभवनाचे काम करतात. शेतीची नासाडी करणारे आणि अनेक आजार पसरवणारे उंदीर-घुशी यांना खाण्याचे काम शिकारी पक्षी करतात. उदा. गरुड, घुबड तसेच मोठ्या मोठ्या मेलेल्या प्राण्यांना खाऊन निसर्ग स्वच्छ ठेवण्याचे काम गरुड, गिधाड हे पक्षी करत असतात. म्हणून पर्यावरणामध्ये पक्ष्यांचे महत्त्व अनन्यसाधारण आहे.

### माहिती मिळवूया

एकतर्फी माहितीची / संवादाची साधने	दुतर्फी माहितीची / संवादाची साधने
फॅक्स, रेडिओ, वर्तमानपत्र, भाषण, ई-मेल, जाहिरात, मोबाईल संदेश, पत्र	आंतरजाल चर्चा, मुलाखत, मोबाईल, संभाषण

★ थोडासा	अनेक	मोजके
जरासा	काही	वर
हळू	आज	खाली
जिकडे	तिकडे	सावकाश

आम्ही सूचनाफलक वाचतो.

- (१) ही सूचना २३ सप्टेंबर २०२२ या तारखेला देण्यात आली आहे.
- (२) पाणीपुरवठा २४ सप्टेंबर २०२२ रोजी बंद करण्यात येणार आहे.
- (३) पाणीपुरवठा करणाऱ्या पाईप लाईनच्या दुरुस्तीचे काम तातडीने सुरु करण्यात येणार आहे म्हणून पाणीपुरवठा बंद ठेवण्यात येणार आहे.
- (४) उपलब्ध पाण्याचा वापर अधिक काटकसरीने व जपून करावा ही सूचना पाण्याच्या वापराबाबत नागरिकांना देण्यात आली आहे.

## ६. टप् टप् पडती

स्वाध्याय

प्र.१. (अ) प्राजक्तीची फुले टप् टप् अंगावर पडू लागल्यावर त्या तालावर कवितेतील मुलांचे गाणे जुळून येते.

- (आ) भरभर वारा आल्यामुळे गवत खुशीने डोलते.
- (इ) मुलांच्या गाण्यातून पाऊस, वारा व मोरपिसारा फुलतो.
- (ई) जे गाणे गाणार नाहीत त्यांना खुळे म्हटले आहे.

प्र.२. (अ) कुरणावरती, झाडाखाली ऊनसावली विणते जाळी

- (आ) हसते धरती, फांदीवरती हा झोपाळा झुले!
- (इ) पाऊस, वारा, मोरपिसारा या गाण्यातून फुले!

प्र.१. (अ) (१) (i) मोरपिसारा गाण्यातून फुलणाऱ्या गोष्टी वारा



(ii) फांदीवर

(२) (i) ऊनसावली इथे जाळी विणते



(ii) गाणे अमुचे झुळझुळ वारा, गाणे अमुचे लुकलुक तारा.

(३) वारा ज्याप्रमाणे झुळझुळ वाहतो, त्याची मंद झुळूक येते. वारा, पाऊस आनंदाने फुलतो, पावसाचे सौंदर्य जसे फुलते. पाऊस आल्यावर मोर आनंदाने नाचतो आणि मोराचा पिसारा जसा फुलतो त्याप्रमाणे कवीच्या मनातील विचार, कल्पना फुलल्या आहेत. त्याला नवनवीन कल्पना सुचल्या आहेत. म्हणजेच कवीच्या मनातील गाणे फुलले आहे.

(४) गुलाबाला 'फुलांचा राजा' म्हणतात. गुलाब अनेक रंगांचे असतात. गुलाबी, पिवळे, सफेद अशा अनेक रंगांचे गुलाब आपल्याला पाहायला मिळतात. 'काश्मिरी गुलाब' सर्वांत जास्त प्रसिद्ध आहे. गुलाबाचे फूल सुगंधी असते. म्हणूनच गुलाबाच्या पाकळ्यांचा उपयोग करून सुगंधी असे अत्तर बनवितात. बन्याच कार्यक्रमांमध्ये गुलाबाच्या फुलांचा उपयोग करून सजावट करतात. गुलाबाचे फूल स्त्रिया आपल्या केसात माळतात त्यामुळे स्त्रियांच्या केसांची शोभा वाढते. पुण्युच्छ बनविण्यासाठी गुलाबाच्या फुलांचा उपयोग करतात. अनेक लोक गुलाबाच्या फुलांची शेती करून आपली उपजीविका करतात. काही लोक फक्त गुलाबाची फुले विकण्याचा व्यवसाय करतात. गुलाबाच्या फुलांपासून सरबत व गुलकंद बनवतात.

गुलाबाचे फूल सुंदर असून ते औषधीसुदृधा आहे. गुलाबापासून बनवलेले गुलाबपाणी डोळ्यात टाकल्यास आराम मिळतो. खरोखरच काटेरी रोपावर फुलणारे हे फूल म्हणजे निसर्गाचा एक चमत्कारच आहे.

(आ) प्र.१. मंगेश पाडगांवकर

प्र.२. फुलांसारखे सर्व फुला रे सुरात मिसळुनि सूर, चला रे  
गाणे गाती तेच शहाणे, बाकी सारे खुळे!

प्र.३. निसर्गातील प्रत्येक गोष्टीचा आनंद घ्या. फुलांप्रमाणे सर्वांनी आनंदी रहा,  
प्रसन्न रहा. एकमेकांसोबत रहा आणि जीवनाचा आनंद लुटा.’

### खेळूया शब्दांशी

प्र.४. (अ) भिरू भिरू झुळझुळू

(आ) हसरी - धरती झुळझुळू - वारा  
लुकलुक - तारा फांदी - झोपाळा

(इ) (१) कुरणावरती : वर, तीर, कुणावर, रती

(२) झाडाखाली : खाली, झाली, खाडा, झाडा

(३) ऊनसावली : ऊन, सावली, साव, लीन, साली, नऊ, वसा, वन

(ई) उदा. बरे × वाईट शुभ × अशुभ  
आनंद × दुःख यश × अपयश  
नफा × तोटा चढ × उतार  
लहान × मोठे आत × बाहेर



### खेळ खेळूया

शाळा

शाळा आहे.

नागपूरला शाळा आहे.

नागपूरला चौकात शाळा आहे.

नागपूरला चौकात मध्यभागी शाळा आहे.

नागपूरला चौकात मध्यभागी मोठी शाळा आहे.

नागपूरला चौकात मध्यभागी नवजीवन मोठी शाळा आहे.

### ७. आजारी पडण्याचा प्रयोग

#### स्वाध्याय

प्र.१. (अ) पाठातील मुलाच्या घरातील आजारी माणसे संत्री, मोसंबी, सफरचंद, खडीसाखर, बेदाणा, पेढे, गोड औषधे, शिरा हे पदार्थ ‘औषध’ म्हणून घेत असत. हा मुलगा कधीही आजारी पडत नसे म्हणून या पदार्थाना हात लावायची त्याला सक्त मनाई असे. तेव्हा ही औषधे आपणांही बरोबरीने घ्यावीत व त्यांच्या दुःखात सहभागी व्हावे असे वाटू लागले.

(आ) घरातील सर्व मंडळी स्वतःच इतक्या वेळा आजारी पडत होती पण मुलाच्या वाटणीला कोणतेच आजारपण येत नव्हते, तेव्हा मुलाने डॉक्टरांकडून औषध आणायचेच, असे ठरवले.

(इ) डॉक्टरांनी मुलाला तपासले. इकडे, तिकडे, पालथे वळायला सांगितले. गळ्यातली नव्ही छातीवर लावली, जीभ बघितली, तेव्हा मुलाला धन्य धन्य झाल्यासारखे वाटले.

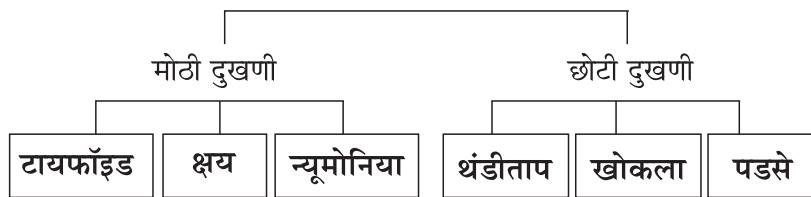
(ई) “तुझी तब्बेत ठणठणीत आहे, तेव्हा औषध काही नाही. पळ घरी जा.” असे डॉक्टरांचे बोलणे ऐकून मुलाची निराशा झाली.

## कृतिपत्रिका - १

उतारा क्र. १

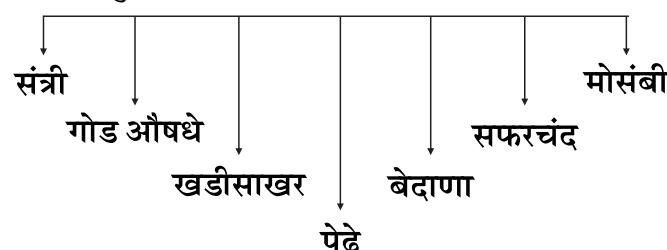
प्र.१. (अ) (१) (i)

मुलाच्या मते



(ii) आपण आजारी पडत नाही याचे

(२) (i) मुलाच्या घरातील आजारी व्यक्तींची औषधे



(ii) (अ) आई - खोकला

(ब) बाबा - पडसे

(क) दादा - अंगदुखी

(ड) ताई - हातदुखी

(३) घरातील एखादी व्यक्ती आजारी पडल्यास मी त्यांच्या सेवेसाठी सदैव हजर असेन. त्यांना औषधे, खाणे-पिणे वेळच्या वेळी देईन. त्यांना वर्तमानपत्र किंवा आवडीची पुस्तके वाचून दाखवेन. त्यांच्याशी गप्पा मारेन. त्यांचे मनोरंजन होईल याकडे लक्ष देईन.

## कृतिपत्रिका - २

उतारा क्र. २

प्र.१. (अ) (१) (i) (अ) मुलगा

(ब) डॉक्टरांनी जेव्हा मुलाच्या पोटावर एकदम टिचकी मारली.

(ii) (अ) छातीवर

(ब) नाखुशीने

(२) (i) “तुम्हांला ऑपरेशन करता येतं का हो डॉक्टर?”

(ii) मुलगा पळत पळत घरी जाऊन सगळ्यांना ऑपरेशन दाखवणार होता.

(३)

आपण आजारी असताना काय करू शकत नाही ?	आपण आजारी नसताना काय करू शकतो ?
खेळायला जाऊ शकत नाही.	जेवढे हवे तेवढे खेळायला मिळते.
बाहेर फिरायला जाता येत नाही.	बाहेर मित्रांबोर फिरायला जाऊ शकतो.
आपल्याला हवे असलेले पदार्थ खाता येत नाहीत.	आपल्या आवडीचे पदार्थ खाता येतात.

## चर्चा करा. सांगा.

(१) चोरावर मोर : वरचढ होणे

वाक्य : नवीन आलेला संजय सर्व कलाकारांमध्ये चोरावर मोर ठरला.

(२) छत्तीसचा आकडा : वैर, विरोध

वाक्य : साप आणि मुंगूस यांचा नेहमी छत्तीसचा आकडा असतो.

(३) जमदग्नीचा अवतार: अतिशय रागीट मनुष्य

वाक्य : आमचे काका म्हणजे जमदग्नीचा अवतार.

(४) इतिश्री: शेवट

वाक्य : पसायदानाने कार्यक्रमाची इतिश्री झाली.

(५) लंकेची पार्वती : अंगावर दागिने नसलेली स्त्री.

**वाक्य :** सतत पडणाऱ्या दुष्काळामुळे शेतकऱ्याची पत्नी लंकेची पार्वती झाली.

(६) कळीचा नारद : भांडणे लावणारा

**वाक्य :** विजय वर्गात नेहमी कळीच्या नारदाची भूमिका करतो.

(७) घागरगडचा सुभेदार : पाणक्या (जमिनीतील पाण्याचा साठा शोधणारा)

**वाक्य :** सदूभाऊ संपूर्ण जिल्ह्यात घागरगडचा सुभेदार म्हणून ओळखले जातात.

(८) उंटावरचा शहाणा : मूर्खपणाचा सल्ला देणारा

**वाक्य :** पावसाळ्यात घराचे छप्पर गळू लागले म्हणून एका उंटावरच्या शहाण्याने नवीन घर बांधण्याचा सल्ला दिला.

(९) गळ्यातला ताईत : अतिशय प्रिय

**वाक्य :** शाळेत सर्व स्पर्धामध्ये प्रथम क्रमांक पटकविणारा गौरांग शिक्षकांच्या गळ्यातला ताईत झाला आहे.

### खेळूया शब्दांशी

(अ) (१) डॉक्टर : वैद्य	(२) ऑपरेशन : शास्त्रक्रिया	
(३) मेडिसीन : औषध	(४) पेशेंट : रुग्ण	
(आ) (१) टवटवीत फूल	(२) चमचमीत जेवण	(३) ठणठणीत आरोग्य
(४) बटबटीत डोळे	(५) मिळमिळीत भाजी	(६) गुळगुळीत दगड
(इ) (१) हॉस्पिटलमध्ये (इस्पितळात) औषधांचा भरपूर साठा होता.		
(२) सरकारी डॉक्टरांच्या औषधांवर आजीचा खूप विश्वास.		
(३) बाबांनी औषधांच्या नवीन बाटल्या आणल्या.		

(४) हळद आणि मध हे खोकल्यावर रामबाण औषध.

(५) डॉक्टरांचे कपाट औषधांनी भरलेले होते.

(६) औषधांना आजकाल खूप मागणी असते.

(७) जुन्या औषधांतून प्राण्यांना विषबाधा झाली.

(८) काकूला आयुर्वेदिक औषधांपासून चांगला आराम पडला.

(ई) (१) सुलेमानचाचा रोज सकाळी फिरायला जातात, त्यामुळे त्यांची तब्बेत ठणठणीत असते.

(२) ध्वनिक्षेपकाच्या आवाजामुळे घरात आजोबांना काही सुचेनासे झाले.

(३) जॉन आज शाळेत नवीन कंपास घेऊन आला होता. वर्गातील सर्व मुलांना दाखवत तो खूप फुशारकी मारत होता.

(४) तो रस्ता खासगी असल्यामुळे आपले वाहन तेथून नेण्याला सक्त मनाई आहे.

### संदेश तयार करूया.

कृय्या शऱ्टता राखा.

येथे थुंकू नये.  
स्वच्छता राखा.

### शब्दयोगी अव्यये

- ★ (१) आमच्या शाळेसमोर वडाचे झाड आहे.
- (२) मुलांनी फुगेवाल्याभोवती गर्दी केली.
- (३) आमचा कुत्रा मला नेहमी मित्राप्रमाणे भासतो.
- (४) देशाला देण्यासाठी तुमच्याकडे दहा मिनिटे वेळ आहे का?

प्र.१. (१) समोर (२) भोवती (३) प्रमाणे (४) वर (५) बाहेर  
 (६) पेक्षा (७) कडे

आपली समस्या आपले उपाय - १

### विचार करा. सांगा.

- (१) शहराच्या सांडपाण्यामुळे, रासायनिक खतांचा वापर केलेल्या शेत जमिनीतून झिरपणाऱ्या पाण्यातील किंवा कारखान्याच्या सांडपाण्यातील नायट्रोजन व फॉस्फरस ही द्रव्ये पाण्यात मिसळल्याने आणि माणसांच्या वाईट सवर्यांमुळे नदीचे पाणी प्रदूषित होते.
- (२) जलपर्णी उगवल्याने पाणी प्रदूषित होते.
- (३) नदीचे पाणी प्रदूषित होऊ नये म्हणून पुढील उपाय करता येतील. (i) प्रक्रिया करूनच नदीत सांडपाणी सोडले पाहिजे. (ii) नदीत निर्माल्य, कचरा टाकू नये. (iii) माणसाने आपल्या वाईट सवर्यांसोडून दिल्या पाहिजेत उदा. नदीकाठी कपडे-गुरे धुणे, शौचास बसणे, नदीत आंघोळ करणे. (iv) नदीतील गाळ उपसला पाहिजे.
- (४) नदीत सोडल्या जाणाऱ्या सांडपाण्यातील नायट्रोजन व फॉस्फरस या द्रव्यांवर प्रक्रिया केली पाहिजे. नायट्रोजन व फॉस्फरस ही द्रव्ये असलेले पाणी नदीत सोडू नये.

### आम्ही जाहिरात वाचतो.

- (१) ही जाहिरात पुस्तक प्रदर्शनासंदर्भात आहे.
- (२) १५ ते २० ऑक्टोबर २०२२
- (३) पुस्तक प्रदर्शनाची वैशिष्ट्ये - (i) छोट्यांसाठी व मोठ्यांसाठी स्वतंत्र दालन (ii) नामवंत साहित्यिकांची पुस्तके (iii) विविध विषयांवरील पुस्तके (iv) मुलांसाठी आवडत्या गोष्टींची, प्रयोगांची, कोड्यांची आणि कृतींची पुस्तके (v) सायंकाळी ७ ते ८ या वेळेत नामवंत साहित्यिक आपल्या भेटीला व प्रत्यक्ष वार्तालाप करण्याची संधी.
- (४) शारदा विद्यालयाचे सभागृह येथे प्रदर्शन भरणार आहे.
- (५) शंभर रूपयांच्या खरेदीवर वीस रूपयांची सवलत मिळणार आहे.
- (६) आम्ही पुस्तक प्रदर्शनात गोष्टींची, प्रयोगांची, कोड्यांची, कृतींची पुस्तके खरेदी करू.

### ओळखा पाहू!

(१) खुर्ची (२) टेबल (३) कंगवा (४) सुई (५) ब्रश

### ओळखा पाहू!

(अ) सूर्य	(आ) पोपट	(इ) मोबाईल	(ई) चेंडू
(उ) टिक्की.	(ऊ) लिंबू	(ए) चंद्र	(ऐ) झाड

# हिंदी सुलभभारती

## 6. 'पृथ्वी' से 'अग्नि' तक

प्र.1. (1) (ब) वैज्ञानिकों ने मिसाइल को 1 मई 1989 को प्रक्षेपण के तैयार कर लिया।  
 (ड) कंप्यूटर पर एक "होल्ड" का संकेत दिखाई पड़ा।  
 (अ) प्रक्षेपण एक बार स्थगित करना पड़ा।  
 (क) डॉ. ए. पी. जे. कलाम ने डी. आर. डी. एल् के सदस्यों को संबोधित किया।

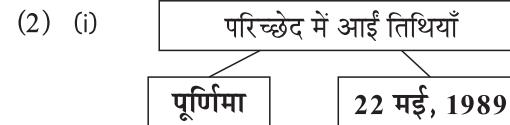
(2) (i) तकनिकी खराबियों के कारण 'अग्नि' का प्रक्षेपण फिर एक बार स्थगित करना पड़ा।  
 (ii) महीने के खत्म होने से पहले सदस्य वापस मिलेंगे क्योंकि डॉ. कलाम जी के वक्तव्य ने वैज्ञानिकों में 'अग्नि' के कामयाब प्रक्षेपण के प्रति विश्वास जगा दिया था।

(3) (i) (1) **आसान** (2) **जीत**  
 (ii) (1) **कामयाबी** (2) **आहवान**

(4) सच है बड़े अवसर आते हैं तो अपने साथ कुछ चुनौतियाँ लेकर आते हैं लेकिन उन चुनौतियों का सामना करते हुए निरंतर प्रयास करते रहना चाहिए। कोशिश करने से चुनौती को अवसर में बदलने में समय नहीं लगेगा और लक्ष्य की प्राप्ति होगी। किसी कार्य में सफलता आसानी से नहीं मिलती। उसमें कामयाब होने के लिए चुनौतियों का सामना करना ही पड़ता है। बड़े अवसर और चुनौतियाँ साथ साथ ही चलती हैं। कड़ी मेहनत और हिम्मत से चुनौतियों का स्वागत करना चाहिए।

प्र.2. (1) (ii) सैकड़ों कर्मचारियों ने लगातार काम करके प्रणाली का काम केवल दस दिन में पूरा कर डाला।  
 (iv) मौसम संबंधी आँकड़े रुक-रुककर आने लगे और दस मिनट के अंतराल में उनकी बाढ़-सी आ गई।  
 (i) क्या हम 'अग्नि' प्रक्षेपण में कल सफल होंगे? यह सवाल हमारे दिमागों में सबसे ऊपर था।

(iii) रक्षामंत्री ने डॉ. कलाम से उपहार में क्या चाहिए पूछा।



(ii) (1) ज्वार के कारण लहरें किनारों से टकराकर और अधिक शोर मचा रही थी।  
 (2) अग्नि की कामयाबी का जश्न मनाने के लिए रक्षामंत्री डॉ. अब्दुल कलाम को उपहार देना चाहते थे।

(3)

शब्द	मूल शब्द	उपसर्ग	प्रत्यय
स्वीकार्यता	कार्य	स्वी	ता
उपहार	हार	उप	-
प्रक्षेपण	क्षेपण	प्र	-
खामोशी	खामोश	-	ई

(4) गर्मी, जाड़ा और बरसात जैसे विभिन्न मौसम हैं। गर्मी से बचने के लिए हमें पानी अधिक मात्रा में पीना चाहिए और घर से बाहर निकले तो अपने साथ पानी रखना जरूरी है। गर्मियों के मौसम में तरबूज, ककड़ी खाना स्वास्थ के लिए लाभदायक है। पेय पदार्थ में गन्ने का रस, निंबू शरबत, छास पीना चाहिए। ज्यादा तेल, मसाले वाला भोजन नहीं खाना चाहिए जिससे पाचन की समस्या का सामना करना पड़े। गर्मी में बाहर निकले तो सिर ढकने के लिए रूमाल, टोपी का उपयोग करना चाहिए। तेज धूप के कारण त्वचा पर बहुत परिणाम होता है इसलिए सुती कपड़े पहनना जरूरी है। जितना हो सके धूप में बाहर कम ही निकलें।

ठण्डी के मौसम से बचने के लिए गर्म कपड़े और मौजे पहनने चाहिए। एड़िया और होठों को फटने से बचाए। त्वचा की नमी बनाए रखने के लिए तेल या क्रीम का प्रयोग करना चाहिए। पौष्टिक नाश्ता करना जरूरी है। खाने में ऊर्जा देनेवाला भोजन खाना चाहिए। ताजे फल, हरी सब्जियाँ, दूध का सेवन करना चाहिए। सुबह उठकर व्यायाम करना चाहिए।

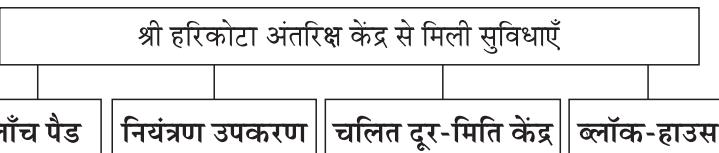
बरसात में डेंगू, मलेरिया, डायरीया जैसी बीमारियाँ फैलती हैं इसलिए घर और घर के आसपास की जगह साफ रखनी चाहिए। घर के आसपास पानी जमा होने न दें। क्योंकि इन्हीं दिनों मच्छर ज्यादा पनपते हैं। इस तरह सावधानी बरतेंगे तो मौसम की मार से बचेंगे। बारिश में भीगना नहीं चाहिए। भीगकर आए तो तुरंत गीले कपड़े बदलने चाहिए। हमेशा अपने साथ रेनकोट या छाता रखना जरूरी है। घर में बनाया हुआ भोजन ही खायें। बरसात में रास्ते पर खाना मतलब बीमारी को दावत!

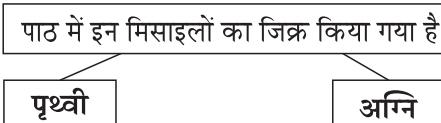
### स्वाध्याय

**प्र.1.** (अ) (1) 'पृथ्वी' प्रक्षेपण के लिए श्रीहरिकोटा अंतरिक्ष केंद्र में विशेष सुविधाएँ स्थापित की।  
 (2) सिर्फ छह सौ सेकंड्स की भव्य उड़ान ने हमारी सारी थकान को एक पल में धो डाला।  
 (आ) (1) परियोजना (2) गतिविधियाँ (3) लक्ष्य

**प्र.2.** (1) श्रीहरीकोटा अंतरिक्ष केंद्र से 25 फरवरी, 1988 को 'पृथ्वी' उपग्रह छोड़ा गया। यह देश के रॉकेट विज्ञान के इतिहास में एक युगांतरकारी घटना थी। देश एक आत्मनिर्भर देश के रूप में उभर आया। इस तरह सामर्थ्यशाली अंतरिक्ष उद्योग और व्यवहार्य मिसाइल सुरक्षा प्रणालियों ने भारत को चुनिंदा राष्ट्रों के समूह में पहुँचा दिया।  
 (2) 19 अप्रैल, 1989 को 'अग्नि' का प्रक्षेपण निर्धारित किया गया था। लेकिन तकनिकी खराबियों के कारण उन्हें प्रक्षेपण स्थगित करना पड़ा। टीम के सदस्य सदमे में थे। उनका दुख दूर करने गए डॉ. ए. पी. जे. कलाम ने उनके साथ अपना अनुभव बांटा। उन्होंने कहा कि, उनका प्रक्षेपणयान तो गिरकर समुद्र में खो गया था जिसकी वापसी भी सफलता से हुई। आपकी मिसाइल अभी तक आपके सामने है और आपने ऐसा कुछ भी नहीं खोया है जिसे एक-दो हफ्तों में सुधारा न जा सके।  
 (3) डॉ. कलाम जी के प्रोत्साहन पर वैज्ञानिकों ने दिन-रात मेहनत की और 1 मई, 1989 को 'अग्नि' मिसाइल को प्रक्षेपण के लिए तैयार कर लिया। लेकिन स्वचलित कंप्यूटर जाँच अवधि के दौरान टी-10 सेकंड पर एक 'होल्ड' का संकेत दिखाई पड़ा। इसलिए 'अग्नि' का प्रक्षेपण स्थगित करना पड़ा।

(4) 22 मई, 1989 को 'अग्नि' प्रक्षेपण निर्धारित किया गया था। उस की पहली रात में रक्षामंत्री महोदय ने डॉ. कलाम से पूछा, "कलाम! कल तुम 'अग्नि' की कामयाबी का जश्न मनाने के लिए मुझसे क्या उपहार चाहोगे?" इस तरह एक मामूली सा सवाल रक्षामंत्री ने डॉ. कलाम जी से पूछा।

**प्र.3.** (1) 

(2) 

### अध्ययन कौशल

★ अपने स्वास्थ्य का ख्याल रखते हुए मैं सुबह छह बजे उठता हूँ। अपने नित्यकर्म करने के बाद आधा घंटा व्यायाम करता हूँ। नहाने के बाद नाश्ता और दूध पीकर पढ़ने बैठता हूँ। पाठशाला में दिया हुआ गृहकार्य पूरा कर पहले दिन पाठशाला में पढ़ाए गए पाठ दोहराता हूँ। 9.00 बजे पाठशाला जाता हूँ। 4.30 बजे तक पाठशाला में पढाई-लिखाई होती है। 4.30 बजे पाठशाला छूटती है। घर आकर हाथ-पैर धोने के बाद माँ ने किया नाश्ता करता हूँ। फिर थोड़ी देर साईकिल चलाने जाता हूँ या कभी दोस्तों के साथ खेलता हूँ। खाना खाकर अपने मातापिता, भाई के साथ गपशप करता हूँ। थोड़ी देर दूरदर्शन के अच्छे कार्यक्रम देखता हूँ। 9.30 बजे सो जाता हूँ। छुट्टी के दिन मेरी इस दिनचर्या में थोड़ा बदलाव आ जाता है।

### व्याकरण

**प्र.1.** 

(1) रमेश ने विनम्र होकर आज्ञापालन किया।  
 (2) छात्र में नम्रता होनी ही चाहिए।



(1) नील निडर है।  
 (2) हमने एक डरावना दृश्य देखा।



(1) सीमा ने निर्जल व्रत रखा।  
 (2) सरोवर में जलज शोभायमान थे।

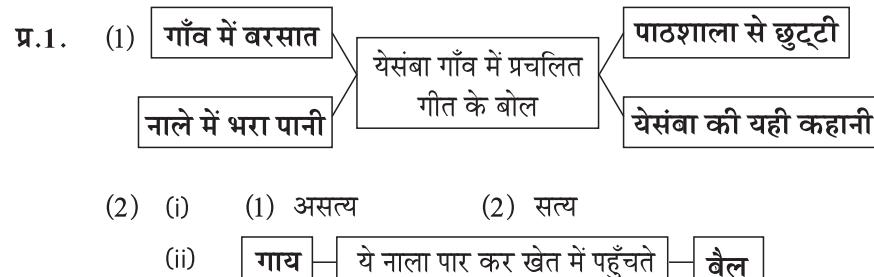


(1) मेरी निद्रा भंग करने का दुःसाहस किसने किया?  
 (2) देश के बालक साहसी हैं।



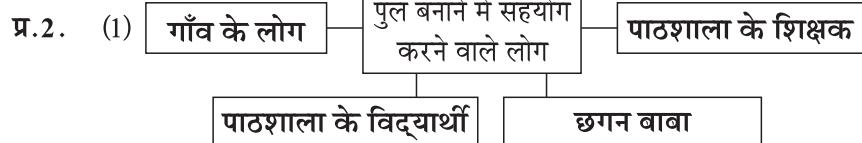
(1) असत्य कभी न बोलो।  
 (2) मामले के तह तक जाकर ही सत्यता समझ में आएगी।

## 7. जहाँ चाह, वहाँ राह



(2) (i) (1) असत्य (2) सत्य  
 (ii) **गाय** — ये नाला पार कर खेत में पहुँचते — **बैल**  
 (3) (i) (1) **अनुपस्थित** (2) **संभव**  
 (ii) (1) **विद्यार्थी** (2) **बस्ती**  
 (4) पाठशाला में अनुपस्थित रहने के कारण विद्यार्थियों की पढ़ाई पर बुरा असर पड़ता है। अनुपस्थित विद्यार्थी अन्य विद्यार्थियों से पढ़ाई में पीछे छुट जाते हैं। जिस दिन अनुपस्थित रहते हैं उस दिन की पढ़ाई दूसरे दिन करने में समय चला जाता है। अध्यापक जो पाठशाला में पढ़ाते हैं वह समझने में अनुपस्थित बच्चों को दिक्कत होती है और विद्यार्थियों की सोचने समझने की शक्ति कम हो जाती है। उनको अनुपस्थित रहने की आदत हो जाती है। उनका आत्मविश्वास कम होता है। पढ़ाई से ध्यान हट

जाता है। अच्छी श्रेणी लाने वाले विद्यार्थी भी वार्षिक परीक्षा में पीछे रह जाते हैं।



(2) (3) गाँव के लोग सहायता के लिए आगे आए।  
 (1) सामग्री खरीदने के लिए आवश्यक राशि जमा हुई।  
 (4) पत्थर इकट्ठे किए गए।  
 (2) बंजर जमीन से मिट्टी खोदी गई।

(3) (i) (1) पाठशालाएँ (2) ईट  
 (ii) (1) उपजाऊ (2) अंत

(4) भारत की अनेक महत्वपूर्ण परंपराओं में से श्रमदान भी एक परंपरा है। सामूहिक श्रमदान का अर्थ है निःस्वार्थ होकर एकजूट से जनकल्याण का कार्य करना। सामूहिक श्रमदान से लोगों के बीच आपसी सहयोग, परोपकार, त्याग, दया, उदारता की भावना उत्पन्न होती है और हमारा शारीरिक और मानसिक विकास होता है। हमसे आत्मविश्वास का निर्माण होता है। सामूहिक श्रमदान से हम गाँव की समस्याओं का समाधान कर के उन्हे विकसित और खुशहाल बना सकते हैं जैसे कुएँ खोदना, स्वच्छता, वृक्षारोपण संबंधी कार्य आदि। सामूहिक श्रमदान से सबकुछ संभव कर सकते हैं। समाज, गाँव और शहर को पूर्ण शक्तिशाली बनाने में सामूहिक श्रमदान से सहायता मिल सकती है।

### स्वाध्याय

प्र.1. (अ) (1) यह वाक्य गुरुजी ने विद्यार्थियों से कहा।  
 (2) यह वाक्य आशीष ने अपने मित्र-सहेलियों से कहा।  
 (3) यह वाक्य जुई ने तुषार से कहा।  
 (आ) (1) अनुपस्थिति (2) माहौल (3) सामग्री

प्र.2. (अ) (1) क्योंकि धुआँधार बरसात हो रही थी।

(2) क्योंकि बरसात के कारण नाले में पानी भरा था और नाले को लाँघना विद्यार्थियों के लिए संभव नहीं था।

(3) क्योंकि दामिनी ने विश्वास के साथ कहा था कि हर समस्या का निदान संभव है और सब मिलकर विचार करेंगे तो कोई न कोई रास्ता अवश्य मिलेगा और बरसात में भी वे पाठशाला जा पाएँगे।

(आ) (4) विद्यार्थियों ने छोटे-छोटे समूह बनाकर प्रकल्प पर काम करना शुरू कर दिया।

(3) पाठशाला के शिक्षक और गाँव के लोग सहायता के लिए आगे आए।

(1) बंजर जमीन से मिट्टी खोदी गई।

(2) विद्यार्थी हँसते-खेलते पुल से पाठशाला की राह जाने लगे।

प्र.3. (1) कहानी का शीर्षक है 'जहाँ चाह, वहाँ राह' जो सर्वथा सार्थक है। कहानी में छोटे बच्चों ने नाले पर पुल बनाने का निश्चय किया। यह एक असंभव लगने वाला कार्य था जो उनके हौसले के कारण संभव हुआ और उनकी पाठशाला नियमित जाने की इच्छा पूरी हुई। मनुष्य बुद्धिमान है और हर समस्या का हल वह ढूँढ़ सकता है क्योंकि 'कोशिश करने वालों की कभी हार नहीं होती।'

(2) यह कहानी येसंबा गाँव के बच्चों की है जो पाठशाला में पढ़ते थे। येसंबा गाँव में एक नाला था जो गाँव को दो भागों में बाँट देता था। एक तरफ बस्ती और दूसरी तरफ खेत और पाठशाला थी। बरसात के दिनों में नाले में पानी भर जाता। तब बड़े-बुजुर्ग अपने गाय-बैलों के साथ खेत में पहुँच जाते पर बच्चों को नाला लाँघना मुश्किल हो जाता और वे पाठशाला नहीं जा पाते।

एक दिन बच्चे पाठशाला नहीं जा पाए थे और बरगद के पेड़ के चबूतरे पर बैठकर बातें कर रहे थे। तब उन्होंने अपनी समस्या हल करने के बारे में विचार किया। उन्होंने नाले पर पुल बनाने का निश्चय किया। उनके हौसले को देखकर गाँव के लोग और पाठशाला के शिक्षक सहायता के लिए आगे आए। पुल के लिए धन जमा किया और अंततः उनकी वर्षों की कठिनाई दूर हो गई। नाले पर केवल पंद्रह दिनों में ग्रामीणों और विद्यार्थियों के

सामूहिक श्रमदान से पुल बना। एकता, संगठन और श्रमदान के कारण असंभव को उन्होंने संभव कर दिखाया।

प्र.4. (1) पुल बनाने की योजना में साथ मिलकर काम करने वाले

(2) विद्यार्थी शिक्षक गाँव के लोग

कहानी में आए विद्यार्थियों के नाम

तुषार उज्ज्वला आशीष दामिनी शुभम जुई

प्र.5. घर : छुट्टी का दिन था। सुबह जल्दी आँख खुल गई थी। माता-पिता और दीदी सब सोए थे। तभी मैंने सोचा आज मैं सबके लिए चाय बनाऊँगा और फिर उन्हें जगाऊँगा। मैंने अपनी योजना के अनुसार चाय चढ़ा दी। पर दूध फट गया था। अब दूधवाला दूध ला देगा तभी मैं सबको चाय पिला सकूँगा। मैंने लेमन-टी के बारे में पढ़ा था। फिर क्या? मैंने सब को लेमन-टी पिला दी। घर में सबने मेरी तारीफ की और मुझे लगा मैंने आज बड़ा काम कर दिया।

विद्यालय : मेरा हस्ताक्षर ठीक-ठाक है। सुंदर नहीं पर हर कोई आसानी से पढ़ सकता है। विद्यालय में जब हमारी वर्ग शिक्षिका ने फलक लेखन के लिए मुझे चुना तो मैं बहुत प्रसन्न हुआ। मैंने उस हफ्ते भर में कई किताबों से पढ़कर सुवचन ढूँढ़े और फलक पर लिखे। मेरे इस कार्य के लिए मुझे शाबाशी मिली।

परिवेश : अपना परिवेश साफ-सुथरा रखना हमारा कर्तव्य है। और 'स्वच्छ ग्राम-स्वस्थ ग्राम' नारा तो चारों ओर सुनाई देता है। मैंने अपने परिवेश में एक दल बनाया और हमारे दल के बच्चे किसी को भी सड़क पर कूड़ा नहीं फेंकने देते।

त्योहार : इस बार हमने दीवाली के त्योहार पर अनाथालय में जाकर बच्चों को मिठाई और नए कपड़े बांटे। मिठाई और कपड़े पाकर उन बच्चों के चेहरे पर मुस्कराहट आई जो हमारे दिल को छू गई।

खोजबीन :

★ 'कंधे से मिलते हैं कंधे और कदमों से कदम मिलते हैं, जब चलते हैं हम ऐसे तो दिल दुश्मन के हिलते हैं।'

★ ऐसी इस भारतीय सेना के तीन रेजिमेंट हैं - (1) थलसेना (2) नौसेना और

(3) वायु सेना इसके अलावा नाभिकीय कमान प्राधिकरण भी एक विभाग है और तटरक्षक दल भी है।

★ भारतीय सेना के पद : तीनों विभागों के मुख्य राष्ट्रपति होते हैं।

सेना के पद - (1) फिल्ड मार्शल (2) जनरल (3) लेफिटनेंट जनरल  
 (4) मेजर जनरल (5) ब्रिगेडियर (6) कर्नल  
 (7) लेफिटनेंट कर्नल (8) मेजर (9) कैप्टन  
 (10) लेफिटनेंट (11) सूबेदार मेजर (12) सूबेदार  
 (13) नायब सूबेदार (14) हवालदार, नायक और लांस नायक

इनके पोशाकों के रंग अलग-अलग हैं।

थलसेना के पोशाक का रंग खाखी है और उसपर हरे रंग के धब्बे हैं।

नौसेना की पोशाक सफेद रंग की है और वायुसेना की पोशाक आसमानी नीले रंग की है।

### व्याकरण

प्र.1.

उद्देश्य	विधेय
(1) हिमालय	देश का गौरव है।
(2) महासागर	अपने देश के चरण पखारता है।
(3) निखिल	कश्मीर धूमने गया था।
(4) मुंबई	देश की आर्थिक राजधानी है।
(5) परिश्रम	सफलता की कुंजी है।

प्र.2. (अ) (1) जंगल की आग की तरह फैलना - तेजी से फैलना

वाक्य - गाँव में आतंकवादी आ चुके हैं यह बात गाँव में जंगल की आग की तरह फैल गई।

(2) दाद देना - प्रशंसा करना।

वाक्य - अध्यापक ने राम की होशियारी की दाद दी।

(आ) जहाँ चाह वहाँ राह - अर्थ : इच्छा होने पर मार्ग मिलता है।

वाक्य - अंततः आतंकवादी के चंगुल से हम बच निकले; सच कहते हैं जहाँ चाह वहाँ राह।

### लेखन कौशल (Writing Skill)

प्र.1. इसी वर्ष की घटना है। फरवरी में हमारे विद्यालय का वार्षिक महोत्सव बड़े धूमधाम से मनाया गया। मातोश्री प्रमिला बेन सभागृह में मशहूर कलाकार समीर वाजपेयी ने पथारकर अध्यक्षपद विभूषित किया। इस अवसर पर कई गणमान्य अतिथि, पाठशाला के आजी-माजी छात्र एवं अभिभावक उपस्थित थे। गणेश वंदना एवं सरस्वति वंदना से कार्यक्रम की शुरुआत हुई। छठी कक्षा के छात्रों ने स्वागत गीत प्रस्तुत किया।

तत्पश्चात हमारे विद्यालय के निरीक्षक शर्मा सर ने अध्यक्ष महोदय का परिचय दिया और गुलदस्ता देकर सम्मानित किया। अध्यक्ष महोदय के करकमलों द्वारा होनहार छात्रों को पुरस्कार दिए गए।

इस अवसर पर अनेक सांस्कृतिक कार्यक्रम रखे गए। नृत्य, संगीत, एकांकी आदि द्वारा भारतीय संस्कृति की झाँकियाँ प्रस्तुत की गई। अध्यक्ष महोदय ने कार्यक्रम की भूरी-भूरी प्रशंसा की और विद्यार्थियों के सुनहरे भविष्य की कामना करते हुए हमें शुभाशीष दिया। धन्यवाद यापन के बाद राष्ट्रगीत गाया गया जो मैंने मेरे साथियों के सांग प्रस्तुत किया। इसके साथ ही इस रंगारंग कार्यक्रम का समापन हुआ।

### वाचन जगत से

(1) गणतंत्र दिवस पर प्रधान मंत्री के हाथों साहसी बालकों को सम्मानित किया जाता है। उनको हाथी पर बिठाकर उनका जुलूस निकाला जाता है। चारू और चिन्मय ऐसे ही वीर बालक हैं।

एक दिन दोपहर के वक्त वे दोनों अपनी माँ के साथ लोकल ट्रेन से कहीं जा रहे थे। रास्ते में दो बदमाश गाड़ी में चढ़े और एक ने एक साठ साल की वृद्धा का बैग झापट लिया। दूसरे ने चाकू दिखाकर बच्चों की माँ का बैग छीना। चारू ने तब बदमाशों के हाथों से अपनी माँ का बैग छीन लिया। इसपर बदमाश ने चारू के बाल खींचे, उसे पीटा पर चारू ने बैग नहीं छोड़ा। चिन्मय ने उस बदमाश के बाल खींचे और उसे काट लिया जिसके कारण बदमाश के हाथ से चाकू छूट गया। चिन्मय ने झट चाकू उठाया और ट्रेन से बाहर फेंक दिया। दोनों भाई-बहनों को चोटें आईं पर वे उन बदमाशों से लड़ते रहे। इसी मूठभेड़ में वृद्धा का बैग भी

बदमाश के हाथ से छूट गया जिसे चिन्मय ने पकड़ लिया। हालात बेकाबू होते देख अगला स्टेशन आते ही बदमाश भाग गए। इस तरह दोनों बालकों ने मिलकर दो-दो बदमाशों के दाँत खट्टे किए।

(2) विद्यार्थी स्वयं करें।

**प्रकल्प**

**अध्ययन कौशल्य**

★

रोग	टीका
तपेदिक (टीबी)	बी.सी.जी
डिस्थीरिया	डी.टी.पी या डी.पी.टी
खसरा	एम.एम.आर.
रोटावायरस	रोटावायरस
टायफॉइड (मोतीझरा)	टायफॉइड
रुबेला	एम.एम.आर.
हैपेटाइटिस ए	हैपेटाइटिस ए.
टिटनस	डी.टी.पी. या डी.पी.टी.

## 8. जीवन नहीं मरा करता है।

प्र.1. (1) - आ, (2) - ई, (3) - अ, (4) - इ

(2) (i)

(ii) (1) आँसू - क्या नीलाम हुए तो तपस्या पूरी हुई?  
 (2) माला - क्या बिखर गई तो समस्या हल हुई?

(3) जिनके सपने टूट गए हैं उन्हें कवि समझा रहे हैं,

इस तरह छिप-छिपकर आँसू बहाने वालों, ये आँसू मोतियों की तरह अनमोल हैं, इन्हें व्यर्थ मत लुटाओ, क्योंकि कुछ सपनों के मर जाने से जीवन मरा नहीं करता है। आँसूओं की माला बिखरे देने से समस्या हल नहीं होती। जीवन में आने वाली कठिनाइयाँ खुद ही हल नहीं होती। आँसू अगर

नीलाम हो गए तो समझो कि तपस्या पूरी हुई। अपने रुठे दिनों को मनाने वालों, फटी हुई कमीज को सिलाने वालों कुछ दीपों के बुझ जाने से आँगन नहीं मरता है। आँगन में रोशनी लेकर नए दीपक आते ही हैं।

प्र.2. (1)

‘अ’	‘आ’
(1) गगरियाँ	पनघट
(2) उपवन	माली
(3) खिड़की	धूल
(4) किश्तियाँ	तट

(2) (i) (1) असत्य (2) सत्य  
 (ii) तम की उमर बढ़ाने वालो! लौ की आयु घटाने वालो!  
 (3) पनघट पर कितनी ही गगरियाँ फूटी परंतु पनघट ने फूटी हुई गगरियों की चिंता नहीं की। कितनी ही बार पानी में किश्तियाँ ढूब गई लेकिन किनारे पर जीवन की चहल-पहल बनी रही। ऐ अंधकार की उम्र बढ़ाने वालो और ज्योति की आयु घटाने वालो, याद रखो कि पतझड़ कितनी भी कोशिश कर ले परंतु उपवन मरा नहीं करता, उसमें बहार फिर से आती ही है।

प्र.3. (1) गोपालदास सक्सेना ‘नीरज’

(2) ‘चंद खिलौनों के खोने से बचपन नहीं मरा करता है।’  
 (3) यह पंक्ति मुझे सबसे अच्छी लगी। जीवन की सच्चाई इसमें छिपी है। खिलौना टूटने पर रोना तो खूब आता है पर नया खिलौना मिलने पर टूटे हुए खिलौने को बालक भूल जाता है वैसे ही जीवन में उम्मीदों के बँधने टूटने का गम और खुशी समाहित रहती है। उम्मीद टूटने पर गम में ढूबे हम फिर से नई उम्मीद के जागने पर उत्साह के साथ आगे बढ़ते हैं।  
 (4) कालचक्र निरंतर गतिमान है। समय कभी किसी के लिए रुकता नहीं है। हमारे कुछ सपने पूरे नहीं हुए तो जीवन खत्म नहीं होता। हमें नई उम्मीद के साथ जीवन में आगे बढ़ना चाहिए। आँसू समस्याओं का हल नहीं होता।

जीवन में सुख-दुःख तो आते ही है, जीवन में असफल हुए तो जीवन रुकता नहीं। यह संदेश मिलता है।

### स्वाध्याय

प्र.1. (अ) (1) पतझर के मौसम में पेड़ के पत्ते झर जाते हैं और उपवन मुरझा जाता है। परंतु पेड़-पौधों की शाखाओं में फिर से बहार देखने की इच्छा जीवित होती है। वह इच्छा उपवन को मरने नहीं देती और वसंत ऋतु के आते ही उपवन फिर से पल्लवित हो जाता है।

(2) पनघट पर औरते पानी भरने आती हैं। उनकी गगरियाँ मिट्टी की होती हैं जो लंबे समय तक नहीं टिकतीं इसलिए फूट जाती हैं। फूटने पर औरतें नई गगरियाँ ले आती हैं और पानी ले जाती हैं। गगरियों के फूटने की चिंता न पनघट करता है न औरतें। पनघट पर चहल-पहल वैसी ही बनी रहती है।

(3) इस धरती पर कुछ भी नष्ट नहीं होता, केवल उसका रूप बदल जाता है। जिस तरह किताब पुरानी हो जाती है तो उसपर नया आवरण चढ़ाकर उसे नया बना देते हैं वैसे ही हमारा जीवन भी शाश्वत है। समस्याओं के आने से वह खत्म नहीं होता। काल चक्र निरंतर गतिमान है और हमें इस सच्चाई के साथ जीना है, आगे बढ़ना है।

(आ) इस कविता में कवि 'नीरज' जी ने हमें विविध उदाहरण देकर जीवन की शाश्वतता की ओर संकेत किया है। हम जीवन में कई सपने देखते हैं। सपने पूरे होते हैं तो हमें जीवन सुखमय लगता है और सपने टूट जाने पर हम भी टूट कर बिखर जाते हैं। कवि हमें समझा रहे हैं कि आँसू बहाने से कभी समस्या का हल नहीं निकलता। जीवन में सुख और दुख दोनों आते ही हैं। अपनों द्वारा ही हमारे साथ छल होता है और हमारी असफलता पर खिल्ली भी उन्हीं द्वारा उड़ाई जाती है। अपनों की खोल से बाहर निकलकर वे पराए हो जाते हैं पर जीवन रुकता नहीं।

(इ) निम्न पंक्तियाँ जीवन की शाश्वतता बताती हैं।

- \* कुछ सपनों के मर जाने से जीवन नहीं मरा करता है।
- \* कुछ दीपों के बुझ जाने से आँगन नहीं मरा करता है।

- \* कुछ खिलौनों के खोने से बचपन नहीं मरा करता है।
- \* लाख करे पतझर कोशिश पर उपवन नहीं मरा करता है।
- \* कुछ मुखड़ों की नाराजी से दर्पन नहीं मरा करता है।

### अध्ययन कौशल

★ सौरऊर्जा वह ऊर्जा है जो सीधे सूर्य से प्राप्त की जाती है। सौरऊर्जा ही मौसम एवं जलवायु में परिवर्तन लाती है। यह ऊर्जा ही धरती पर सभी प्रकार के जीवन (पेड़-पौधे, जीव-जंतु आदि) का सहारा है।

वैसे तो सौरऊर्जा के विविध प्रयोग किए जाते हैं। किंतु सौरऊर्जा को विद्युत ऊर्जा में बदलना अहं है। सौरऊर्जा जो रोशनी और उष्मा दोनों रूपों में प्राप्त होती है और कई प्रकार से उपयोग में लाई जाती है। सौर उष्मा का उपयोग अनाज को सुखाने, खाना पकाने, पानी उबलना, पानी शुद्ध करने के लिए तथा बिजली बनाने के लिए किया जाता है।

इसके प्रयोग में खामियाँ भी हैं। बरसात के दिनों में जब सूर्य किरणें कम मात्रा में मिलती हैं तो उसका परिणाम उत्पाद पर होता है। फिर भी सौरऊर्जा एक ऐसी ऊर्जा है जिसका स्रोत निरंतर मिलता रहेगा, अन्य ऊर्जा स्रोतों की तरह नष्ट नहीं होगा।

### व्याकरण

#### भाषा की ओर

प्र.1. (1) कामायनी (महाकाव्य) कवि जयशंकर प्रसाद।

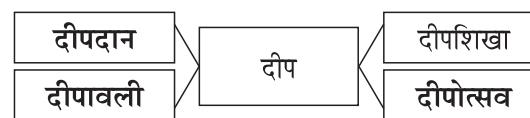
(2) विशाखा लंदन से दिल्ली आती है [ हवा जैसी ] आने की सूचना नहीं देती।

(3) बालभारती सुलभभारती हिंदी की पुस्तकें हैं।

(4) किसी दिन हम भी आपके ^ आएँगे।

#### मेरी कलम से

★



★ विद्यार्थी स्वयं करें।

अध्यास - 1

संज्ञा शब्द	सर्वनाम शब्द	विशेषण शब्द	क्रिया शब्द
पेड़	हम	चार	बैठना
अमित	कोई	मीठे	पिलाना
प्यास	कौन	थोड़ा	गिरना

संज्ञा शब्द	भेद	वाक्य
पेड़	जातिवाचक संज्ञा	पेड़ की छाया में पंछी बैठे हैं।
अमित	व्यक्तिवाचक संज्ञा	अमित दादाजी को पानी दे रहा है।
प्यास	भाववाचक संज्ञा	दादाजी को प्यास लगी है।

सर्वनाम शब्द	भेद	वाक्य
हम	पुरुष वाचक सर्वनाम	हमने पेड़ पर घराँदा देखा।
कोई	अनिश्चय वाचक सर्वनाम	कोई गा रहा है।
कौन	प्रश्नवाचक सर्वनाम	पेड़ पर कौन बैठा है?

विशेषण शब्द	भेद	वाक्य
चार	संख्यावाचक विशेषण	पेड़ पर चार पंछी बैठे हैं।
मीठे	गुणवाचक विशेषण	आम मीठे हैं।
थोड़ा	अनिश्चित परिमाणवाचक विशेषण	दादाजी थोड़ा पानी पीजिए।

क्रिया शब्द	भेद	वाक्य
बैठना	अकर्मक क्रिया	बच्चे पेड़ के नीचे बैठे हैं।
पिलाना	प्रेरणार्थक क्रिया	बच्चे ने दादाजी को पानी पिलाया।
गिरना	सहायक क्रिया।	आम नीचे आ गिरा।

पुनरावर्तन - 1

प्र.1. पाठशाला ... लालच ... चम्मच ... चतुर ... रजत ... तरफ ... फसल

भारत	अंतर्र:	पृथ्वी	जादू	प्रणाली
सामग्री	लहरें	रोजगार	यातायात	क्रांति
अगस्त	उन्नति	हालाँकि	आँगन	मुक्ति
उंगली	चाँदनी	घोंसला	होशियार	विश्वास

उचित क्रम :

स्वर : अ आ इ ई उ ऊ ए ऐ<sup>े</sup>  
ओ औ अं अः अँ आौ

व्यंजन : क ख ग घ ड  
च छ ज झ झ  
ट ठ ड ढ ण  
त थ द ध न  
प फ ब भ म  
य र ल व श  
ष स ह ळ<sup>्</sup>  
क्ष झ त्र श्र

प्र.4.

## भव्य प्रदर्शनी

‘चित्रकला हुनर की पहचान  
चित्रकला प्रदर्शनी की शान’

अपनी कला को लेकर उड़ान भरो  
क्षणभर की भी देरी न करो

- \* पाठशाला में पढ़ने वाले छात्रों के चित्र आमंत्रित हैं।
- \* चित्र चित्रकला की किसी भी शैली में हो सकता है - छाया चित्र, व्यक्तिचित्र इ.
- \* छात्र अपने प्रधानाचार्य के प्रमाणपत्र के साथ अपना चित्र प्रदर्शनी में दें।

अंतिम तिथि - 30 नवंबर 2022

संपर्क करें - श्री. मधुकर सावंत (चित्रकला शिक्षक)  
विवेक विद्यालय, मलाड (प.)  
मुंबई।

टेलीफोन - 0222xxxxxxxx

### उपक्रम

#### (1) हिंदी सुविचार -

- \* दूसरों को सहयोग देना ही उन्हें अपना सहयोगी बनाना है।
- \* स्वास्थ्य सबसे बड़ी दौलत है,  
संतोष सबसे बड़ा खजाना है,  
आत्मविश्वास सबसे बड़ा मित्र है।
- \* हार और जीत हमारी सोच पर निर्भर है,  
मान लिया तो हार और ठान लिया तो जीत !
- \* मंजिल मिले ना मिले यह तो मुकद्दर की बात है,  
हम कोशिश भी ना करें यह तो गलत बात है।
- \* खुशनसीब हैं वे जो वतन पर मिट जाते हैं,

मरकर भी वे अमर हो जाते हैं।

- \* जननी जन्मभूमि स्वर्ग से महान है।
- \* परहित सरिस धरम नहिं भाई।  
परपीड़ा सम नहिं अधमाई ॥
- \* आलस्य मनुष्य का सबसे बड़ा शत्रु है।
- \* निज भाषा उन्नति है, सब उन्नति को मूल।
- \* अनेकता में एकता है, हिंद की विशेषता।
- \* फूल सुगंध दे झरे बरस गए बादल जलभरे,  
वही मनुष्य मनुष्य है जो मनुष्य के लिए मरे।
- \* गया वक्त लौटकर कभी नहीं आता।
- \* लहरों से डरकर नौका पार नहीं होती,  
कोशिश करने वालों की कभी हार नहीं होती।

#### (2) मुख्य समाचारों का लिप्यंतरण -

- \* टीम इंडिया खेलेगी चैम्पियंस ट्रोफी में  
**लिप्यंतरण** - Team India Khelegi Chaimpiyans trofee men.
- \* राजस्थान की वाइल्ड लाइफ सेंचुरीज पर वन्यजीवों से छेड़छाड़ की निगरानी होगी।  
**लिप्यंतरण** - Rajasthan kee wild life centuries par vanyajeevон se chedachad kee nigrani hogi.  
इस तरह लिप्यंतरण कीजिए।

#### (3) \* मातृभाषा के पाँच वाक्यों का हिंदी में अनुवाद -

(i) God helps those who help themselves.

**अनुवाद** : भगवान उन्हीं की मदद करते हैं जो स्वयं की मदद करते हैं।

(ii) Time & tide wait for none.

**अनुवाद** : समय और लहरें किसी की प्रतीक्षा नहीं करते।

(iii) "There is no word 'impossible' in my dictionary" said Napoleon.  
 अनुवाद : नेपोलियन ने कहा था, “ ‘असंभव’ यह शब्द मेरे शब्दकोष में नहीं है।”

(iv) Every day may not be good but there is something good in every day.  
 अनुवाद : हर दिन शायद अच्छा न हो परंतु हर दिन में कुछ न कुछ अच्छा होता ही है।

(v) A man is known by the company he keeps.  
 अनुवाद : मनुष्य की पहचान उसके साथ रहने वाले लोगों से होती है।

(4) विद्यार्थी स्वयं करें।

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## General Science

### Topic 6 : Measurement of Physical Quantities

**Q.1. (A)** (1) To express the magnitude of a physical quantity, a value and a unit are used.  
 (2) A quantity that can be completely expressed by its magnitude alone, is called a scalar quantity.  
 (3) The quantity that is expressed completely only when magnitude and direction both are given is called a vector quantity.  
 (4) The amount of matter contained in a substance is called its mass.  
 (5) Mass is the qualitative measure of the inertia of an object.  
 (6) The gravitational force that acts on an object is called the weight of the object.  
 (7) The unit of time in MKS and CGS system is second.  
 (8) Centimetre is the unit of distance in CGS system.  
 (9) Speed is the ratio of the quantities 'distance' and 'time'.  
**(B)** (1) Time is a scalar quantity.  
 (2) Weight is a vector quantity.  
 (3) Unit of displacement in MKS system is m.  
 (4) 1 cubic foot is 28.317 litres.  
**(C)** (1) False (2) True (3) False (4) False  
 (5) True (6) False (7) True  
**(D)** (1) Kilometre (2) Area (3) Speed (4) Weight  
**(E)** (i)-(c), (ii)-(e), (iii)-(a), (iv)-(b), (v)-(d).

**Q.2. (A) (1) Physical quantities :** Quantities such as mass, weight, distance, speed, temperature, volume, which are measured are called physical quantities.

**(2) Fundamental quantities :** The quantities that need to be standardised and have their own independent existence are called fundamental quantities.

**(3) Standard units :** The units of fundamental quantities are called standard units.

**(4) Vector quantity :** The quantity that is expressed completely only when its magnitude and direction both are given is called a vector quantity.

**(B)**

	<b>Mass</b>	<b>Weight</b>
<b>(i)</b>	Mass is the amount of matter contained in a substance.	<b>(i)</b> Weight of an object is the gravitational force acting on the object.
<b>(ii)</b>	It does not change from place to place anywhere on the earth.	<b>(ii)</b> It is different at different places on the earth.
<b>(iii)</b>	Mass is a scalar quantity.	<b>(iii)</b> Weight is a vector quantity.
<b>(iv)</b>	Unit of mass in MKS system is kg and in CGS system is gm.	<b>(iv)</b> Unit of weight in MKS system is $\text{kg} \cdot \text{m/s}^2$ and in CGS system is $\text{gm} \cdot \text{cm/s}^2$
<b>(v)</b>	Mass is measured using a beam balance or equiarm balance.	<b>(v)</b> Weight is measured using a spring balance.

**Q.3. (A) (1)** (i) Measurements made by using the parts of the body will differ from person to person, due to the difference in the size of body parts.

(ii) Different results will be obtained when the same thing is measured by different people.

(iii) Since measurements made by using parts of body will neither be accurate nor uniform, it is not proper to measure quantities by using body parts as units.

**(2)** (i) Many a times when we buy different commodities, we may not get the correct quantity for which we have paid and we are at a loss.

(ii) In order to ensure that we get the correct quantity of the commodity and are not cheated during the transaction, it is necessary to get the weights and measures standardised at regular intervals.

**(3)** (i) Quantities which are independent of any quantity or are not related to other quantities are called fundamental quantities.

(ii) Speed is a ratio of two quantities, i.e. distance and time.

(iii) Since speed is related to other quantities, it is not a fundamental quantity.

**(B) (1)** A physical quantity which can be completely described by its magnitude alone is called a scalar quantity. For example, when we say that the mass of a body is 100 grams, the length of a tunnel is 2 kilometres, only magnitude i.e., their value 100 or 2 and the units grams and kilometres give us the complete idea of mass of the body and length of the tunnel respectively.

**(2)** The quantity that is expressed completely only when

magnitude and direction both are given is called a vector quantity.

For example, suppose an object covers a distance of 20 km. To know where exactly the object is, i.e., its displacement, its direction should be mentioned. If the direction is north, then the displacement of the object will be 20 kilometres towards the north direction.

**Q.4. (1)** The weight of an object is the gravitational force acting on that object. Gravitational force of different planets is different, therefore gravitational force exerted by different planets on the same object will be different and hence the weight of the same object is different on different planets.

**(2)** Atomic clocks are the most accurate time and frequency standards known and are used as primary standard for international time distribution services to control the wave frequency of television broadcasts and in global navigation satellite systems such as GPS. In India, it is kept in National Physical Laboratory, New Delhi.

**(3)** The distance travelled by light in  $1/299,792,458$  of a second is considered as a metre. Thus, for determining a standard metre, the velocity of light is used.

**Q.5. (A)**

- (1)** (i) Weight of a body is the gravitational force exerted by the earth on the body.
- (ii) The shape of the earth is not perfectly spherical. It is slightly flattened at the poles and bulges at the equator.
- (iii) So, the radius of earth at the poles is less than that at the equator.
- (iv) Gravitational force depends upon the earth's

radius and it is inversely proportional to the radius of the earth.

- (v) Since the radius of earth is minimum at poles and maximum at equator, the gravitational force at poles will be maximum and minimum at the equator.
- (vi) Hence, weight of an object is maximum at poles and minimum at equator.

**(2)** (i) Weight of an object is the gravitational force acting on the object by the earth.

(ii) Gravitational force is inversely proportional to the distance from the centre of the earth.

(iii) At higher altitudes, the distance from the centre of earth is more than that at the sea-level. Hence, the gravitational force at higher altitude is less than that at the sea-level.

(iv) Therefore, the weight of an object at a high altitude is less than its weight at the sea-level.

**(3)** The precautions to be taken to make accurate measurements in everyday life are :

- (i) The device used for measurement must be properly functioning.
- (ii) For achieving high accuracy in measurement, 3-4 readings should be taken.
- (iii) The device must have the stamp of standardisation by the Department of Weights and Measures.
- (iv) The appropriate device must be used.

**(B)** Wrong methods of measurement are shown in figures 1, 2 and 3. In fig.1, a 'hand-span' is used for measurement.

The measurement would differ from person to person, as the size of span of a hand is different for different persons and the measurement will not be accurate.

In fig. 2, there is no scale marked on the glasses, so we will not know the exact volume of liquid transferred.

In fig. 3, the measurement is not taken from the initial or zero marking of the scale, so the person may take a wrong measurement.

**(C) (1)** Accuracy in measurement of a thing depends upon its purpose and value.

- (i) The mass of things like cloves, cardamoms, gold and silver which are costly and are used in small quantities is measured with great care and accuracy.
- (ii) To measure such things, small units and very sensitive instruments like a sensitive electronic balance are used. If they are not measured accurately, it will result in great loss.
- (iii) During chemical analysis or preparation of medicines, when proportions of constituents have to be determined as accurately as possible, sensitive devices are required like standard measuring flask or measuring cylinders or sensitive balance.
- (iv) While drawing a geometrical figure, drawing a map or while making machine parts that must fit into one another, a difference of even a single millimetre cannot be tolerated, as even a small error will hinder the functioning in case of machines. Similarly, while drawing geometrical figures and maps, we will not get the exact figures.

(v) During prestigious sports events, difference of a time interval of even a fraction of a second is important when deciding the winner of a neck and neck race. In such cases, the measurement of time should be very accurate, which requires a sensitive timer which can give the accurate time.

**(2) The main causes of errors in measurements are :**

- (i) Not using the appropriate device.
- (ii) Not using the device properly.

Things to be observed while buying from grocery shops or at vegetable markets, so that you don't get cheated.

- (i) Whether the balance carries the stamp of standardization by the department of weights and measures.
- (ii) Whether the balance is stable and whether the pointer of the balance is upright or not.
- (iii) Whether the weight is made up of a metal and the balance is held properly.
- (iv) Whether the underside of the pan of the balance has been tampered or not.

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### Topic 7 : Motion, Force and Work

**Q.1. (A) (1)** If a body traverses a distance in direct proportion to the time, the speed of the body is **constant**.

**(2)** If a body is moving with a constant velocity its acceleration is **zero**.

**(3)** **Speed** is a scalar quantity.

**(4)** **Velocity** is the distance traversed by a body in a particular direction in unit time.

**(B)** (1) A change in the shape or motion of an object occurs if force acts on it.  
 (2) When a body returns to the starting point, then its displacement will be zero.  
 (3) Velocity is a vector quantity.  
 (4) The shortest distance between the initial and final point of movement of an object is called displacement of the object.  
 (5) The velocity of an object at a particular moment of time along a path in which it moves is called instantaneous velocity.

**(C)** (1) The CGS unit of energy is Erg.  
 (2) Force = mass x acceleration  
 (3) Acceleration = change in velocity/time.  
 (4) If no force of friction is acting on a moving body, it will keep on moving with a constant velocity.  
 (5) If a body of mass 1000 gm moves with an acceleration of  $2 \text{ m/s}^2$ , then the force acting on the body is 2 N.

**(D)** (1) False      (2) True      (3) True      (4) False

**(E)** (1) Displacement      (2) Erg      (3) Speed

**(F)** (1)

Group A	Group B	Group C
Work	Joule	erg
Force	Newton	dyne
Displacement	Metre	cm

**Q.2. (A)** (1) **Work** : Work is defined as the product of force and displacement.  
 (2) **Displacement** : The minimum distance traversed by a moving body in one direction from the original point to reach the final point, is called displacement.  
 (3) **Velocity** : Velocity is the distance traversed by a body in a specific direction in unit time.

**(4) Acceleration** : The rate of change of velocity is called acceleration.

**(OR)** The change in velocity per unit time is called acceleration.

**(B)** (1)

	Distance	Displacement
(i)	Distance is the length of the path actually traversed by a moving body.	(i) Displacement is the minimum distance traversed by a moving body from the original point to the final point.
(ii)	Distance is a scalar quantity.	(ii) Displacement is a vector quantity.

**(2)**

	Speed	Velocity
(i)	Speed is the distance covered by a body in unit time.	(i) Velocity is the distance traversed by a body in specific direction in unit time.
(ii)	Speed is a scalar quantity.	(ii) Velocity is a vector quantity.

**(3)**

	Velocity	Acceleration
(i)	Velocity is displacement of a body in unit time.	(i) Acceleration is the change in velocity per unit time.
(ii)	The formula for velocity is given as $\text{Velocity} = \frac{\text{Displacement}}{\text{Time}}$	(ii) The formula for acceleration is given as $\text{Acceleration} = \frac{\text{Change in velocity}}{\text{Time}}$
(iii)	Unit of velocity in MKS system is $\text{m/s}$ and in CGS system is $\text{cm/s}$ .	(iii) Unit of acceleration in MKS system is $\text{m/s}^2$ and in CGS system is $\text{cm/s}^2$ .

**Q.3. (1)** (i) According to Newton's first law of motion, if no force is acting on a body, the body will continue to move with a constant velocity and in the same direction.

(ii) When talcum powder is applied on a carrom board while playing, the friction between the carrom board and the coin reduces.

(iii) As force of friction acting on the moving coin reduces, it continues to move for a longer time if talcum powder is applied on the carrom board.

**(2)** (i) Displacement is the minimum distance traversed by a moving body from the original point to the final point of movement.

(ii) When a body comes back to its original position after covering certain distance, the displacement between the original point to its final point of movement is zero.

(iii) Hence, displacement of an object can be zero even if its distance is not zero

**(3)** (i) Vector quantities are quantities which can be described only if both magnitude and direction are mentioned.

(ii) To move anything, we should know how much force is required i.e., the magnitude of the force.

(iii) Moreover, to move the object to a specific position, we should also know in which direction force has to be applied.

(iv) Thus, to describe force completely, both magnitude as well as direction are required.

(v) Hence, force is a vector quantity.

**Q.4. (A)** (1) Motion is the continuous change in the position of an object with respect to the observer.

(2) Force acting on an object causes a change in its motion, as it can change the speed, direction or can even bring the object to rest.

(3) Speed is the distance covered by a body in unit time.

(4) Formula for calculating speed is :

$$\text{Speed} = \frac{\text{Distance traversed}}{\text{Total time}}$$

(5) When a body is moving along a straight line, velocity of the body can change. The velocity of the body at a particular moment of time is called instantaneous velocity.

(6) Yes, force is also a vector quantity as it requires both magnitude and direction to be described.

**(B)** (1) **Force :** A football placed on a ground will not move until and unless it is kicked i.e. a force is applied to the ball. The moving football after some time will come to rest due to force of friction between the ground and the ball. The direction of the moving ball can be changed if it is hit from a different direction. When its direction changes, the velocity of the ball also changes. When the velocity changes, the body is said to have acceleration. The interaction that brings about the acceleration is called force. Force is a physical quantity which changes or tends to change the state of rest or uniform motion of an object in straight line.

(2) **Work :** By sitting and completing the homework for a long time, we may become tired and feel that we have done a lot of work. In this case no work is

said to be done, as there is no displacement. But while playing football, work is done as there is displacement seen in the football due to the force applied. So work is said to be done only if the object to which force is applied is displaced. Work done depends on both force and displacement. Hence, work is a product of force and displacement.

**(3) Displacement :** When we have to reach a particular destination, there can be different routes to reach that place. The length of the route will be either short or long. In this case, the shortest distance to reach the destination has to be considered as displacement. Now if we come back to the original place from where we started, then the displacement will become zero.

So, displacement is the minimum distance traversed by a moving body in one direction from the original point to reach the final point.

**(4) Velocity :** If a car is moving with a speed of 80 km/hr, after certain time, it will be difficult for us to know where exactly the car is. But if it is mentioned that the car is headed towards Pune, we can know the location of the car. If speed is mentioned with direction, we can find the velocity. So, velocity is the distance traversed by a body in a specific direction in unit time.

**(5) Acceleration :** While riding a bicycle with certain velocity, you start pedalling the bicycle faster to attain a maximum velocity, if the road is clear. But if there is traffic, then you have to slow down the bicycle or may have to stop the bicycle. Here the velocity of the bicycle does not remain same. As the velocity goes on changing, we say that acceleration takes place.

So, acceleration is the change in velocity per unit time.

**(6) Distance :** Suppose your school is at a distance of 2 km. from your home. The total length of the path you have travelled from your home to school and then back home will be  $2\text{ km} + 2\text{ km} = 4\text{ km}$ . So, the distance covered by you will be 4 km.

Hence, distance is the length of the route actually traversed by a moving body irrespective of the direction.

**(C)** The total distance travelled by the bird is the length of the complete circular path that it takes. Whereas its displacement is zero as the bird comes back to its initial position from where it took its flight.

**Q.5. (A) (1)** The actual distance traversed by Sachin and Sameer =  $AB + BC + CD + DE$

$$\begin{aligned} &= 3\text{ km} + 4\text{ km} + 5\text{ km} + 3\text{ km} \\ &= 15\text{ km} \end{aligned}$$

Displacement from A to E =  $AB + BD + DE$

$$\begin{aligned} &= 3\text{ km} + 3\text{ km} + 3\text{ km} \\ &= 9\text{ km} \end{aligned}$$

Total time taken = 1 hr.

$$\text{Speed} = \frac{\text{Total distance}}{\text{Total time}} = \frac{15\text{ km}}{1\text{ hr}} = 15\text{ km/hr.}$$

$$\text{Velocity from A to E} = \frac{\text{Total displacement}}{\text{Total time}} = \frac{9\text{ km}}{1\text{ hr}} = 9\text{ km/hr.}$$

∴ The total distance traversed by Sachin and Sameer = 15 km.

Displacement = 9 km, speed = 15 km/hr and velocity = 9 km/hr.  
Yes, the velocity is average velocity.

**(2)** Speed of the ball at B (Initial velocity) = 2 cm/s

Speed of the ball at C (Final velocity) = 4 cm/s

Time taken = 2 seconds

$$\text{Acceleration} = \frac{\text{Change in velocity}}{\text{Time taken for change}}$$

$$\text{Acceleration} = \frac{\text{Final velocity} - \text{Initial velocity}}{\text{Time taken}}$$

$$= \frac{4 \text{ cm/sec} - 2 \text{ cm/sec}}{2 \text{ sec}}$$

$$= 1 \text{ cm/s}^2$$

**Ans.** The acceleration of the ball as it goes from B to C is  $1 \text{ cm/s}^2$ .

**(B) (1)**

- (i) Total distance travelled =  $120\text{m} + 120\text{m} = 240\text{m}$
- (ii) Displacement = 0 (as the body returns to its initial position)
- (iii) Average speed =  $\frac{\text{Total distance travelled}}{\text{Total time taken}}$
- (iv) Average velocity = 0  
(since the displacement is zero)

$$= \frac{240}{10} \text{ m/s} = 24 \text{ m/s}$$

**(2) Given:** Mass (m) = 25 kg

$$\text{Acceleration (a)} = 1.2 \text{ m/s}^2$$

$$\text{Force (F)} = ?$$

$$\text{Force} = \text{mass} \times \text{acceleration}$$

$$F = ma$$

$$= 25 \text{ kg} \times 1.2 \text{ m/s}^2$$

$$= 30 \text{ kg.m/s}^2$$

$$= 30 \text{ Newton}$$

**Ans.** Force applied on the object is 30 Newton.

**(3) Given:** Force (F) = 1000 N

$$\text{Displacement (s)} = 10 \text{ m}$$

$$\text{Work done (W)} = ?$$

$$\text{Work} = \text{Force} \times \text{Displacement}$$

$$W = F \times s$$

$$= 10000 \text{ N} \times 10 \text{ m}$$

$$= 10000 \text{ N.m}$$

$$= 10000 \text{ Joule}$$

**Ans.** The work done to stop the moving car is 10000 Joule.

**(4) Given :** Mass of cart (m) = 20 kg

$$\text{Force (F)} = 2 \text{ N}$$

$$\text{Displacement of cart (s)} = 50 \text{ m}$$

$$\text{Work done (W)} = ?$$

$$\text{Work} = \text{Force} \times \text{Displacement}$$

$$W = F \times s$$

$$= 2 \text{ N} \times 50 \text{ m}$$

$$= 100 \text{ N.m}$$

$$= 100 \text{ Joule}$$

**Ans.** Work done by the force was 100 Joule.

**Q.6 (A) (i)** Acceleration is the change in velocity per unit time.

**(ii)** The formula of acceleration is

$$\text{Acceleration} = \frac{\text{Change in velocity}}{\text{Time}}$$

**(iii)** The unit of velocity in MKS system is m/s, whereas that of time is second.

**(iv)** So, the unit of acceleration will be

$$\frac{\text{m}}{\text{s}} : \text{s} \quad \frac{\text{m}}{\text{s}} \times \frac{1}{\text{s}} \quad \frac{\text{m}}{\text{s}^2}$$

**(v)** Therefore, unit of acceleration is  $\text{m/s}^2$ .

**(B) (i)** The force due to the weight is applied on the wooden block.

**(ii)** Force can be increased by increasing the weight.

**(iii)** On applying more force, the displacement of the wooden block will increase.

**(iv)** When there is displacement in the wooden block due to the applied force, work is said to be done.

## Topic 8 : Static Electricity

**Q.1. (A)** (1) There is **always repulsion** between like charges.  
(2) **Displacement of negative charge** is responsible for generation of electric charge in an object.  
(3) A lightning conductor is made of a **copper** strip.  
(4) **Steel** does not get electrically charged easily by rubbing.  
(5) There is **always attraction** when opposite electric charges come near each other.  
(6) A **charged object** can be detected with an electroscope.

**(B)** (1) An atom is electrically **neutral**.  
(2) When glass rod is rubbed against silk, **positive** charge is developed on glass rod.  
(3) **Unlike** electric charges attract each other.  
(4) The ozone gas protects us from the harmful **ultra violet** rays coming from sun.

**(C)** (1) - (c), (2) - (a), (3) - (d), (4) - (b).

**(D)** (1) copper rod (2) ebonite rod (3) silk cloth

**(E)** (1) Electroscope (2) Lightning conductor  
(3) Atoms  
(4) Protons (positive charged particles), electrons (negative charged particles), neutrons (neutral particles)

**Q.2. (1)** **Repulsion** : When two similar charged objects are brought near, they move away from each other. This is called repulsion.  
**(2)** **Attraction** : When two oppositely charged objects are brought near, they get pulled towards each other. This is called attraction.

**(3)** **Frictional electricity** : The electric charge generated by friction is called frictional electricity.

**Q.3. (A)** (1) When the positive charge and the negative charge in the object are not balanced, i.e. they are not equal in number, then the object is said to be charged.  
(2) If the objects carry similar charges (like charges), they will repel and if the objects carry opposite charges (unlike charges), then they will show attraction.  
(3) No, all objects do not get charged by rubbing. Most of the insulators, which are bad conductors, can be charged by rubbing. E.g., glass rod, ebonite rod, plastic scale.  
(4) A charged object can attract an uncharged object. Since the balloon is charged, it attracts the uncharged wall when it is brought near the wall. So the charged balloon sticks to the wall.  
(5) Lightning strike can set trees on fire and shatter buildings. It can kill people and animals.  
(6) Tall buildings are fitted with lightning conductor to prevent the possible damages caused by lightning.  
(7) The lightning conductor is a device used for protection from a lightning strike. Its upper end is pointed so that the charge gets concentrated at a particular place when lightning strikes and can be easily and quickly carried towards the ground. This prevents any damage to the property.  
(8) Coal is porous and absorbs the salt water. It keeps the surrounding area conductive. This helps to spread the electric charge during lightning strike

quickly into the ground and prevents damage. So, coal and salt are added to the pit in the ground where the lightning conductor is fitted.

(9) Yes, we can use leaves of other metals like aluminium instead of gold in the electroscope. The metal should be such that it can be beaten into extremely thin leaves, so that it can detect even a very small charge.

(B) (1) A plastic comb or ruler rubbed on dry hair develops charge. Due to the charge developed on a plastic comb or ruler, they attract pieces of paper.

(2) When we pass near a polyester curtain again and again, opposite charges are developed on our body and the polyester curtain due to rubbing. So, the curtain gets attracted towards us.

(3) When we rub a blanket with our hands, the blanket develops negative charge. When this charged blanket is taken near a metal object, the negative charge from the blanket flows to the metal. That is why a spark is seen in the dark when a charged blanket is brought near a metal object.

#### Q.4. (A)

Charging by contact		Charging by induction	
(i) The process of charging a body by actually touching a charged body is called charging by contact.	(i) The process of charging a body by keeping it near (without touching) a charged body is called charging by induction.		
(ii) In this, charge moves from charged body to the uncharged body.	(ii) In this, no charge flows from the charged body to the uncharged body.		

(iii) In charging by contact, some charge is lost by charged body.	(iii) In charging by induction, no charge is lost by the charged body.
(iv) Charge developed on the uncharged body by contact remains even when the charged body is removed.	(iv) Charge developed on the uncharged body by induction is lost as soon as the charged body is removed.

(B) (1) (i) All substances are made up of particles and these particles are made up of very tiny atoms.

(ii) An atom contains stationary positively charged and moving negatively charged particles.

(iii) These two charges are equal in number, so they are balanced in an atom.

(iv) As the charges are balanced in an atom, no net charge is there on the atom.

(v) Hence, an atom is electrically neutral.

(2) (i) Charge cannot be developed on metals as they are good conductors.

(ii) If the objects are good conductors of electricity, the charges will spread over their entire body and attraction will not be seen, when they are brought near uncharged objects.

(iii) Since copper is a metal and a good conductor, charge cannot be developed on a copper rod.

(3) (i) If an electrically charged object attracts another object, then the other object may be either uncharged or oppositely charged, as unlike charges attract each other.

(ii) Whereas if an electrically charged object shows repulsion, then surely the other object

will be having charge similar to the electrically charged object, as like charges repel each other.

(iii) Since repulsion is seen between like charges, it is a sure test of electric charge.

**Q.5. (A) (1)** When thermocol balls or mustard seeds in a bottle are shaken vigorously, the seeds try to move away from each other, and stick to the bottle.

**Reason :** When thermocol balls or mustard seeds in a bottle are shaken, they develop like charges, whereas the bottle develops opposite charge. Hence, thermocol balls or mustard seeds try to move away from each other, but stick to the bottle. This is because like charges repel each other and unlike charges attract each other.

**(2)** When a spent tubelight kept in dark is rubbed vigorously with a thin polythene bag, sparks are seen.

**Reason :** As the tubelight is rubbed vigorously, it develops static electricity and gets charged. Tubelight and polythene bag develop opposite charges. As they get charged and attract each other, sparks are seen in the dark.

**(3)** When an uncharged aluminium ball is brought near a negatively charged balloon, it gets attracted to the balloon and comes in contact with it. Then after some time, the aluminium ball and balloon repel each other.

**Reason :** When an uncharged aluminium ball is brought near a negatively charged balloon, an opposite charge is developed and both get attracted to each other. On touching, both become

similarly charged and repel each other as like charges repel each other.

**(B) (1)**

- (i) All objects are electrically neutral.
- (ii) But due to certain reasons like rubbing, the balance of electrically neutral atoms gets disturbed.
- (iii) When certain objects are rubbed against each other, the negatively charged particles on one object are transferred to the other object.
- (iv) The objects to which the charges are transferred become negatively charged due to an excess of negative charged particles.
- (v) Similarly, the object from which the negatively charged particles get transferred become positively charged due to deficiency of negatively charged particles.
- (vi) Therefore, when two substances are rubbed, one becomes positively charged and the other, negatively charged.

**(2)** The following steps should be taken for protection from lightning :

- (i) As far as possible one should try to remain indoors during lightning.
- (ii) When you are inside your house, avoid using corded landline phones.
- (iii) Do not use appliances that are plugged to the wall like television, air conditioner, computer.
- (iv) Avoid standing on wet surfaces.
- (v) Do not stand near windows or in a balcony having metallic railings.

- (vi) If you are outside your house, do not stand under tall trees, isolated trees, on open ground, near an electric pole or a telephone pole.
- (vii) If you are on a two-wheeler, a bicycle, a tractor or a boat, get off immediately and go to a safe place.

**(3)**

- (i) A lightning conductor is a device used for protection from a lightning strike.
- (ii) It consists of a long copper strip with one end forked, which is placed at the highest part of the building and the other part is connected to a plate of cast iron.
- (iii) A pit is dug in the ground, coal and salt are filled into the pit and the iron plate is placed upright in the pit.
- (iv) There is also a provision for pouring water into it.
- (v) All the above provisions help to spread the electric charge quickly into the ground and prevent damage.

**(4)**

- (i) During rainy seasons, there are chances of lightning.
- (ii) In open fields, lightning can prove to be dangerous for a person, if it strikes.
- (iii) Iron staff stuck in the ground by the farmers while working in fields in rainy conditions acts as a lightning conductor.
- (iv) If lightning strikes in the field, the electric charge will pass through the iron rod to the ground quickly and thus can prevent any injury to the farmer.

(v) Therefore, farmers stick an iron staff into the ground while working in the field in rainy conditions.

**(5)**

- (i) Lightning occurs only when the negative charge developed on the bottom of the cloud is much larger than the charge on the ground.
- (ii) This charge starts flowing towards the ground in very fast stages and heat, light and sound energy are produced along with the electric current.
- (iii) This condition does not occur everyday during the rainy season, and hence lightning is not seen everyday in the rainy season.

**(6)** The characteristics of a static electric charge are :

- (i) Electrically charged objects attract uncharged objects.
- (ii) Like electric charges repel each other.
- (iii) Unlike electric charges attract each other.

**(7)** Damage caused by lightning :

- (i) Lightning, if it strikes a person, can cause permanent injuries, severe burns and can also be fatal.
- (ii) It can destroy buildings, monuments, trees and can cause fire and damage property.
- (iii) Telephones, computers, television and other electric devices can be damaged by lightning.

To create awareness, people should be told about the various damages caused by lightning and the precautions to be taken through various media like television, newspapers, etc.

(8) I will take the following measures to prevent the damages caused by lightning :

- (i) On hearing a thunder, I will avoid standing near a tall tree, electric pole, high-rise building or any metallic structure.
- (ii) I will rush to a safe place such as low-rise house or a building.
- (iii) If I am travelling by a bus or a car, I will stay inside and will shut the windows of the vehicle.
- (iv) If I am inside the house, I will unplug the electronic devices like television set, computer etc. and will not use the corded phone.
- (v) I will avoid contact with running water.
- (vi) I will not stand near windows or in balcony having metallic railings.
- (vii) I will also see to it that the building/house where I stay is fitted with a lightning conductor.

(9) (i) When air and clouds rub against each other, clouds get charged and when a large amount of charge is developed in the clouds, it starts flowing towards the ground, which is seen as lightning.

- (ii) During heavy rain, there is generally lightning or thunder.
- (iii) When we go out with an umbrella during heavy rain, if there is lightning or thunderstorm, an umbrella can increase the chances of being hit by lightning.
- (iv) The electric discharge can pass through the metallic rod of the umbrella and can give a severe shock to the person carrying it.

- (v) So, it is not safe to go out with an umbrella when there is heavy rain, lightning or thunder.

(10) (i) When there is lightning in the sky, the negative charge that is developed on the bottom of the clouds in large amount starts flowing towards the ground in stages.

- (ii) This happens very fast and heat, light and sound energy are produced along with the electric charge.
- (iii) During lightning strike, when an electrically charged cloud comes over a tall building or a tree, it generates opposite charge on the roof of the building or on the top of the tree by induction.
- (iv) If the charge built up is large, it leads to an electric discharge in the form of light streak towards the building.
- (v) This can shatter buildings or set a tree on fire.

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### Topic 9 : Heat

Q.1. (A) (1) Maximum heat is absorbed by a **black** coloured object.

(2) **Radiation** of heat does not require a medium.

(3) Conduction of heat takes place through a **good conductor** substance.

(4) The shining surface in a thermos flask decreases the outgoing heat by **reflection**.

(5) Cooking utensils are made from metals due to their property of **conduction**.

(6) The earth receives heat from the sun by **radiation**.

**(B) (1)** Temperature of a substance is measured by a **thermometer**.

**(2)** Mode of transfer of heat from the hot part of an object to the cold part is called **conduction** of heat.

**(3)** Heat is conducted quickly through **copper** than through iron.

**(4)** The density of water **decreases** due to heating.

- **(C)** (1 - c); (2 - d); (3 - b); (4 - a); (5 - e)
- (D)** (1) Reflection (2) Glass (3) Mercury (4) Lead
- (E)** (1) Thermometer (2) Black (3) Thermos flask (4) Thermoware (5) Radiation (6) Infrared camera

**Q.2. (A) (1) Temperature :** The degree of hotness or coldness of a substance is called temperature.

**(2) Good conductor :** A substance which allows heat to flow easily through it is called a good conductor.

**(3) Bad conductor :** A substance which does not allow heat to flow easily through it is called a bad conductor.

**(4) Infrared camera :** A camera that has been developed to use heat radiations from objects to making the surroundings visible at night is called an infrared camera.

**(5) Conduction :** The mode of transfer of heat from the hot part of an object to the cold part is called conduction of heat.

**(B) (1)**

	<b>Conduction</b>	<b>Convection</b>
<b>(i)</b>	Mode of transfer of heat from the hot part of an object to the cold part of the object is called conduction of heat.	<b>(i)</b> Mode of transfer of heat by means of convection currents set because of movement of particles is called convection of heat.
<b>(ii)</b>	It generally takes place through solids.	<b>(ii)</b> It takes place through liquids and gases.

**(2)**

	<b>Convection</b>	<b>Radiation</b>
<b>(i)</b>	In convection, medium is necessary.	<b>(i)</b> In radiation, no medium is necessary.
<b>(ii)</b>	Convection currents set due to the movement of particles.	<b>(ii)</b> Particles are not involved in transfer of heat.
<b>(iii)</b>	It takes place through liquids and gases.	<b>(iii)</b> It takes place through vacuum.

**Q.3. (A) (1)** Solar heat reaches the earth by radiation.

**(2)** The flow of heat from a hot body to a cold body is called transfer of heat.

**(3)** Once the water heated to boiling is taken off the flame, the supply of heat to the boiling water stops. So the temperature of the water starts decreasing i.e. the heat in the water heated to boiling slowly decreases. This heat goes to the surroundings which are at a lower temperature, as transfer of heat takes place from hot body to cold body.

**(4)** The modes of heat transfer are conduction, convection and radiation.

(5) The ability of a substance to absorb heat radiation depends on its colour and also its intrinsic properties.

(6) During fever, a patient's body temperature goes up. When a cold compress is placed on his forehead, heat is transferred from his body to the cold compress. So fever gets lowered by putting a cold compress on the forehead of a patient.

(7) The houses in Rajasthan are painted white because the climate of Rajasthan is very hot. White colour reflects maximum heat radiation, so it does not become very hot inside the house.

(8) The penguins of Antarctica have black outer coat because black colour absorbs maximum heat radiations, which keeps them warm and protects them from the severe cold climate of the region.

**(B)**

(1) (i) Glass is a poor conductor of heat and its inner and outer walls expand unequally when they are heated.  
(ii) So, when boiling water is poured into an ordinary glass bottle, the inner walls of the glass expand rapidly as compared to the outer walls due to unequal distribution of heat and the glass bottle cracks.  
(iii) But borosil glass bottles are made in such a way that they can withstand high temperature.  
(iv) So, they expand very little when boiling water is poured into them and thus do not crack.

(2) (i) Telephone wires are made up of metal.  
(ii) During summer, they absorb heat from the surroundings and expand, so they sag in summer.

(iii) In winter, when the temperature of the surroundings goes down, the wires contract.  
(iv) Hence, due to contraction, the wires which sag in summer become straight in winter.

(3) (i) Atmosphere contains water vapour.  
(ii) Its capacity to hold water vapour depends upon the temperature of the surroundings.  
(iii) During winter, the temperature of the surroundings goes down.  
(iv) So, the water vapour in the atmosphere condenses to form water droplets which settle on the cold surface of the grass.  
(v) Hence, dew drops form on the grass, in winter.

(4) (i) Iron is a good conductor of heat and wood is a bad conductor of heat.  
(ii) When iron pillar is touched in winter, iron being a good conductor of heat conducts away heat from our hand and therefore it appears to be cold.  
(iii) But wood being bad conductor of heat does not conduct heat away from our hand and therefore the wooden pole appears not to be as cold.

(5) (i) Glass or China clay are bad conductors of heat, whereas steel or copper are good conductors of heat.  
(ii) Therefore, glass tumbler or China cup full of hot tea does not transfer the heat to our hand, whereas steel or copper cup transfers the heat from the hot tea and hence we can hold a glass tumbler or China cup full of hot tea easily in

our hand, but not a steel or copper cup with hot tea.

**Q.4. (1)** (i) Spoons are generally made up of metals and metals are good conductors of heat.

(ii) While stirring hot substances, the heat is slowly transferred from the hot end of the spoon to the cold end.

(iii) This can burn the hand of the person holding it.

(iv) So, in order to prevent getting burned, the halwai wraps up cloth around the end of his slotted spoon while stirring the boiling milk in his large kadhai.

**(2)** (i) The moment hot milk is poured into the steel glass, it becomes very hot as steel is a good conductor of heat.

(ii) This can burn the hand of the person holding it.

(iii) Handkerchief is a bad conductor of heat, it prevents the transfer of heat to our hands and thus protects us from burning our hand.

(iv) Hence, we hold a steel glass in a handkerchief while drinking hot milk from it.

Other examples : The handles of cooking utensils are made up of wood or ebonite, we use cloth or a tong to remove hot vessel from the stove etc.

**(3)** (i) White coloured clothes reflect most of the heat that falls on them and we feel more comfortable wearing them in summer.

(ii) Whereas dark or black coloured clothes absorb more heat, so we feel comfortable with dark or black coloured clothes in winter.

**(4)** (i) Woollen clothes have fine pores filled with air.

(ii) Wool and air both are bad conductors of heat.

(iii) In order to prevent the transfer of heat from our body to the surroundings and to keep our body warm, we wear woollen clothes in winter.

**(5)** (i) When a railway track is laid, a small gap is always left between two sections of a railway line, so as to give some space for them to expand during summer.

(ii) The rails of railway tracks are made up of steel and they expand due to the considerable rise in the atmospheric temperature during summer.

(iii) If no gaps are left, the lines may bend and cause derailment of trains.

(iv) Similarly in case of cement concrete bridges, a gap is left as it may crack due to contraction in winter or expansion in summer.

**(6)** (i) Mercury is used in a thermometer for the following reasons:

(a) It is a shining, silvery white liquid which can be seen easily. It does not stick to the walls of the thermometer.

(b) It has uniform contraction and expansion.

(c) Its freezing point is  $-39^{\circ}\text{C}$  and boiling point is  $357^{\circ}\text{C}$ . So it can be used to measure a fairly wide range of temperature.

(ii) Alcohol is used due to following reasons.

(a) Alcohol freezes at  $-117^{\circ}\text{C}$ , so it is used for measuring very low temperatures.

(b) Expansion and contraction of alcohol are also regular.

(c) It is less hazardous than mercury.

**(7)** (i) Thermoware are containers used for keeping food hot.

- (ii) These containers are made up of two boxes fitted one inside the other.
- (iii) The outer box is made up of plastic, a bad conductor and the inner box is made up of a shiny metal.
- (iv) There is air between the two boxes, which is a bad conductor too.
- (v) Therefore, heat is neither transferred by conduction nor by convection.
- (vi) Heat is reflected by the shiny inner surface and heat loss due to radiation is also prevented.
- (vii) The lid of the container is made up of plastic, which prevents any transfer of heat.
- (viii) So the food placed in a thermoware container remains hot for a long time.

**(8) Properties of heat are :**

- (i) Heat is a form of energy.
- (ii) Heat can be transferred from a hot body to a cold body.
- (iii) It can change the state of matter.

**(9)**

- (i) The mode of heat transfer that causes sea breezes and land breezes in convection.
- (ii) During the day, the air over the land gets heated up faster than that over the sea.
- (iii) So, the air over the land becomes lighter and rises up.
- (iv) Hence, the cold air from above the sea moves towards the land. This sets up the convection current which forms sea breeze.
- (v) During the night, land cools more quickly than the sea water.

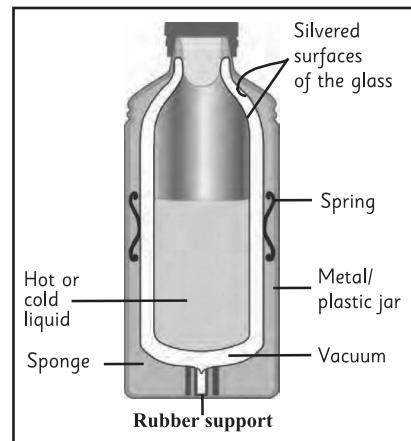
- (vi) Therefore, the air above the sea being warmer rises up and the cold air from land moves towards the sea.
- (vii) So the convection currents of cool air from land towards the sea form the land breeze.

**(10)**

- (i) Heaters are fitted near the floor so that the warm air near the heater rises up as it is lighter and the cold air from above the room comes down to take its place.
- (ii) Thus, convection currents are set up, which warm up the entire room.
- (iii) Similarly, air conditioners are fitted near the ceiling of a room, so that the cooled air from the air conditioner being heavier moves down, while the hot air from below rises up.
- (iv) Thus, a convection current is set up and the whole room is cooled quickly.

**Q.5. Structure of the thermos flask :**

The thermos flask is double-walled. It consists of two glass tubes, one inside the other with a sealed gap. A silver coating makes the surfaces of both tubes shiny. Vacuum is created by removing the air between the two tubes. There



is a protective metal or plastic jar outside the tubes. Pieces of sponge or rubber are fixed between the outer jar and the flask.

### Function of the thermos flask :

When a hot liquid is kept in a thermos flask, the heat moving out gets reflected due to the shining silver surface of the inner glass tube. Hence, heat is not radiated. Conduction and convection of heat does not occur due to vacuum. As a result, heat is not transferred to the outer cool region and is retained inside for a long time. However, the hot substance does not remain as hot after 2-3 hours.

**Q.6.** Steel spoon, glass vessel, iron griddle (tava), glass, water and wax will absorb heat.

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### Topic 10 : Disaster Management

**Q.1. (A)** (1) The condition that arises due to long term and severe scarcity of foodgrains and water is called **famine**.  
(2) A majority of the famines occurred in **drought** prone and affected regions.  
(3) A wave generated by an earthquake or volcano occurring on the ocean floor is called a **tsunami**.  
(4) An **earthquake** is a sudden violent shaking or movement of part of the earth's surface caused by the abrupt displacement of rock masses.  
(5) 13<sup>th</sup> October is the International Day for **Disaster Reduction**.

**(B)** (1) Drought can cause **all of these**.  
(2) What is not required for the severe storms to develop? **Rainfall**.  
(3) Disaster management includes **all of these**.  
(4) What is drought? **Shortage of water for an excessive period of time**.

**(5)** Which of the following is a man-made disaster?  
**Road accidents**.

**(C)** (1) Railway accident (2) Drought  
(3) Locusts (4) Volcano

**(D)** (1) False - Because storms are natural disasters and can occur due to changes in the weather.  
(2) True - Because lightning may sometimes strike the water and since water conducts electricity, nearby lightning may harm or injure the person in water, it can also be fatal.  
(3) False - It is not possible to prevent the eruption of a volcano as it is a natural event or natural disaster, it takes place when the interior of the earth is very hot.  
(4) False - Heavy rains result in flood. Famine is the condition created by some human activities besides some natural events.

**(E)** (1)-(d), (2)-(c), (3)-(b), (4)-(a).

**Q.2. (A)** (1) **Disaster** : A disaster is a sudden calamity, either natural or man-made, which causes great damage to life and property on an overwhelming scale. Normal life living is affected, and immediate assistance and relief measures are needed.  
(2) **Disaster management** : It is an applied science which seeks by the systematic observation and analysis of a disaster to improve measures relating to prevention, mitigation, preparedness, emergency response and recovery.

**(B)**

	<b>Earthquake</b>		<b>Volcano</b>
(i)	Earthquakes are caused by interaction of tectonic plates.	(i)	Volcanoes are caused by movement of magma.
(ii)	Earthquakes are vibrations or tremors that shake the earth.	(ii)	Volcanoes are fissures or vents in the earth which allow molten lava and gases to escape out on to the earth's surface.
(iii)	Earthquakes can cause damage by triggering tsunamis and landslides.	(iii)	Volcanoes can cause damage by ash flow, release of gases, mud flows, lava flows, etc.

**(C) (1)** Landslides are caused by disturbance in the natural stability of a slope. Landslides may occur at the foot hill, when masses of rock, earth or debris move down a slope. This can happen after heavy rains. Mud slides, also known as debris flows or mud flows are a common type of fast moving landslide. When we wait at the foot-hill while it is raining heavily, mudslides may sweep down a slope or we may be trapped in mudslides and this can be dangerous. Sometimes it can be fatal. Hence, we shouldn't wait at the foot-hill while it is raining heavily.

**(2)** Sometimes in cities, the rains may not be very heavy, but the drainage system is blocked with plastic bags due to which water-logging takes place. The water does not find any escape route, the levels start rising and the area gets submerged. Hence, the use of non-biodegradable waste like plastic bags contributes to flood in cities.

**(3)** As volcanoes erupt, they build up layers of lava that may eventually break the water's surface. When the top of the volcano appears above the water, an island is formed. While the volcano is still beneath the ocean surface, it is called sea movement. Thus, due to eruption of volcanoes, some islands are formed.

**(4)** Swimming during thunderstorm may increase the chance of getting struck by lightning. When lightning strikes the water, and since water may conduct electricity, a nearby lightning strike could kill or injure the person swimming in pool. Hence, it is dangerous to swim in a pool during thunderstorm.

Yes, it is possible to prevent the loss of life caused by lightning.

**Q.3. (A) (1)**

- The best way to avoid being struck by lightning is to stay away from storms.
- Always check the weather forecast before heading outdoors.
- If you notice that it may rain, be sure to arrive home as soon as possible.
- Even if there are no predictions of a storm, keep an eye on the clouds, as the forecast is not always accurate.
- Avoid open areas and tall objects.
- Stay away from objects that may conduct electricity.
- Take shelter in a car or nearby places.

**(2)** Sometimes the water coming down from rain clouds does not reach the land in the form of rain.

Instead due to very high temperature near the land, it vapourizes and goes back into the same cloud. As a result, the amount of vapour in those clouds becomes very high. Due to rapid condensation, it rains suddenly over a specific and small region at a rate of 100 mm per hour or more. This is known as cloud burst.

**(3)** The following steps can be taken to ease the severity of a famine:

- (i) Planned usage of water and reuse of water.
- (ii) Proper planning of water conservation and harvesting at the local level.
- (iii) Large scale plantation of trees and prevention of deforestation.
- (iv) Making appropriate changes in plans taking into account the weather forecasts.
- (v) Compose a variety of slogans and use them during 'Environment Awareness' rallies or programmes.

**(4)** Following are the effects of volcano:

- (i) The chemical substances such as lava, vapour, hot mud, sulphur, etc., get collected on the surface of the earth and thereby mountains and hills are created.
- (ii) The atmosphere gets polluted due to ash and gases due to volcanic eruption.
- (iii) Often it rains as a result of volcanic eruption.
- (iv) Temperature rises due to hot gases.
- (v) Forests and settlements get buried under the hot mud.

**(5) The measures to prevent loss of life due to lightning are :**

**When outdoors :** Avoid taking shelter below a tree. Not standing near an electric pole.

**When indoors :** Not using plugged in electrical appliances. Avoid taking a bath or using the shower.

**(6)** The following measures can be taken to prevent the bunds on a farm from getting washed away in the rainy season: Growing more trees near bunds, growing grass strips, stone lining or sand bagging near bunds.

**(7)** The water vapour present in air rises in the sky, gets cooled, and the condensed water vapour forms clouds. The clouds get further cooled to form rain clouds. Droplets of water produced due to condensation fall down on the earth in the form of rain.

**(8)** Flood is a natural disaster that causes overflow of large amount of water on the earth's surface resulting in destruction.

**Effects of floods :**

- (i) Huge loss of life and property.
- (ii) Soil erosion
- (iii) Destruction of standing crops.
- (iv) Spread of diseases and epidemics.

**(9)** Lighter positively charged particles are formed on top of the cloud, while the heavier negatively charged particles are at the bottom of the cloud. When both charges grow large enough, a giant spark (lightning) is produced between them.

**(10)** The formation of high and low air pressure belts in the atmosphere causes change in weather resulting in storms (strong winds).

**Effects of storms :**

- (i) Tremendous loss of life and property.
- (ii) Disruption of electric supply.
- (iii) Disruption of transport and communication.
- (iv) Uprooting of trees.

**(B) (a) Remedial measures for storm:**

- (i) Cut trees or branches that are likely to fall and cause damage.
- (ii) If we are outside take shelter in a safer place.
- (iii) Do not use plugged in electrical appliances.
- (iv) Listen to the radio or check for regular updates on weather conditions.
- (v) Protect yourself from lightning by keeping away from metal objects, switching off the electricity supply, T.V., telephone, etc.
- (vi) Keep calm and do not panic, do not spread rumours, check to see if there are people nearby who are wounded or in difficulty and assist them.
- (vii) Collaborate with the rescue and assistance service and help vital priority repairs and rehabilitation work if required.

**(b) Remedial measures for lightning strike :**

- (i) Avoid electronic equipment of all types. Lightning can travel through electrical systems like radios, televisions and other electronic gadgets.
- (ii) Do not try to walk or swim in flowing water, ponds, etc.

- (iii) Stay away from windows and metal doors.
- (iv) Stay away from concrete floors or walls. Lightning can travel through metal wires or bars in the concrete walls or floorings.
- (v) Wear rubber boots, as they are made of rubber material which is a bad conductor of electricity.

**(c) Remedial measures for famine :**

- (i) Planned usage of water and reuse of water.
- (ii) Proper planning of water conservation and harvesting at the local level.
- (iii) Large scale plantation of trees and prevention of deforestation.
- (iv) Making appropriate changes in plans, taking into account the weather forecast.

**(d) Remedial measures for cloudburst:**

- (i) Keep the first aid kit and emergency food supplies ready.
- (ii) Pay careful attention to the warnings issued by the India Meteorological Department.
- (iii) Keep a torch with you with some spare batteries.
- (iv) Move to a safe place and help others to relocate as well.

**Q.4. (1)** A peculiar type wave generated by an earthquake or volcano occurring on the ocean floor is called a tsunami. Tsunami is a Japanese word that means 'harbour wave'.

If an earthquake or volcanic eruption occurs at the bottom of the ocean, the energy released pushes the water upwards in the form of water columns. As a result of this, a peculiar type of waves are formed. These waves are not very high near the source, but they start

(ix) Disaster Management programme in Maharashtra lays down uses of ICT (Information Communication Technology), digitisation of the disaster management and the use of GIS (Geographic Information System) in hazard risk mapping.

(x) Information about floods is generally given by the Government well in advance. People should be mentally prepared to relocate immediately, if necessary.

#### **Measures taken to deal with calamities like landslides :**

- (i) Vegetation cover protects land from landslides, and soil erosion.
- (ii) Afforestation - trees should be planted on slopes to prevent soil erosion.
- (iii) Groundwater can be drained from soil using trenches filled with gravel and perforated pipes or pumped water wells.
- (iv) Landslide mitigation refers to construction and other man-made activities on slopes with a goal of reducing the effect of landslides.
- (v) During constructing buildings on a slope, designs that suit the natural slope should be adopted. Vegetation and large trees should not be removed.
- (vi) Provisions should be made at community level to prevent people from excavating, removing materials from the soil or cutting down trees.

#### **(4) With reference to disaster management, the following things should be checked in house :**

(i) **Location :** Check the location of your electrical

switchboard, gas connection, water supply, solar inverter and any other relevant sources.

(ii) **Potable water :** Check for drinking water, keep atleast 3 gallons each per person at home.

(iii) **Food :** Check your food supply and store non-perishable foods like canned food, biscuits, etc which do not require refrigeration.

(iv) **Medicines:** Keep some extra medicines with you for times when disaster strikes and you cannot leave your home to buy them.

(v) **First aid kit :** It should have latex gloves, gauze pads, a thermometer, bandages, band-aids, antiseptic ointment, hand sanitizers and instant cold packs, etc.

(vi) **Tools and supplies :** This includes items such as candles, matches, scissors, tweezers, a sewing kit, a flash light, extra batteries, a small fire extinguisher, a knife, etc. Be sure to also have a map of the area in case you need to look for a shelter.

(vii) **Hygiene products :** Toilet paper, soap etc.

(viii) **Important documents and items :** Includes cash, passport, identity card, bank account numbers, and a list of important and emergency phone numbers.

(ix) **Miscellaneous items :** Baskets, sleeping bags, paper cups, paper plates and plastic utensils.

# History

## Topic 4 : Maharashtra Before the Times of Shivaji Maharaj

**Q.1.** (A) (1) Pargana (2) Watandar (3) Peth  
 (4) Mauja (5) Varkari (6) Marathi  
 (7) Granth Sahib

(B) (1) Bhavartha Ramayana (2) Sant Ramdas Swami  
 (3) Deshpande (4) Vitthal  
 (5) Siddis (6) Sant Dnyaneshwar  
 (7) Dehu near Pune (8) Sant Eknath  
 (9) Sant Ramdas Swami  
 (10) Sant Janabai, Sant Kanhopatra, Sant Muktabai

(C) (1) True (2) False (3) False (4) True (5) False

(D) (1) Powada (2) Sant Kabir (3) Granth Sahib  
 (4) Nagar

(E) (1) - (c), (2) - (d), (3) - (a), (4) - (b)

**Q.2.** (1) The Mughals entered the Khandesh region to expand their power in the South.

(2) The Portuguese and the Siddis were the two sea powers on the Konkan coast.

(3) The Portuguese established their rule in Goa and Vasai on the Western coastline.

(4) The Patil used to settle the disputes in the village amicably.

(5) The Kulkarni helped the Patil in his work and kept the record of the revenue that was collected.

(6) Due to blind beliefs and rituals people had become fatalistic and inert.

(7) Sant Eknath Stated Bhagwat Dharma in detail and in a simple manner.

## Q.3.

		Village (Mauja)	Kasba	Pargana
(1)	What is means	A village is smaller than Kasba. It was called Mauja.	Kasba was a big village	Many villages together were called Pargana.
(2)	Officers	Chief of the Village (1) Patil (2) Kulkarni-helped Patil in his work	Watandars Officers (1) The Shetes (2) The Mahajans	Watandar Officers (1) The Deshmukh (The chief of Patils in a Pargana) (2) The Deshpande (chief of all Kulkarnis)
(3)	Example	(1) Budruk : Original Village (2) Khurd-New Village	(1) Indapur Kasba (2) Wai Kasba	(1) Pune Pargana 290 villages (2) Chakan Pargana 64 villages (3) Shirwal Pargana 40 villages.

**Q.4.** (1) **Budruk** : Budruk means original independent village.

(2) **Balut** : Balut means a share of agricultural produce given by the peasants to the artisans for the services they gave to the village community.

(3) **Vatan** : Vatan means the officer (of Kasba) receives some land from the Government and some rights from the villagers for their service.

**Q.5.** (1) Drought means no rain. If there would be no rain, there would be scarcity of water and foodgrain for the human being as well as for the animals. People would have to leave their villages. The prices of foodgrains would be high. There would be poverty, sickness and even death could occur. So it is said that droughts were a great calamity for the people.

(2) The Deshmukh and the Deshpande were the Chief Watandar Officers of the Pargana. Deshmukh was the chief of all Patils in a Pargana. He did the work at the Pargana level. Deshpande was the chief of all Kulkarnis in the Pargana. He did the work at the Pargana level. These Watandar officers were the link between the people and the Government.

**Q.6.** A village was called Mauja. The chief of the village was a Patil. He used to try to bring maximum land under cultivation. Patil used to resolve the disputes in the village and maintained peace. The Kulkarni kept the record of the revenue and helped Patil in his work. People in Mauja had their hereditary rights regarding their occupations. The artisans used to get their shares in the form of agricultural produce for their services.

**Q.7. (1)** The work of the Sants brought social awakening. The Sants gave the message of equality and humanity. They preached to the people to live in harmony, unity and love. Their work created self-confidence among the people of Maharashtra. This work resulted in social awakening.

(2) Society was greatly influenced by blind beliefs and rituals. People had become fatalistic and inert. They had lost their initiative. The condition of the common people was miserable. In such circumstances, the Sants in Maharashtra endeavoured to inspire the masses.

**Q.8. (1)** **Sant Namdeo :** Sant Namdeo was a great Sant of the warkari sect. He awakened the sense of equality in men and women, belonging to all castes. His abhangas compositions are well – known. His verses are included in the Granth Sahib of the Sikhs.

(2) **Sant Dnyaneshwar :** Sant Dnyaneshwar was a great Sant of the Varkari sect. He wrote Dnyaneshwari in Marathi. He also composed Amrutanubhav. He showed a simple way of worship and conduct to the people to follow in everyday life.

(3) **Sant Eknath :** Sant Eknath was a great sant of Bhakti movement in Maharashtra. He demonstrated through his own conduct that there is no need to renounce worldly matters for attaining the highest truth that is 'Parmarth'. He believed that Marathi language was inferior to no other language. His compositions include abhangas, gavalana and bharud, etc.

(4) **Sant Tukaram :** Sant Tukaram was a great sant of the Varkari sect. He belonged to Dehu near Pune. He criticized the hypocrisy and superstition in the society. He asked the people, to find God, by showing love to the unhappy and the tormented. His abhangas are pleasing and lucid. He had to suffer the opposition of some dogmatic people in the society. But he faced this opposition with noble courage.

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### Topic 5 : The Foundation of the Swaraj

**Q.1. (A)** (1) Shivneri (2) Deccan (3) Nizamshahi  
(4) Pratapgad (5) Bengaluru (6) Javali  
(7) Konkan (8) Shaistakhan

**(B)** (1) Murumbdev  
(2) Torana, Murumbdev, Kondhana  
(3) Rajgad (4) Kalyan and Bhivandi  
(5) Chhatrapati Shivaji Maharaj

**(C)** (1) Adilshah of Bijapur (2) Founding of Swara  
(3) Khelna

**(D)** (1)-(c), (2)-(e), (3)-(b), (4)-(a), (5)-(d).

<b>(E) (1)</b> Bengaluru	<b>(2)</b> Jadhavas of Phaltan
<b>(3)</b> Sindhudurg	<b>(4)</b> Baji Ghorpade
<b>(5)</b> Afzalkhan	

**Q.2. (1)** Chhatrapati Shivaji Maharaj created a feeling of trust and affection in the minds of the people.

**(2)** Yesaji Kank, Baji Pasalkar, Bapuji Mudgal, Narhekar, Deshpande brothers, Kavji Kondhalkar, Jiva Mahala, Tanaji Malusare, Bajiprabhu Deshpande, etc., were the associates and companions who joined Chhatrapati Shivaji Maharaj in his work of the founding of Swaraj.

**(3)** Chhatrapati Shivaji Maharaj captured the forts of Murumbdev, Torana, Kondhana and Purandar.

**(4)** Chandrarao More opposed the cause of the founding of Swaraj.

**(5)** Siddi showed no signs of relenting, so Chhatrapati Shivaji Maharaj opened talks with Siddi. This led to slackness in the siege around Panhalgad. Chhatrapati Shivaji Maharaj took advantage of the situation and escaped from Panhalgad.

**(6)** Chhatrapati Shivaji Maharaj paid compensation to the soldiers who were wounded in the battle. He rewarded those who had fought well. Those soldiers and officers of Afzalkhan's army who fell into the hands of Chhatrapati Shivaji Maharaj's army were given a good treatment.

**Q.3. (1)** After capturing Kalyan and Bhiwandi on the Konkan coast, Chhatrapati Shivaji Maharaj came into contact with the Siddi, Portuguese and British powers on the Western coast. Chhatrapati Shivaji Maharaj realised that in order to fight these powers, it was necessary to have a strong naval force. So he concentrated on building a navy.

**(2)** When the conflict with Adilshahi was continued, Mughal army invaded the Swaraj. Chhatrapati Shivaji Maharaj

realized that it was not wise to fight two enemies at one and the same time. Therefore Chhatrapati Shivaji Maharaj entered into a treaty with the Adilshahi.

**(3)** The Maval terrain was full of hills and valleys and was not easily accessible. Chhatrapati Shivaji Maharaj made use of these geographical features of Maval very skilfully for the purpose of the foundation of the Swaraj.

**(4)** In those days forts were of special significance. It was possible to control the surrounding area if one had forts. Therefore Chhatrapati Shivaji Maharaj decided to acquire the forts that were within his own Jagir.

**(5)** Shahaji Maharaj himself aspired to establish Swaraj by ousting the powers of foreign people. He wished to enable Shivaji to become a king. So he had arranged for providing excellent education to Shivaji. That is why he is termed as a Swaraj visionary.

**Q.4. (1)** **Shahajiraje :** He was the father of Chhatrapati Shivaji Maharaj. He was a pre-eminent Sardar in the Deccan. He was valiant, courageous, intelligent and a great political expert. He loved his subjects. Adilshah of Bijapur had given the region comprising Pune, Supe, Indapur and Chakan Pargana to Shahajiraje as a Jagir. Shahajiraje himself aspired to establish Swaraj, so he made an arrangement of excellent education for Shivaji to enable him to become a king.

**(2)** **The efforts Veermata Jijabai took for Chhatrapati Shivaji Maharaj's education :** Jijabai constantly guided Chhatrapati Shivaji Maharaj in the mission of establishing Swaraj. She instilled in him values like modesty, truthfulness, oratory, vigilance, courage and fearlessness. She saw to it that he knew the usage of weapons. She inspired in Chhatrapati Shivaji Maharaj the "will to win" and the dream of Swaraj.

## Topic 6 : Conflict with the Mughals

**Q.1. (A)** (1) Chhatrapati Shivaji Maharaj  
(2) Chakan (3) Bengal  
(4) Chhatrapati Shivaji Maharaj  
(5) Gagabhatta (6) South

**(B)** (1) Treaty of Purandar  
(2) Chhatrapati Shivaji Maharaj  
(3) Ahmadnagar and Junnar  
(4) Qutubshah

**(C)** (1) Mathura (2) Twice (3) Tanjavur

**(D)** (1)-(c), (2)-(a), (3)-(d), (4)-(b).

**(E)** (6) Shaistakhan's invasion (2) Raid on Lal Mahal  
(5) Treaty of Purandar (3) Escape from Agra  
(4) Coronation  
(1) Southern campaign of Chhatrapati Shivaji Maharaj

**(F)** (1) Sindhudurg (2) Siddi Ibrahim

**(G)** (1) Rajya-vyavahara-kosha (2) Moropant Pingale  
(3) Daudkhan (4) Surat

**Q.2. (1)** Chhatrapati Shivaji Maharaj devised a plan of attack on the rich city of Surat.  
**(2)** Chhatrapati Shivaji Maharaj was accompanied by Prince Sambhaji and a few of his trusted people.  
**(3)** Surat was a rich city, a large trade centre and a big port under the Mughal control. So Maharaj attacked the city of Surat.  
**(4)** Jaisingh proposed to Maharaj that he should visit Agra and meet the Emperor Aurangzeb.  
**(5)** The campaign of Surat was a stunning blow to Emperor Aurangzeb's prestige.  
**(6)** Shaistakhan ravaged the territory of the Swaraj by sending small units of his army to the neighbouring areas.

He encamped at Chakan and captured the fort of Chakan. He set up his camp in Lal Mahal, for two years. His forces looted the people. This had an adverse effect on the people's morale.

**(7)** Sinhagad, Purandar, Lohagad, Mahuli, Karnala and Rohida were the forts Shivaji Maharaj recaptured after he came back from Agra.

**(8)** The terms of the Treaty of Purandar were as follows.

**(1)** Maharaj had to give his twenty-three forts to the Mughals.  
**(2)** The adjoining territories yielding an annual revenue of four lakh hons.  
**(3)** Maharaj also assured the Mughals help against Adilshahi.

**Q.3. (1)** Jaisingh ravaged the territory of the Swaraj. Jaisingh and Dilerkhan laid siege to Purandar Fort. Murarbaji fought with the greatest of courage. He died a hero's death. Considering the seriousness of the situation, Maharaj entered into the Treaty of Purandar.

**(2)** Shaistakhan had ravaged large territories of the Swaraj for three years. So it was necessary to make up the losses. So Chhatrapati Shivaji Maharaj took an aggressive stand against the Mughals.

**(3)** Shaistakhan had lost his fingers during the raid on Lal Mahal. Because of this, he suffered great humiliation so he shifted his camp to Aurangabad.

**Q.4. (1)** **The Coronation of Chhatrapati Shivaji Maharaj :** After a relentless struggle for over thirty years Maharaj decided to coronate himself. He realised that it was necessary to recognise the Swaraj as a sovereign

independent state. For this a formal coronation was necessary. Chhatrapati Shivaji Maharaj coronated himself by a learned Pandit at Raigad on 6th June 1674.

**(2) Escape from Agra :** Aurangzeb did not treat Chhatrapati Shivaji Maharaj with honour. So Chhatrapati Shivaji Maharaj gave vent to his rage. Then Aurangzeb put him under house arrest. So Maharaj devised a plan. He adroitly escaped from Agra along with Prince Sambhaji and his associates. After few days, he reached Maharashtra and then at Rajgad safely. He had left Sambhaji Raje at Mathura, later Sambhaji was brought safely to Rajgad.

**(3) Chhatrapati Shivaji Maharaj's campaign of the South :** In October 1677, Chhatrapati Shivaji Maharaj undertook a campaign of the South. He entered into a treaty of friendship with Qutubshah of Golconda. Later he won Bengaluru, Hoskote in Karnataka. He won the forts of Jinji and Vellore in today's Tamilnadu. He also won some territories of Adilshah in the South. Maharaj annexed the fort of Jinji to his Swaraj.

**(4) Chhatrapati Shivaji Maharaj's preparation for the coronation :** An extremely valuable and grand throne was made for the coronation of Chhatrapati Shivaji Maharaj. There were eight bejewelled pillars on eight sides of the throne. This throne was made of thirty-two 'mann' of precious gold. Without measuring and counting, plenty of money, clothes, elephants and horses were donated to the great scholars who had come to attend the coronation ceremony from different regions.

## Civics

### Topic 2 : Preamble to the Constitution

**Q.1. (A)** (1) Constitution (2) law (3) Preamble  
(4) British (5) secular (6) religion  
(7) people (8) fixed (9) republic  
(10) public (11) dignity (12) election  
(13) citizens

**(B)** (1)-(c), (2)-(d), (3)-(a), (4)-(b).

**(C)** (1) False (2) True (3) False (4) True (5) False  
(6) True (7) True (8) False (9) True

**(D)** (1) Fraternity (2) Democracy (3) Preamble  
(4) Secular (5) Justice (6) Laws

**Q.2. (1)** The Government elected by the people makes laws on behalf of the people.

**(2)** The positions like the President, the Prime Minister, the Governor, the Chief Minister, the Mayor, the Sarpanch, etc., are public positions.

**(3)** In a monarchy, the public positions are occupied by the members of a single family following the principle of heredity.

**(4)** The values of justice, liberty and equality have been guaranteed by the Preamble to Indian citizens.

**(5)** The three types of justice are social justice, economic justice and political justice.

**(6)** All citizens completing 18 years of age have the right to vote in elections.

**(7)** Equality of status and of opportunity is guaranteed by the Preamble.

**Q.3. (1)** The Preamble states secularism as one of our goals. In a Secular State, all religions are considered as equal. No religion is considered to be the State religion. Citizens are free to follow their own religion. State cannot discriminate amongst citizens on the basis of religion.

**(2)** We have adopted universal adult franchise to enable equal participation in the running of the country. According to this, all citizens completing 18 years of age have the right to vote in elections.

**(3)** The right of economic justice ensures the eradication of poverty; and the right to a source of livelihood, so as to look after oneself and one's family without any discrimination.

**(4)** When every individual respects another and honours their freedom and rights, the dignity of the individual will get established.

**(5)** The Preamble begins with the words "We the people of India" and ends with the words "Give to ourselves this Constitution".

**(6)** The word 'sovereign' means that a state is not under the control of a foreign power. The word 'sovereignty' means the ultimate authority to govern yourself. In a democracy, sovereignty rests with the people.

**(7)** Justice implies removal of injustice and ensures that everybody has the opportunity for progress. Justice promotes public good.

**Q.4. (1)** Fraternity                    **(2)** Democracy  
**(3)** Preamble                    **(4)** Secular

F	A	Y	G	A	R	O	K	J	I
R	G	Z	E	L	F	R	M	L	L
A	E	G	P	S	H	M	Y	N	D
T	F	P	R	E	A	M	B	L	E
E	E	A	Z	C	H	I	J	I	M
R	D	O	P	U	J	A	B	K	O
N	I	M	E	L	K	P	S	Q	C
I	H	N	Z	A	R	C	O	T	R
T	C	G	F	R	G	H	G	K	A
Y	B	N	Q	H	I	E	F	J	C
Y	A	A	P	S	L	S	I	F	Y

**Q.5. (1)** **Socialist State :** A socialist state is such a state where the gap between the rich and the poor is minimum. All have a right over the wealth of the country. It is ensured that wealth is not concentrated in the hands of a few people.

**(2)** **Equality :** Equality means that all have equal human status and there will be no discrimination based on caste, creed, race, sex, place of birth etc. The Preamble has given great importance to equality of status and of opportunity.

**(3)** **Sovereign State :** Our country became independent on 15<sup>th</sup> August, 1947 India became a sovereign State. The word 'sovereign' means that a state is not under the control of a foreign power. In a democracy, power remains in the hands of the people. The representatives govern the State on behalf of the people.

**(4) Equality of opportunity :** The Preamble has given great importance to equality of opportunity. According to this, all citizens get the opportunities for development without any discrimination.

**Q.6. (1)** Freedom of thought and expression enable the citizen to express their own views and ideas freely. A give and take of ideas enhances the spirit of co-operation and unity amongst us. So the freedom of thought and expression is a most fundamental freedom for an individual.

**(2)** Fraternity implies a 'we-feeling' towards one another. It creates a feeling of empathy. People become more understanding towards each other's problems and needs. So the promotion of fraternity has been included in the Preamble as a goal.

**Q.7. (1)** Freedom means behaving in a responsible way and not as per our whims and fancies. If we are celebrating the festivals publicly, we need to follow some rules e.g. keeping the area clean and free from sound and air pollution. We should be aware of public cleanliness, health and the environment. We should not behave in an unrestrained manner.

**(2)**

	KEYWORDS	PRONUNCIATION	MEANING
(1)	PREAMBLE	pree-am-bl	An introduction or Preface of the Indian Constitution.
(2)	SOVERGIN	sov-reen	Independent. Not controlled by any other country
(3)	SOCIALIST STATE	so-shia-list	(1) The State where the gap between rich and poor is minimum. (2) People who believe in social equality (social belief).

(4)	SECULAR	sae-qular	All religions are considered equal. Not concerned with any religion.
(5)	DEMOCRATIC	daemo-kratik	Sovereign power in the hands of people. Supporting equal rights for all people. Based on a system of democracy.
(6)	REPUBLIC	ruh-puh-bluhk	The country that has an elected government and an elected leader.
(7)	JUSTICE	juh-stuhs	The fair treatment of people.
(8)	LIBERTY	li-ber-tee	The freedom to go where you want, do what you want.
(9)	EQUALITY	e-kwa-ilty	The situation in which everyone has the same rights and advantages amongst the people of different races.
(10)	FRATERNITY	frae-ter-nty	The feeling of friendship and support between people in the same group.

### Topic 3 : Features to the Constitution

**Q.1. (A)** (1) Federal (2) Parliamentary (3) Lok Sabha  
 (4) Judiciary (5) President (6) Single  
 (7) unique (8) democratic (9) 29 - 7  
 (10) Parliament (11) Concurrent (12) two

**(B)**

	<b>Union List</b>		<b>State List</b>		<b>Concurrent List</b>
(1)	Defence	(1)	Agriculture	(1)	Employment
(2)	Foreign relations	(2)	Law and Order	(2)	Environment
(3)	Currency	(3)	Local government	(3)	Education
(4)	War and Peace	(4)	Health	(4)	Personal law
(5)	International trade	(5)	Prison Administration	(5)	Economic and Social planning

(C) (1) Union Government (2) Election Commission  
 (3) Concurrent List (4) State Government  
 (5) Union Territories (6) Parliament (Legislature)

(D) (1) True (2) False (3) True  
 (4) False (5) True

(E) (1) defence (2) Kerala (3) Subject List  
 (4) Daman and Diu

(F) (1)-(c), (2)-(d), (3)-(a).

**Q.2. (1)** The Government at the centre is called Union Government or the Federal Government.

**(2)** Lok Sabha and Rajya Sabha have the power to amend the Constitution.

**(3)** The Council of Ministers is answerable to the Lok Sabha.

**(4)** The Indian Constitution has granted a single citizenship to all Indians.

**(5)** The Union Government and the State Government are entitled to make a law on the subject of the Concurrent list.

**(6)** There are twenty-nine States and seven Union Territories in India.

\* **Teacher's Note :** Please let the students know that our country currently has 28 States and 8 Union Territories.

**Q.3. (1)** Ruling a large territory from a single capital city is not only difficult, but may also lead to the neglect of some far-flung areas. People residing there cannot participate in the affairs of the Government. Therefore, Governments function at two levels in a federation.

**(2)** Union Government makes laws on the Union List and the State Government makes laws on the State list. If a subject comes up that is not included in any of the lists, the Union Government is entitled to make laws on it. These powers are termed as Residuary Powers.

**(3)** The disputes that cannot be resolved mutually are referred to the Judiciary. The court hears both the contesting parties, looks into the injustice if any, and gives its judgement. This has to be done impartially. Therefore, the Constitution has created an Independent Judiciary for India

**(4)** The Government at the centre carries out tasks like defence of the entire country, foreign policy, establishing peace, etc.

**(5)** The system of running the administration of a country co-operatively by the governments at two levels, making laws about different subjects, is called federalism.

**(6)** The merits and the demerits of an Independent Judiciary are as follows :

**Merits :**

- (i) Judges are competent to make judicial reviews by their knowledge and experience.
- (ii) In judiciary system the court is independent, hence making sure that it is not influenced or biased while imparting justice.

(iii) The Court protects fundamental rights of the people and minorities.

**Demerits :**

- (i) Judiciary system may violate the separation of powers.
- (ii) Judicial Review delays the operation and implementation of important issues.
- (iii) Judges may overlook the challenges of the changing times and may refuse to move forward.
- (iv) Judges may become conservative.

(7) Electronic Voting Machine takes care of the chores of casting and counting votes. It can also involve transmission of ballots and votes via telephones, private computers, network and internet. It includes a control unit and a balloting unit connected by a 5 cm cable.

**Advantages of EVM machines are as follows :**

- (i) Hackers cannot hack the EVM machines.
- (ii) It can't tamper the count number.
- (iii) Physically challenged people can operate it easily.
- (iv) EVM saves time.
- (v) It is economical, paperless and cost-effective.

Q.4. (1) The Council of Ministers that runs the administration emerges from the Lok Sabha. So that it is answerable to the Lok Sabha for all its decisions.

(2) Since India has adopted a democratic form of Government, people have to elect their representatives periodically. The elections have to be conducted in a free and fair atmosphere. Only then will the citizens be able to elect a candidate of their choice without any fear or pressure.

## Geography

### Topic 4 : Air Pressure

Q.1. (1) air pressure (2) increasing altitude  
(3) temperature (4) pressure belts  
(5) equator, poles  
(6) Tropic of Cancer, Tropic of Capricorn (7) heavier  
(8) curvature (9)  $0^{\circ}$  (10) isobars

Q.2. (1) The altitude of the region, temperature of the air and amount of water vapour in the air, are some factors that influence air pressure.  
(2) When temperature rises, the air gets heated, it expands and becomes lighter in the vicinity of the earth's surface and moves upwards towards the sky.  
(3) Uneven distribution of temperature influences the distribution of air pressure. It leads to the formation of low and high pressure belts, horizontally between the equator and the poles.  
(4) The effects of air pressure are (a) origin of winds, (b) generation of storms, (c) convectional type of rain.  
(5) The duration and intensity of sunrays varies during the periods of the year in both the hemispheres. This makes the temperature zones and pressure belts to vary. The change is  $5^{\circ} - 7^{\circ}$  towards the north and  $5^{\circ} - 7^{\circ}$  towards the south. This is called the oscillation of pressure belts.  
(6) The difference is that temperature zones are continuous and are spread from the equator to the poles, from Torrid to Frigid. Pressure belts on the other hand are not continuous and areas of high and low pressure are found in different regions from the equator to the poles.

	<b>Pressure Belts</b>	<b>Temperature Zone</b>
<b>(a)</b>	Pressure belts are narrower.	<b>(a)</b> Temperature zones are larger.
<b>(b)</b>	Pressure belt has limited extent upto $10^{\circ}$ parallels.	<b>(b)</b> Temperature zones extends from $23^{\circ} 30'$ to $66^{\circ} 30'$ .

**(7)** Due to earth's curvature, the area between two parallels gets reduced as we move towards the poles. Air in this region is thrown out because of their reduced friction and also because of the earth's rotational motion. This leads to the development of the subpolar low pressure belts between  $55^{\circ}$  and  $65^{\circ}$  parallels in both the hemispheres.

**Q.3. (1)** The proportion of dust, water vapour, heavy gases is high in the air near the earth's surface. This proportion decreases with increasing altitude. As we move higher and higher from the surface of the earth, the air becomes thinner and thinner. As a result the air pressure decreases with increasing altitude.

**(2)** Temperature and air pressure are closely related. Wherever the temperature is high, the air pressure is low. As the temperature rises, the air gets heated, expands and becomes lighter. This air rises up and pressure decreases. Pressure depends on the rise and fall of temperature, hence it oscillates.

**(3)** The heat received from the sun is uneven in different regions. Hence, distribution of temperature is uneven from the equator to the poles. As a result, the temperature zones are created.

**(4)** The sun's rays are perpendicular between the Tropic of Cancer and Tropic of Capricorn. The temperature is high here. Air gets heated and expands, becomes lighter and moves towards the sky. This goes on continuously, hence a low pressure belt is formed between  $5^{\circ}$  N and  $5^{\circ}$  S parallels.

**Q.4. (1)** (a) When the heated air becomes lighter, it starts rising and reaches higher altitudes and then moves towards the Polar regions.

(b) Due to low temperature at the higher altitudes the air cools down and becomes heavier. This heavier air descends in both the hemispheres between  $25^{\circ}$  to  $35^{\circ}$  parallels.

(c) This leads to the formation of high pressure belts in both the hemispheres.

(d) This air is dry and these regions do not get rain, hence hot deserts of the world are found in these regions.

**(2)** (a) The pressure belts can be divided horizontally on the earth's surface.

(b) We have the Equatorial low pressure belt from  $5^{\circ}$  N to  $5^{\circ}$  S of the equator. Since it is very hot here, the pressure is low.

(c) From  $25^{\circ}$  to  $35^{\circ}$  N and  $25^{\circ}$  to  $35^{\circ}$  S of the equator we have the Mid-Latitudinal high pressure belts.

(d) From  $55^{\circ}$  N to  $65^{\circ}$  N and  $55^{\circ}$  S to  $65^{\circ}$  S we have the Sub Polar low pressure belts.

(e) At the North Pole and at the South Pole we have the Polar high pressure belts from  $80^{\circ}$  and  $90^{\circ}$  N and S.

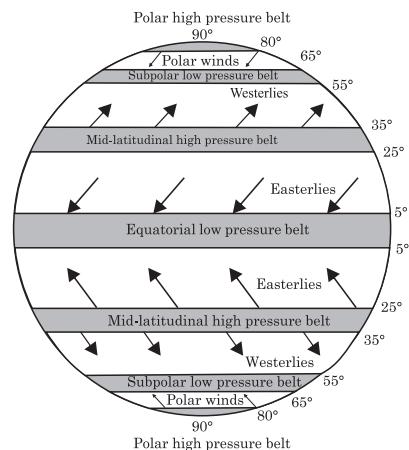
**(3)** (a) The sun's rays can be perpendicular between the Tropic of Cancer and Tropic of Capricorn.

(b) The temperature is very high in this region.

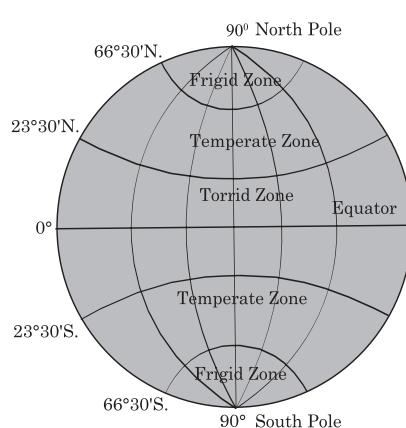
(c) The air expands, becomes lighter and moves towards the sky. Low pressure belt gets formed between  $5^{\circ}$  N and  $5^{\circ}$  S.

**Q.5.** (1) thinner (2) millibars (3) uneven (4) Equatorial low

**Q.6. (a) Pressure belts**



**(b) Temperature zones**



**\*Q.7.** The heated air becomes lighter, starts ascending and after reaching higher altitudes, moves towards the polar region. Due to low temperatures at the higher altitudes, the air cools down and becomes heavier. This heavier air descends down in both the hemispheres in the region between 25° to 35° parallels. This leads to the formation of high pressure belts in the parallels of latitudes in both the hemispheres. This air is dry, hence the region does not get rainfall. Consequently, most of the hot deserts on the earth are formed in these regions.

### Intext Question

\* **Can you tell ?**

- (1) (1) Equatorial low pressure belt its found in the Tropics.
- (2) (a) Polar high pressure belt (b) Frigid zone
- (3) The temperature is very high in the Tropics. The sun's rays are perpendicular between the Tropic of Cancer and Tropic of Capricorn.

(4) Between Mid-latitudinal high pressure belt and Sub-Polar low pressure belt winds in the temperate zone are associated.

- (5) (a) Equatorial low pressure belt 5° N to 5° S.
- (b) Sub polar low pressure belts 55°–65° N and 55°–65° S.

**(2) (1)** In the Northern hemisphere isobars are far from each other. In Southern hemisphere isobars are very close to each other.

- (2) (1)** Mid-latitudinal high pressure belts are between 25°–35° North and South of the equator.
- (b) Equatorial low pressure belt is between 5° North and 5° South of the equator.
- (c) Sub Polar low pressure belts are between 55° – 65° North and South of the equator.
- (d) Polar high pressure belts are between 80° – 90° North and South of the equator.

**(3)** The distance between successive isobars over oceans is close to each other where as the distance between successive isobars over land is more and they are further away from each other.

**(4)** In the Northern hemisphere isobars are hardly parallel to each other. They go round in circular shapes and there is lots of distance between them.

In the Southern hemisphere isobars are more parallel to each other and nearer to each other.

**(5)** Since the isobar lines are forming a circular path, it shows that the pressure is the same throughout Asia.

**(6)** These lines show high pressure.

**(7)** They show that there is low pressure in these areas.

### Think about it!

- As the temperature drops the air gets cooled, it contracts and becomes heavier. This heavy air moves in the downward direction and the air pressure increases.

### Use your brain power!

- If there is low pressure at the equator, the air pressure in the Arctic Zone will be high.

### Topic 5 : Winds

**Q.1. (A)** (1) earth's surface (2) velocity  
 (3) Knots (4) rotation  
 (5) Southern (6) Roaring forties  
 (7) Mountains (8) sunset  
 (9) stable, opaque (10) Indian sub-continent

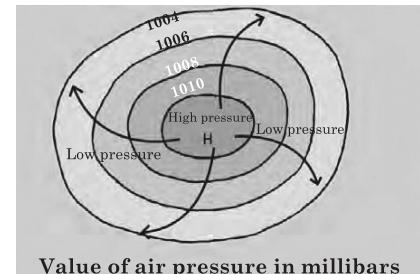
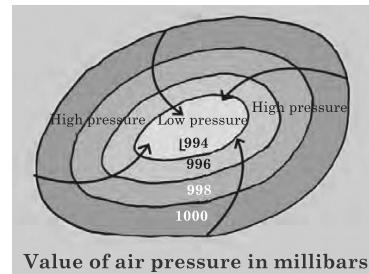
**(B)** (1)-(d), (2)-(a), (3)-(b), (4)-(c), (5)-(e).

**Q.2. (1)** becomes thinner  
 (2) blow towards regions of low air pressure  
 (3) turn to the east  
 (4) north-east to south-west.  
 (5) blow in the areas around  $40^{\circ}$  S parallel

**Q.3. (1)** South west monsoon winds  
 (2) Polar winds  
 (3) Mountain breeze

**Q.4. •** 990, 994, 996, 1000

• 1030, 1020, 1010, 1000



**Cyclone**

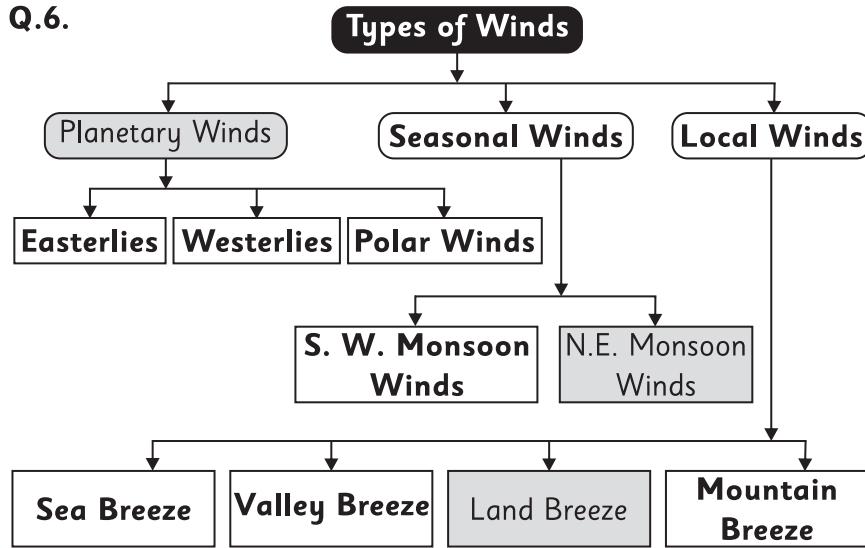
**Anticyclone**

**Q.5 (1)** The region between  $5^{\circ}$  N and  $5^{\circ}$  S around the equator is a region of low pressure. Winds in both the hemispheres blow towards the equator and lose their velocity as they near the equator and get deflected to the east or west due to the rotation of the earth, hence this area is a calm area. It is also called as the equatorial calm zone or the Doldrums.

**(2)** The southern hemisphere is mostly occupied by oceans. In this hemisphere the obstacle caused by the relief of the land surface is almost absent. As there is no obstacle, winds blow with greater velocities in the southern hemisphere as compared to the northern hemisphere.

**(3)** From September to December, because of the low pressure area developing near the equator, winds blow from the Indian sub-continent towards the equator. These are called north-east monsoon winds. They are dry winds.

**Q.6.**



**Q.7. (1)** In both the hemispheres it is very cold in Polar areas, the temperature is very low. It is around  $0^{\circ}\text{C}$  in these areas, hence the pressure is high. The lower the temperature, the higher is the pressure.

**(2)** The direction of the winds is influenced by the rotation of the earth. In the northern hemisphere, winds get deflected towards the right of their original direction, whereas in the southern hemisphere, they get deflected towards the left of their original direction. The rotation from west to east causes the change in the original direction of the winds.

**(3)** Cyclonic conditions are created when a low pressure area is surrounded by high pressure areas. In these conditions, winds start blowing towards the low pressure area from the surrounding high pressure areas. Due to the rotation of the earth the cyclonic winds in the northern hemisphere move in an anticlockwise direction, whereas they move in a clockwise direction in the southern hemisphere.

**(4)** Cyclones are formed when a low pressure area is surrounded by high pressure areas. Winds start blowing from the surrounding high pressure areas to the low pressure area in the centre.

**Effects :** The sky becomes cloudy, winds blow with very high velocity and it rains heavily.

### Intext Question

#### Give It A Try

Pressure Belts	Northern Hemisphere	Southern Hemisphere
Mid Latitudes	Winds get deflected towards the right of their original direction	Winds get deflected towards the left of their original direction
Poles	North to South	South to North

#### \*Can you tell ?

**(1) (1)** The Easterlies. **(2)** Southward direction.

**(3)** The Westerlies.

**(4)** Polar winds blow from high pressure areas at the North Pole and South Pole to the sub-polar low pressure areas, hence in the north they blow south wards and in the south, they blow north wards.

**(5)** The Easterlies, the Westerlies and the Polar winds.

**(6)** In both the hemispheres the Easterlies blow from the mid-latitudinal high pressure belt to the equatorial low pressure belt.

**(2) (1)** Land gets heated faster than water and the air pressure on land decreases. Sea water gets heated slowly, hence the air is less heated and air pressure remains high. Winds here blow from sea to land.

(2) At night cool land breeze blows from the land towards the sea.

(3) The textbook figure 5.5 (a) shows day time. We have cool sea breeze blowing to the land. On land, the pressure is low because the air is heated up. The warm air moves towards the sea and the air becomes cooler. Over the sea the pressure is high. The sea breeze blows from the high pressure belt above the sea to low pressure belt on the land.

(4)

	<b>Sea breeze</b>	<b>Land breeze</b>
(a)	In 5.5 (a) (textbook) we have high temperature on the land and low temperature on the sea.	(a) In 5.5 (b) (textbook) we have warm air cooling and coming in the downward direction, while warm air over the sea goes upward.
(b)	Air pressure is low on land and high on water.	(b) Air pressure is high on land and low on water.
(c)	Wind blow from high pressure areas on the sea to low pressure areas on land.	(c) Wind blow from high pressure belts over the land to low pressure belts on water.

(5) Land breezes are shown in textbook 5.5 (b) These breezes blow from the land towards the sea at night. Sea breezes are shown in textbook 5.5 (a). These breezes blow from high pressure over the water to low pressure over the land 5.5 (a) (textbook).

(6) Land and sea breezes are experienced on the Western coast of India and the Eastern coast of India.

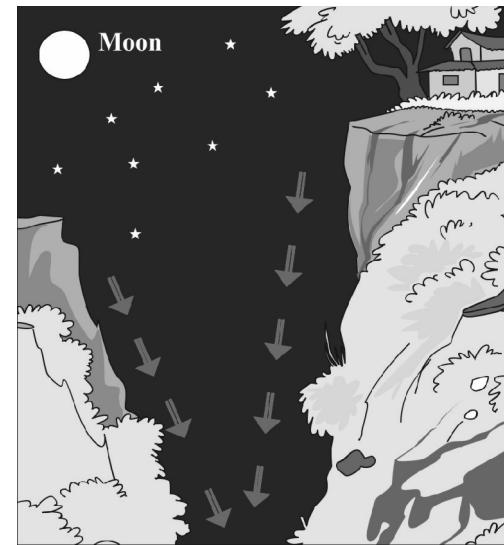
(7) Yes, I experience sea and land breezes as I stay on the west coast of India.

**(Note :** Student can write their own answer as per the place where they live, answer may vary.)

\* **Try this**

(A) (1) The valley zone remains cool due to more numbers of tree.  
 (2) Air pressure is more than mountain top in the valley.  
 (3) Winds blow from the valleys in the upward direction.  
 (4) The hot and light air from the valley is pushed upwards and the cool air rushes down into the valley.  
 (5) Valley breeze blows during daytime.

(B)



**Mountain breeze**

## Topic 6 : Natural Regions

**Q.1. (A)** (1)  $65^{\circ}, 90^{\circ}$  (2) rainfall, snowfall (3) very cold  
 (4) 25 (5) 200

**(B)** (1)-(c), (2)-(a), (3)-(d), (4)-(b).

**Q.2.** (1) False - They are industrious and enthusiastic people.  
 (2) False - The prairie region is called the wheat granary of the world.  
 (3) True      (4) True  
 (5) False - Crocodile, anaconda and hippopotamus are found in equatorial regions. Lions and tigers are found in monsoon region.

**Q.3.** (1) In this region the rainfall is from 250 to 2500 mm. Rainfall is highly variable and its distribution is quite uneven. These areas get rain in specific seasons from the S.W. Monsoon winds, hence people are engaged in agriculture.  
 (2) The annual rainfall here is between 2500 and 3000 mm. There is high heat and rainfall throughout the year. The land too is swampy in general. Hence tall hard-wooded trees like mahogany, ebony, etc., grow here.  
 (3) In these regions, the temperature is very low. It is approximately  $-20^{\circ}$  to  $-30^{\circ}$  C. The mean annual rainfall is 25 - 300 mm. This is the reason why there is very short lived vegetal life in the Tundra region.

**Q.4.** (1) The latitudinal extent is approximately between  $55^{\circ}$  and  $65^{\circ}$  N parallels, from Alaska to the Atlantic coast.  
 (2) Giraffe, elephant, zebra are some herbivorous animals. For self protection, nature has gifted the animals here with speedy legs. Skins of the animals have colourful spots or stripes bands to help them merge with the natural surroundings.  
 (3) (a) The monsoon regions are situated between  $10^{\circ}$  and  $30^{\circ}$  N and S parallels.

(b) The areas are : Indian subcontinent, West Indies, N. Australia, E. Africa, etc.  
 (c) Rainfall is 250 to 2500 mm. The S. West Monsoon winds give rain to these areas.  
 (d) Vegetation depends on the distribution of rainfall, hence there are semi-evergreen and deciduous forests. Trees such as banyan, peepal, teak, sal, etc., grow here.  
 (e) There are wild animals like tigers, lions, wolves, peacocks, etc., and domesticated animals such as cattle, goats, horses, etc.  
 (f) People are involved mostly in agriculture.

**Q.5.** (1) Colorado Desert    (2) British Columbia  
 (3) Downs Grassland    (4) Inhabited part of Greenland  
 (5) Mediterranean Sea



(1) Monsoon region, mountainous region.  
 (2) Africa.      (3) Asian continent.

- (4) The Southern hemisphere has less land and more water.
- (5) Taiga region.
- (6) Island near the Arctic circle.
- (7) Prime Meridian passes west European type climate region, mountainous region, Mediterranean region and grasslands in the Torrid zone. (Savanna) through continental dry climate and hot desert regions.

\* **Think about it !**

- (1) On the western side mean summer temperature is high, it is between 30° to 45° C. There is tremendous heat in the western side, hence deserts are mostly located here.
- (2) Since it is very hot and there is no rain, crops cannot be cultivated in the desert areas. People must have some occupation. Animal rearing is the best thing that can be done in desert areas.
- (3) People move from one area to another in search of water. When the water in their area gets dried up or exhausted they move to another place in search of water. Hence they live a nomadic life.
- (4) Carnivorous animals like to move about freely. Since grasslands are very large, we find both carnivorous as well as herbivorous animals here. Carnivorous animals also find plenty of food in the grasslands since carnivorous animals live on the flesh of herbivorous animals.
- (5) Because of hot and humid climate animals like lions are not found in equatorial forest.
- (6) (1) Tundra region      (2) In Sudan Type grasslands  
 (3) Mediterranean region (4) Equatorial region  
 (5) Desert area      (6) Monsoon regions, grasslands  
 (7) Mediterranean region

## English Balbharati

### Unit - III

#### Topic 3.1 : Tartary

##### Answer the following

- Q.1. (1) beaten gold (2) flaunt (3) athwart (4) slant
- Q.2. (1) trumpet, harp, flute, mandoline  
 (2) zebras, tigers, peacocks
- Q.3. They are (a) glen (b) vale (c) dale
- Q.4. (1) **Colour :** (i) Yellow as honey, red as wine,  
 (ii) White, and gold, and green they'd be -  
 (iii) Her rivers silver-pale!  
 (iv) In every purple vale!
- (2) **Sound :** (i) Trumpeters every day  
 To every meal would summon me,  
 And in my courtyard bray;  
 (ii) While harp, and flute, and mandoline,  
 Made music sweet and gay.
- (3) **Images from nature :**  
 (i) And ere would wane the morning-star,  
 (ii) Her flashing stars, her scented breeze,  
 (iii) Her trembling lake like foamless seas,
- Q.5. • Sweet and gay music      • Silver pale rivers  
 • Scented breeze      • Trembling lake  
 • Bird-delighting citron trees

- Q.6. **The daily routine of the Lord of Tartary :** The Lord of Tartary slept in a bed of ivory and had peacocks in his court, tigers in his forests and fishes in his pools. Every day, trumpeters summoned him to his meals. Every evening yellow

and red lamps were lit and the harp, flute and mandoline played sweet music. The Lord of Tartary dressed in a robe of white gold and green beads with his scimitar passed through the dark glades of Tartary drawn by seven zebras. The Lord of Tartary passed through the thicket, wood and dale, looking at the stars and enjoying the breeze. This was the Lord's daily routine.

**Q.7.** We visited a remote village in Kashmir, situated far from the bustling city. Though this was a remote village, it was so lovely and so different from our towns and cities. There we saw mountains in the background covered with snow that was slowly melting and moving in the downward direction. The land was flat and covered with green grass that looked like a smooth carpet. There were several peaceful and calm lakes scattered around the village, formed by the melting snow. These lakes had pure glistening water free from bacteria. The flora and fauna were simply breathtaking. There were fir trees and lovely Christmas trees all lovely and green. Birds like the dove and swan were moving about in the greenery and in the water. In the evening before the sun could set, it gave off an amber tinge to the sky. The sky took on a lovely colour of red, gold and orange that was breathtaking. We met the local people sitting around a hand made fire.

They were very colourfully dressed with short skirts and heavy jewellery. They wore earrings and nose rings, heavy bracelets of beads and anklets of beads and colourful thread.

It was simply breathtaking, visiting this lovely remote village in Kashmir.

**Q.8.** Yes, the picture has a dreamy quality. The boy is a musician who is conducting the orchestra made up of a fish, musical instruments, animals, birds, fruits and a carriage. All the above mentioned characters will be giving out different sounds. But this is not in reality. It is only a dream.

**Q.9.** The Lord of Tartary was the Lord of the fruits of the rivers, the hills, the glen, the thicket, wood and dale. He was Lord of the flashing stars, scented breeze, trembling lake, foamless seas and bird-delighting citron trees.

**Q.10.** The Lord of Tartary wore a robe of beads which were white gold and green in colour. These beads were clustered close to each other and looked like seeds.

### Comprehension

#### Extract - 1

**Q.1.** Peacocks in the court, tigers in the forests and great fishes in the pool.

**Q.2.** (1) The harp, the flute and the mandoline made sweet and gay music in the Lord's palace and ground.  
(2) The evening lamps are as yellow as honey and as red as wine.  
(3) The Lord's bed would be made of ivory and the throne would be of beaten gold.

**Q.3.** (1) The rhyme scheme is abab.

(2) (a) Simile (b) Onomatopoeia

### Grammar / Language study

**Q.1.** (a) Yellow as honey (b) red as wine  
(c) her trembling lake like foamless seas  
(d) clustered thick as seeds

**Q.2.** (a) And in my court should peacocks flaunt, and in my forests tigers haunt.  
(b) And in the evenings lamps would shine, yellow as honey, red as wine

**Q.3.** (1) bird-delighting (2) foamless  
(3) trembling (4) scented

**Q.4. (1)** The rhyme scheme is ababcccb.

**(2) (a)** Simile    **(b)** Simile    **(c)** Personification

### Topic 3.2 : Compere a Programme

#### Answer the following

<b>Balanand Vidyalaya Art Festival Programme</b>	
<b>(1)</b>	Dignitaries Arrive
<b>(2)</b>	Igniting the Lamp
<b>(3)</b>	Welcome and Introduction of Guests
<b>(4)</b>	Appraisal of the Art Festival
<b>(5)</b>	Recital of 'Taal kacheri'
<b>(6)</b>	Koli Dance
<b>(7)</b>	The Boy Comes Home - A skit by Std IX
<b>(8)</b>	Prize Distribution
<b>(9)</b>	Chief Guest Speaks
<b>(10)</b>	Vote of Thanks

#### Q.2.

You are cordially invited to the Art festival to be held at the Antonio D'souza High School, Byculla on the 20<sup>th</sup> of November 2017, at 11.00 a.m. The Honourable Chief Guest of this esteemed festival will be Shri Cletus Athaide a well-known and much-renowned artist. We look forward to your attendance.

#### Q.3. Art Festival

**Balanand Vidyalaya, 23<sup>rd</sup> August**

**– By student reporter**

Balanand Vidyalaya School organised an Art festival on 23<sup>rd</sup> August, 2017. Students of the surrounding schools were invited to participate.

The Head Girl Miss Shubhada Murarka escorted the dignitaries to the dais. The Honourable Chief Guest was Shri Charudatta Diwan, president of Balanand Education Society.

The traditional lamp was lit and prayers were offered. Miss Anagha Bhatia of Std.VII and her group sang the school song. The Chief Guest Shri Charudatta Diwan was welcomed by the principal with the gift of two volumes of cherished lives of Great Artists. Next the Art teacher Ms. Shilpa Sanghani welcomed the beacon of the institution, Mr. Avadhoot Pathak. The Principal Dr. Ajinkya Parakhi delivered the introductory speech.

This was followed by the 'Taal Kacheri' presented by Varsha on the Mridangam, Vivek on Dholak, Zubin on Tabla and Govind on Ghatam.

'Koli Dance' followed the musical events. Next came a light comedy by Std. IX C. The play was 'The Boy comes Home.'

After these fantastic performances, there was the Prize distribution ceremony. The Chief Guest then addressed the audience and the programme came to an end after the vote of thanks by Ms. Shilpa Sanghavi. This art festival was really an unforgettable event.

**Q.4.** [Students are expected to write a detailed programme on any one occasion]

**(1) Teacher's Day programme in your school.**

**(a)** Arrival of the teachers in the hall

(b) Speech by the Head Girl followed by speech and felicitation of the Principal.

(c) Felicitation of deserving teachers.

(d) Cultural programmes such as :

- (i) group dance, (ii) songs, (iii) skits, (iv) miming

(e) Vote of thanks.

(2) **An exhibition of science projects arranged in your classroom.**

- (a) All articles carefully arranged.
- (b) Principal and head teacher invited and welcomed.
- (c) The head girl shows the dignitaries round the exhibition and explains the projects.
- (d) The speech given by the Chief Guests. (Principal, Head teacher)
- (e) Vote of thanks.

(3) **A wedding anniversary/birthday celebration for your grandparents that you have arranged with your family.**

- (a) Grandparents taken to the hotel as a surprise to them.
- (b) Candles lit, cake cut and song sung by the children, grandchildren and other relatives.
- (c) Speech given by the eldest child (son or daughter).
- (d) Reply by the grandparents.
- (e) Dinner party.
- (f) Vote of thanks.

**Q.5. (1)** If mobile phones are not switched off, they can ring at any time causing disturbance. The audience will get disturbed and look here and there to see whose phone is ringing and the dignitaries and people on the stage too will get disturbed.

(2) She requests the people to be seated because the Head Girl Miss Shubhada Murarka was going to escort the dignitaries to the dais.

(3) At the beginning of the programme, the compere addresses the Head Girl by name.

(4) Yes, we have a School Anthem. It tells us about perseverance, and hard work. It tells us to spread peace and love and not be biased and partial in our lives.

(5) In our Indian culture, we consider our guests to be worthy of the respect and devotion, that we give to God.

(6) We learn that Shri Charudatta Diwan is a very eminent personality from the field of Art and Culture. He is a renowned artist, a painter of international repute and a proud recipient of many prestigious awards. Besides, he is also the President of Kala Ranjan Academy.

(7) The compere thanks the Principal for welcoming the Chief Guest with a token of love and appreciation.

(8) (a) **Mr. Avadhoot Pathak**, the President of Balanand Academy.  
 (b) **Ms. Shubhada Murarka**, the School Captain and Cultural in-charge.  
 (c) **Mr. Ajinkya Parakhi**, Their inspiring dynamic Principal.

(9) The book is a volume comprising of photographs of all the beautiful and unique pieces of art that were displayed in the auditorium. These were the artistic and skilful contributions of the students.

(10) The compere thanks the Chief Guest because he released a special book on the occasion and formally inaugurated the art festival.

**(11)** Students of standard X A Sahil will give a vocal rendition and Varsha, Vivek and Govind are taking part in the Taal Kacheri by playing on their musical instruments.

**(12)** Rendering of beats on various drum instruments or a kind of rhythm orchestra.

**(13)** Vocal rendition is people singing the ragas and musical rendition is playing the ragas on musical instruments such as Mridangam, Dholak, Tabla and Ghatam.

**(14)** **(a)** After the Taal Kacheri has ended said the compere.

**(b)** And after the light comedy ‘The Boy Comes Home’ has been acted on the stage. Which was indeed a fantastic performance.

**(15)** ‘Butterflies in the stomach’ means getting a little nervous.

## Grammar / Language study

**Q.1.** (1) Before we draw the curtain, let us stand in attention for the National Anthem.

(2) I had butterflies in my stomach just as I was to receive my Report Card.

(3) After I took the medicine, I was relieved of the pain.

(4) Before we do the experiment in the laboratory, let me appraise you all about it.

(5) The minister was escorted by his personal bodyguards.

(6) Sorrowful times are likened to darkness.

**Q.2.** (1) Direct object - food Indirect object - the beggar  
(2) Direct object - me Indirect object - to the party  
(3) Direct object - cake Indirect object - me  
(4) Direct object - jewellery Indirect object - friend  
(5) Direct object - stories Indirect object - us

### **Topic 3.3 : A Crow in the House**

### **Answer the following**

**Q.1.** The dog in the house could rush to catch the crow and want to bite it. When the dog saw the crow, Caesar, approaching he could growl and try to frighten the crow.

Harold the hornbill could have objected to Caesar's behaviour by pecking at him and screaming, swearing and scolding Caesar.

Q.2.	Caesar's Pranks at home	Caesar's Pranks Outside
	<p>Caesar joined the family at meal time. He danced about on the dining table. He hopped about the table emptying a match-box, overturning a vase or ripping the daily newspaper to shreds or tugging at the tail of one of the dogs. Caesar cawed and flapped his wings irritating everyone. Caesar would perch on top of Harold the hornbill's cage and peek at the bird's feet.</p>	<p>Caesar visited neighbouring houses and stole pens, pencils, hair ribbons, combs, keys, shuttle cocks, toothbrushes and false teeth. Caesar spied on children going into the bania's shop and snatched sweets from them. He stole the clothes pegs. He robbed the neighbour's beans.</p>

**Q.3.**

### Life story of Caesar



1. Young crow is saved by the narrator.



2. The crow is named Caesar.



3. Caesar begins to upset things at home.



4. Caesar objects to being caged.



5. Caesar begins to trouble neighbours.



6. Neighbour flings a stick at Caesar.



7. Caesar passes away.

**Q.4.** (1) Caesar learnt to talk a little as most ravens do. He did it in a cracked throaty voice. Caesar made it a habit to sit outside the window for hours banging on the glass and calling out 'Hello, Hello'. When the narrator opened the gate on his return home from school, Caesar heard the click of the gate and would rush to the door, hopping, skipping and jumping, Caesar would say 'Hello, Hello' to the narrator and sit on his arm and say 'kiss kiss'. Caesar would then place his head gently against the narrator's mouth.

(2) Caesar spied on children going into the bania's shop. These children went there to buy sweets. When the children left the bania's shop with their sweets, Caesar managed to snatch the sweets from the children.

**Q.5.** Yes, I have a pet. She is Bubbles, my cute dog. She loves me very much and feels very sad when I go to school. She cries till I reach home in the afternoon. When I reach home and give her, her lunch she is very happy. She follows me the whole day, afraid that I will go out again and leave her alone. If I stand up, she stands up. If I walk towards the kitchen she walks towards the kitchen. All my family members laugh to see Bubbles acting in this manner.

**Q.6.** (1) The young crow had fallen from its nest onto the road. There was danger of being crushed by a cart or a tonga, or of being seized by a cat.

(2) The other members of the author's family are the author's grandfather and grandmother and aunt Mabel.

(3) Yes, the author's grandfather liked animals. Grandfather helped the narrator to bring the crow around. Grandfather and the narrator fed the crow by prizing its beak gently open with a pencil, pushing in a little bread and milk and then removing the pencil to allow it to swallow. Grandfather and the narrator varied the crow's diet with grandmother's home-made plum wine.

(4) The crow who was named Caesar asserted himself and did exactly what pleased him such as jumping and dancing on the dining table at times disrupting things.

(5) Caesar must have heard the other members of the family greeting one another. He must have heard the narrator and the grandfather saying 'hello' to him and the memorised the words and began using these words himself.

(6) Whenever aunt Mabel spoke to a pet or came in contact with one of the pets, something went wrong. This is the reason it is said that aunt Mabel was never a success with pets. Here when aunt Mabel leaned forward to be kissed

by Caesar, his attention was shifted to aunt's gleaming spectacles, Caesar thrust them with his beak and knocked them off.

(7) Caesar went to the neighbour's houses and stole things such as pencils, pens, toothbrushes, etc. The narrator made a collection of these items specially of toothbrushes that Caesar loved to steal. The different toothbrushes belonged to different neighbours. This means that the neighbours were represented in the narrator's house by a toothbrush.

(8) When Caesar broke his leg, the narrator carried him home, washed and bandaged his leg as best as he could. When Caesar died, the narrator dug a shallow grave and buried him there with all the toothbrushes and clothes pegs that Caesar had taken.

**Q.7.** The narrator and his grandfather carried the unfortunate bird home and they washed and bandaged his leg as best as they could. The leg, however would not heal. Occasionally they gave Caesar grandmother's homemade wine that kept him going for some time, but finally the crow, Caesar died.

## Comprehension

### Extract - 1

**Q.1.** (1) Caesar took over the administration of the house.

(2) We gave him occasional doses of grand mother home-made plum wine.

(3) We removed the pencil to allow it to swallow.

**Q.2.** (1) True

(2) False - The young crow had fallen from the nest.

(3) False - The crow was offered freedom, but he did not take it.

(4) False - The narrator and his grandfather did their best to bring the crow around.

**Q.3.** (1) The sorry condition of the crow was that the crow's beak was gaping and his head was dropping.

(2) When the crow fell, it faced the danger of being crushed by a cart or a tonga or being seized by a cat.

(3) Grandmother, aunt Mabel and some of grandfather's pets objected to Caesar remaining in the house.

**Q.4.** (1) freedom - Abstract Noun

(2) administration - Common Noun

(3) aunt - Common Noun, Mabel - Proper Noun

**Q.5.** The narrator and his grandfather decided to feed the crow. They fed it by forcefully opening its beak in a gentle manner with the help of a pencil, and pushing in some bread and milk, then removing the pencil to allow the crow to swallow what was in its mouth.

### Extract - 2

**Q.1.** (1)-(d), (2)-(b), (3)-(a), (4)-(c)

**Q.2.** (1) (a) He would hop across a table to empty a match-box of its contents.

(b) Grandfather picked marigolds off the carpet.

(c) Caesar had become snobbish and did not wish to mix with his own kind.

(d) Harold would swear and scold.

(2) (a) across, beetles, grub, raven

(b) scold, snobbish, soup, squabble

**Q.3.** (1) On his own, Caesar found his own grubs or beetles in the garden.

(2) The narrator gave Caesar a small bowl of meat and soup and vegetables.

(3) Caesar would empty a match-box of its contents or rip the daily paper to shreds or overturn a vase of flowers or tug at the tail of one of the dogs.

(4) Caesar objected with fierce cawing and flapping.

**Q.4.** (1) about, on (2) across (3) off (4) at

**Q.5.** Caesar was always restless and fidgety. He could not be quiet in one place. He was always investigating things. He would hop across a table and empty a match-box of its contents, or rip a daily newspaper to shreds, or overturn a vase of flowers, or tug at the tail of a pet dog in the family.

### Grammar / Language study

**Q.1.** (1) (a) fidgeting (b) freedom (c) gleaming  
 (d) fierce (e) occasional (f) objected  
 (g) shallow (h) snobbish

(2) (a) unacceptable (b) scraps (c) success  
 (d) aroused (e) pest (f) misfortune  
 (g) regulate (h) scold

**Q.2.** (1) shallow (2) gardening  
 (3) unfortunate (4) occasional

**Q.3.** (1) (a) teacher (b) haunted (c) monster  
 (d) fluttering (e) squabble

(2) (a) representative (b) correct (c) easy  
 (d) Gracy (e) entertained

### Topic 3.4 : The Brook

#### Answer the following

**Q.1.** (1) The speaker is the brook.  
 The poet Alfred Lord Tennyson is speaking as the Brook.

(2) The lines that are repeated are :  
 'For men may come and men may go,  
 But I go on for ever'  
 These lines mean that birds, animals, men, etc., will not last forever. One day they will come to an end, but the brook will continue to flow forever.

(3) The brook joins the river near Philip's farm.

(4) The brook flows down a valley, by thirty hills, by twenty thorpes, a little town, half a hundred bridges and finally by Phillip's farm.

(5) (a) 'I chatter over stony ways.'  
 (b) 'I babble on the pebbles.'  
 (c) 'I chatter, chatter, as I flow.'

**Q.2.** (1) **ridges** - lines joining two surfaces.  
 (2) **brimming** - filled to the brim - overflowing  
 (3) **eddying** - area of water moving in circular direction  
 (4) **babble** - make noise while flowing  
 (5) **fallow** - empty land  
 (6) **trout** - a kind of fish  
 (7) **netted** - rays cut with shadows

**Q.3.** (a) I chatter over stony ways  
 (b) I bubble into eddying bays  
 (c) And here and there a lusty trout

And here and there a grayling  
(d) I make the netted sunbeam dance  
Against my sandy shallows.

**Q.4.** I am a brook. I came into existence much before you kids and your families were aware about me and I will continue to flow and join the river for years and years.

I flow along many pathways, between mountains and along ridges, below bridges and across lonely but lovely terrain. I make chattering sounds as I flow over pebbles and stones. I do not travel along a straight path, but go about in curves and curls. I move along waiting to see the brimming river into which I can flow.

Along my path, you can see beautiful and colourful flowers. There are fertile and lush lands, here and there are beautiful cottages and along the grasslands there are cows moving along munching grass and drinking from my flow of water.

I do not travel quietly. I sometimes slide and sometimes gush forth specially when I am moving from a higher level to a lower level. I make different sounds as I flow along. Sometimes I bubble, sometimes I chatter. I often make musical sounds like little sharps or trebles. I am a very happy creature. I love moving to and fro and what I love the most is meeting the brimming river that is just waiting to greet me.

I love my life. I know that this life will go on for years and years.

**Q.5.** The river, the sky, the clouds, the stars, the Sun, the moon, the seas and oceans can say what the brook said.

**Q.6.** The brook winds its way and as it does so, it sees some graylings or some trouts around. As it travels, foamy flakes fall on it. The brook slips and slides and glooms and glances as it makes its way across its path. When the sun beam falls on the flowing water of the brook, it makes the sun beam dance. The

brook murmurs under the moon and stars and loiters around small plants. It is just waiting to meet the brimming river.

### Comprehension

#### Extract - 1

**Q.1.** (1) The brook comes from haunts of coot and hern.

(2) The last place is Phillip's farm.

(3) It chatters as it moves over stony ways.

(4) It is set with willow-weed and mallow.

**Q.2.** (1) The words are chatter, bubble, babble.

(2) (a) stony ways (b) eddying bays (c) brimming river

(3) (1)-(c), (2)-(d), (3)-(b), (4)-(a).

(4) The rhyme scheme is abab.

(5) Oxymoron - opposite expressions are added for poetic effect.

**Q.3.** The brook comes from haunts of coot and hern, flows down the valley, hurries down the thirty hills, slips between ridges, passes by twenty thorpes, passes by a small town and around fifty bridges till it passes Phillip's farm. Now the brook can join the brimming river.

### Grammar / Language study

**Q.1.** (a) I bubble into eddying bays.

I babble on the pebbles.

(b) By many a field and fallow

(c) I slip, I slide, I gloom, I glance

(d) Against my sandy shallows.

**Q.2.** from, out, between, by, on, over, about, in, out, upon.

**Q.3.** (a) With many a **curves on my banks**.

- (b) By many a **field and fallow**.
- (c) And many a **foreland set**.
- (d) With many a **silvery waterbreak**.

**Q.4. (1)** The rhyme scheme is abab.

(2) (a) Antithesis - Two words in and out have opposite meanings.

(b) Repetition - 'men' is repeated for poetic emphasis.

Antithesis - two words 'come' and 'go' have opposite meaning.

(c) Alliteration - the sound of letter 's' and 'g' are repeated for poetic beauty.

(d) Alliteration - sound of letter 'g' is repeated for poetic effect.

## Topic 3.5 : News Analysis

## **(A) CLOSED SHOES NOT ALLOWED IN EXAMINATION HALLS**

**Q.1.** (1) gave out, sent  
(2) those appearing for the test or exam  
(3) those supervising the examinees

**Q.2.** The Shivam Institute of Innovative Technology, Bengaluru is conducting the test.

**Q.3.** (1) Closed footwear is not allowed in the examination hall because candidates may try to hide some matter written on paper, so that they can copy when the examination begins. If the candidates are wearing open footwear, they will not be able to hide any matter/paper that can be used for copying.

**(2)** Electronic gadgets may ring and disturb the candidates who have to concentrate on their examination. Electronic gadgets can be used to get answers from outside sources, hence, these gadgets are not allowed in the hall.

(3) The invigilators must be very vigilant and must keep moving all around the examination hall. Examinees must not be allowed to look anywhere except in their answer booklets.

**Q.4.** This news is published in newspapers to inform other institutes that they too can adopt such measures to eliminate copying.

## **(B) RITIKA TAKES A BREAK FROM ACTING**

## (C) MOST DANGEROUS TIME IN HISTORY

**Q.1.** 'Mankind' here refers to the human species. It includes men, women and children.

**Q.2. Planet** - planet on which we live, world.

**Q.3.** This item has been given as news in other newspapers in order to alert the public and make man realise what is happening with the whole human race on the earth. Everyone will not be reading the 'Guardian'. Only a few people will get this information, hence it has been published in all newspapers to make everyone aware of global change, overpopulation and epidemic diseases.

**Q.4.** **(a)** Social **(b)** Cultural / Political **(c)** Science related **(d)** Social

**Q.5.** Other items are advertisements, reader's verdict on movies, reports, results of candidates who appeared for government exams, death announcements, sports news, etc.

#### **(D) QUICK CURE FOR ALL AILMENTS ?**

**Q.1.** **(1)** collect in huge/large numbers  
**(2)** those who believe in someone

**Q.2.** The author is trying to make us think about the issue. It does not seem possible that there is a quick cure for all ailments. How can this be true? If there was such a cure, no one would be sick. This is an impossibility. Hence, there is a question mark put at the end of the title.

**Q.3.** The first part of the news is reliable and the last part too is reliable. The crowds can be seen gathering at a tiny settlement near Ambegaon waiting to get the medicine.

The last part tells us about the increase of patients in the Civil Hospital at Ambegaon. This is told by a doctor from that very hospital.

The news that Miribaba claims his powder can cure all sorts of diseases, and that this powder has been developed from a special herb in the Himalayas is unreliable.

The fact that Miribaba is not willing to give the exact name and source of the herb is also unreliable.

**Q.4.** I personally think that Miribaba and his followers will not like the news because he is portrayed as a shady character. They will especially not like the last part of the news where Dr. Karnik of Ambegaon Civil Hospital reveals that the number of patients in the hospital has increased.

**Q.5.** When you fall ill, visit the doctor at his clinic and reveal all your symptoms so that the doctor pinpoints the problem and gives the correct medicine to cure you of your illness.

#### **Answer the following**

**Q.1.**

<b>News Items</b>	<b>Good news Bad news</b>	<b>Reliable Unreliable</b>	<b>Interesting Uninteresting Boring</b>	<b>Others</b>
<b>(a)</b>	Good news	Reliable	Interesting	Copying will become less
<b>(b)</b>	Bad news	Un reliable	Interesting	Fans will be disappointed
<b>(c)</b>	Bad news	Reliable	Interesting	Gives us insight
<b>(d)</b>	Bad news	Reliable	Interesting	Helps to open our eyes

**Q.2.** [Students are expected to write a letter on any one of the given topics.]

**(1)**

Grace Villa,  
Bandra,  
Mumbai - 400 051.  
26th Jan., 2017

The Principal  
Orchid High School,  
Fort,  
Mumbai - 400 001.

**Sub : Permission to start a news bulletin.**

Respected Sir / Madam,  
I, Rachel Rodrigues, the Head Girl studying in your esteemed institution, wish to start a news bulletin for standard X students. I have heard a lot about the news bulletin and this is a chance to get all the students aware of what is going on in the world and in our nation.

This will be a one-page bulletin which will be published every week. A different group of students will be put in charge to see to the preparation of the bulletin every time.

Respected Sir/Madam, I earnestly hope and pray that you give me the chance to begin with this news bulletin.

Hope to hear from you soon, Sir/Madam

Thanking you in anticipation.

Your devoted student,  
Rachel Rodrigues

**(2)**

Rose Villa,  
II X lane,  
Byculla,  
Mumbai - 400 027.  
24th July, 2017

The Principal  
Gloria Convent High School,  
Byculla, Mumbai - 400 027.

**Sub : Need for old newspapers for classroom activities.**

Respected Madam,

I, Sarah Athaide the assistant Head Girl, studying in Std IX-A, wish to make a request on behalf of Std IX students. We need old issues of newspapers that are there in our library for some educational activities in our classroom. We require cuttings and news clippings from these newspapers.

Since, we will be cutting certain headlines and news from the newspapers, we will not be able to return them to the library, but I assure you, we will use them in a responsible manner.

We hope that you grant us this request.

We hope to hear from you soon,

Thanking you in anticipation.

Your devoted student,

Sarah Athaide

## Topic 3.6 : Think Before You Speak!

### Answer the following

**Q.1.** (1) they are open all the time.

(2) the words we speak have to pierce through the teeth.

(3) before a word is spoken it has to pass through this wall.

(4) it is difficult to take them back.

**Q.2.** (1) I personally do not think so. Disraeli was just trying to impress upon us that we must talk less and listen more. This is good for us and for all those with us.

(2) Yes, I think he was trying to do just that and I am sure he succeeded very well.

(3) Man's ears do not have lids, hence the sound can pass through, there is nothing that can spill from man's ears, hence no fence or lid is necessary.

On the other hand things can spill from our mouth when we are eating, hence we can shut down our jaws and shut up our lips to prevent this. Our teeth also help us to chew and bite our food which is necessary for the digestion of food. Our lips and teeth are biologically important parts of our body.

(4) Yes, I remember in the lower standard, my friend and I had an argument. We shouted and screamed at each other. My friend started it but I was no better than my friend. I too began speaking harshly. My older sister happened to come by. She made us stop and explained that we must not lose our temper. My friend and I realised that we were wrong and apologised to each other. We have never allowed such a thing to recur till today.

(5) Before we open our mouths to speak we must ask ourselves three questions. The first one is 'is it true?' Are we sure about the truth of the matter or are we just

listening to what others are saying. The second question is - 'is it pleasant?' are we using harsh words and causing anger and unpleasantness? The third question is - 'is it useful?' Will our harsh words benefit the other person or cause pain and anger?

If we bear these questions in mind, we will learn how and when to open our mouths and how to control our anger.

**Q.3.** The spiritual teacher tried to explain to the young man that the spoken word cannot be taken back. Just as the tiny bits of paper flew away with the wind, our words fly away from us and hurt others. Once we have spoken the words aloud, it is very difficult to take them back, hence we must think before we speak in anger.

**Q.4.** I went quickly to my spiritual teacher for advice because I had spoken very harsh and unkind words to my friend and thus hurt my friend. I wanted to know how to make amends for what I had done.

I explained everything to my spiritual teacher. After listening to me, my teacher told me to take a blank sheet of paper and write the harsh words I had used, I did whatever my spiritual teacher asked me to do. My teacher then told me to tear the paper into a hundred tiny pieces and throw them out of the window. I did that too. It was a very windy day and the pieces flew all over. Next the teacher asked me to go and collect all the pieces. He knew it would be difficult, but I had to do it. I went out and half an hour later, I returned without even one piece. I was completely exhausted.

My teacher then explained to me that once we say something, it is very difficult to take the words back. The harm is already done, hence we must think before we open our mouth.

I learnt a very good lesson from my teacher.

## Comprehension

**Q.1.** (1) Once you have spoken a word you cannot get it back.  
(2) Unspoken words are like thoughts in our minds.  
(3) Before a word is spoken, it has to pierce through the two walls.  
(4) Man was meant to listen more and talk less.

**Q.2.** (1) Ears are compared to funnels, open all the time.  
(2) He would have had two mouths and only one ear.  
(3) Once you have spoken a word, you cannot get it back.  
(4) The first fence is the two rows of teeth and the second one are the two lips.

**Q.3.** (1) False - Before a word is spoken, it has to pierce through the two walls or fences.  
(2) False - Man was meant to listen more and talk less.  
(3) True  
(4) True

**Q.4.** (1) (a) Before, through (b) twice, before (c) back  
(2) (a) nature (b) was

**Q.5.** Whenever we wish to say something, our words must pass through two barriers. The first one is the two rows of teeth and the second one is our lips. Before a word is spoken it has to pierce through these two fences. Hence we must be very careful what we want to say and we must think twice before the words leave our mouth. We must always bear in mind that once a word is spoken we cannot take it back.

## Grammar / Language study

**Q.1.** (a) (1) You must change before it is too late - verb.  
(2) I do not have change in my purse - noun.

**(b)** (1) The show must go on - noun.  
(2) You must show me your artwork - verb.  
**(c)** (1) Throw the ball as high as you can - verb.  
(2) The fielder's throw is simply great - noun.  
**(d)** (1) I shall return tomorrow - verb.  
(2) I bought a return-ticket to Churchgate - noun.  
**(e)** (1) Exercise benefits everybody - verb.  
(2) We will always reap the benefit of our hard work - noun.

**Q.2.** (1) blank (2) harsh, unkind  
(3) young, spiritual (4) many, tiny

**Q.3.** (1) The girls practised before the final match.  
(2) The cricketers stayed at the Taj hotel.  
(3) I speak to my best friend almost every day.  
(4) He drove as carefully as possible.  
(5) The dogs barked whenever a beggar passed.  
(6) He reads the newspaper quite often.  
(7) We must think before we utter a word.

# मराठी सुलभभारती

## भाग - दोन

### ८. शब्दांचे घर

#### स्वाध्याय

प्र.१. (अ) स्वर      (इ) गाणे      (आ) काना - मात्रा - वेलांटी

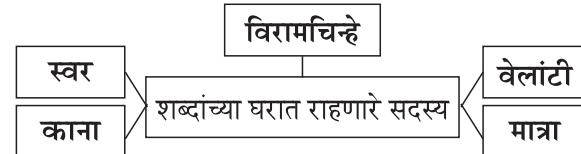
प्र.२. (१) घरात होता, काना - मात्रा वेलांटीचा मेळ<sup>एकोप्याने खेळायाचे सगळे अक्षर - खेळ.</sup>

(२) एखाद्याची धुसफुससुदधा हवीहवीशी छान<sup>प्रत्येकाला अर्थे वेगळा सुखदुःखाचे भान.</sup>

(३) कानोकानी कुजबुजताना अंकुर मनकोवळा<sup>वाट मोकळी होऊन लागे कवितेचाही लळा.</sup>

#### कृतिपत्रिका

प्र.१. (अ) (१) (i)



(ii) रेघांचे

(२) (i) विरामचिन्हांची

(ii) शब्दांच्या घरात

(३) वेलांटी, काना, मात्रा सगळे घरात एकोप्याने राहायचे आणि  
अक्षर खेळ खेळायचे.

(४) भाषेमुळे एकमेकांशी संवाद साधला जातो. भाषेमुळे आपण  
अनेक जणांशी मैत्री करू शकतो. भाषेमुळे विचार करण्याची  
क्षमता वाढते. समूहात रहाण्यासाठी भाषेचा उपयोग होतो.  
आपल्या मनातील भावना, विचार, कल्पना, अनुभव आपल्याला  
भाषेमुळे व्यक्त करता येतात. भाषेमुळे आपण आपल्या

मनातील आनंद, द्वेष दुसऱ्यापर्यंत सहजपणे पोहोचवू शकतो.  
भाषेमुळे आपला शब्दसंग्रह वाढतो. ज्ञान वाढते. भाषेमुळे  
व्यवहारातील कामे सुलभ होण्यास मदत होते. भाषेमुळे आपण  
बोलणे, वाचणे, लिहिणे व आकलन करणे ही कौशल्ये विकसित  
करू शकतो.

(आ) प्र.१. कल्पणा इनामदार

प्र.२. घरात होता, काना-मात्रा-वेलांटीचा मेळ<sup>एकोप्याने खेळायाचे सगळे अक्षर-खेळ</sup>

प्र.३. घरात काना, मात्रा, वेलांटी एकत्र रहायचे आणि सर्वजन मिळून  
आनंदाने अक्षरांचा खेळ खेळायचे. अशी सुंदर कल्पना या  
ओळींमध्ये मांडलेली आहे. काना, मात्रा, वेलांटी लावल्याने  
अक्षर, शब्द तयार होतो. शब्दांच्या घरात हे सारे एकत्र रहातात  
ही कल्पना मजेशीर वाटल्याने या ओळी आवडल्या.

प्र.४. एकमेकांशी न भांडता सर्वांनी एकोप्याने, गुण्यागोविंदाने राहावे.

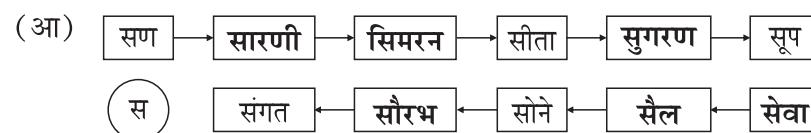
#### खेळ्या शब्दांशी

(अ) (१) धुसफुस (२) अंकुर (३) कानोकानी

(आ) (१) सुंदर (२) हळवे (३) मनकोवळा (४) मोकळी

(इ) नजर → रचना → नाच → चमचा → चाफा

#### खेळ खेळ्या



#### शब्दकोडे सोडवूया

\* (१) नंतर (२) नंजीक (३) समोर (४) वर

(५) प्रमाणे (६) साठी (७) सकट (८) खाली

(९) पुढे (१०) सह (११) मागे

## वाचा

मुलांनो, शाळेत तुम्हांला अनेक मित्र असतात. तुमची काळजी घेणारे, तुमचे आरोग्य जपणारे असे अनेक मित्र तुमच्या सभोवती आहेत. कोण बरे आहेत हे मित्र? असा प्रश्न तुम्हांला निश्चितच पडेल. आपल्याला फळे, फुले सावली देणारे वृक्ष; आपल्याला पिण्यासाठी पाणी देणाऱ्या नद्या, श्वसनासाठी ऑक्सिजन देणारी हवा, आपण ज्यावर निवांतपणे राहतो अशी जमीन अर्थातच आपल्या सभोवतालचा निसर्ग हाच आपला खरा मित्र आहे.

प्रकल्प : विद्यार्थ्यांनी स्वतः करा.

## ९. वाचनाचे वेड

### स्वाध्याय

प्र.१. (अ) सोनालीने आपल्या अभ्यासाशिवाय दररोज किमान दोन पाने अवांतर वाचावीत. तिला वाचनाची आवड लागावी असे सोनालीच्या आईला वाटत होते.

(आ) कथांचा सारांश लिहून काढण्यासाठी सोनालीने पुन्हा एकदा पुस्तक वाचते असे आईला सांगितले. तिला लागलेली ही वाचनाची गोडी पाहून घरातील सर्वांना नवल वाटत होते.

(इ) सोनालीला प्रोत्साहन देण्यासाठी तिच्या बाबांनी वाढदिवसाला एक छानसे पुस्तक तिला भेट दिले आणि सोबत तिच्या वर्गातील सान्याच मुलामुलींना एकेक पुस्तक भेट स्वरूपात दिले.

प्र.२. (अ) सोनालीला अवांतर वाचनासाठी प्रवृत्त करण्याकरिता आईला यश येत नव्हते. एका शाळेत पाहुणी म्हणून गेल्यावर तेथील मुलांना सांगण्यासाठी, एक गोष्ट सोनालीने पुस्तकातून निवऱून द्यावी, यासाठी आईने सोनालीच्या हातात एक गोष्टीचे पुस्तक दिले.

(आ) आईने दिलेल्या पुस्तकातील सर्वच कथा सोनालीला आवडल्या पण त्यातली कोणती निवडावी ते तिला समजेना म्हणून आईने वाचलेल्या सर्व कथांचा सारांश सोनालीला लिहायला सांगितला.

(इ) शाळेत गेल्यावर सोनालीने बाईंना आपण आईला काय आणि कशी मदत केली ते सांगितले, सोबत एक कथाही ऐकवली. बाईंनी प्रथम

आईला मदत केली म्हणून तिचे अभिनंदन केले व वर्गात छान गोष्ट सांगितली म्हणून कौतुकाने शाबासकी दिली. सोनालीला खूप आनंद झाला आणि तिने वेगवेगळी पुस्तके वाचून त्यातील आवडलेले प्रसंग व ओळी लिहून ठेवण्याचे ठरवले म्हणून आता तिला पुस्तके वाचत जा असे सांगण्याची गरज उरली नाही.

प्र.३.

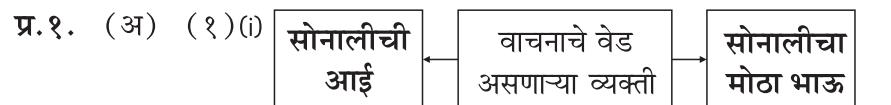
टी.व्ही.  
हिंडिओ

मुलांचे अवांतर वाचनाव्यतिरिक्त  
मैत्री असणारे घटक

कॉम्प्युटर  
मोबाइल

### कृतिपत्रिका - १

उतारा क्र. १



(ii) (अ) वाचन (ब) घर  
 (२) (i) (अ) आनंद (ब) गोष्टीचे पुस्तक  
 (ii) सोनालीला अवांतर वाचनासाठी प्रवृत्त करण्याकरिता आईला यश येत नव्हते.

(३) प्रत्येकाला आयुष्यात वेगवेगळे छंद असतात. छंद म्हणजे जोपासलेली आवड. प्रत्येकजण आपल्या मोकळ्या वेळेत आपला छंद जोपासत असतो. वाचन, गायन, नृत्य, चित्रकला असे अनेक छंद मुले जोपासतात. माझा आवडता छंद आहे सायकल चालवणे. खरे तर माझ्या बाबांनी मी चौथीत होतो तेव्हा उंची वाढण्यासाठी मला सायकल आणली होती. बाबांनी सायकल चालवायला शिकवली. नंतर मात्र सायकल चालवणे हा माझा छंद कधी झाला ते समजलेच नाही. मला जेव्हा जेव्हा वेळ मिळतो तेव्हा मी सायकल चालवण्याचा आनंद घेतो. सायकल चालवताना माझ्यात एक वेगळाच उत्साह संचारतो. एक वेगळीच ऊर्जा व आनंद मला त्यातून मिळतो. शिवाय व्यायामही होतो. सायकलसाठी कोणतेही इंधन लागत नाही. सायकल चालवल्याने माझे मन प्रसन्न व प्रफुल्लित असते.

सायकल ही माझा आरोग्यदायी मित्र बनला आहे. मी तिची खूप काळजी घेतो. असा हा मला निरोगी ठेवणारा छंद मी कायमच जोपासणार आहे.

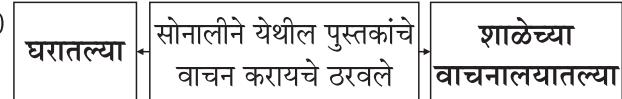
कृतिपत्रिका - २

उत्तारा क्र. २

<p>प्र.१. (अ) (१) (i)</p> <p>(ii) (अ) एक-दीड तास</p> <p>(२) (i)</p> <p>(ii) सारांश</p> <p>(३)</p>	<p>सोनालीला पुस्तक वाचताना पाहून नव्हल वाटणारे</p> <p>आजी आजोबा बाबा दादा काका काकू</p> <p>(ब) दहा</p> <p>सोनालीला उत्सुकता वाटणाऱ्या गोष्टी</p> <p>पुढची कथा काय आहे पुढच्या कथेत काय लिहिले आहे.</p> <p>फक्त अभ्यास एके अभ्यास करायचा मला कंटाळा येतो शाळेत होणाऱ्या प्रत्येक स्पर्धेत – उपक्रमात भाग घ्यायल मला आवडतो. चित्रकला स्पर्धेत चित्र काढायल आवडतात. खेळांच्या स्पर्धामध्ये सहभाग घेऊन मित्रांना हरवायला खूप मजा येते. खेळायला गेल्यावर खूप ताजेतवाने वाटते. स्नायूंचा खूप व्यायाम होतो. भूक चांगली लागते आणि झोपही पटकन लागते. शाळेत होणाऱ्या वक्तृत्वस्पर्धेतही भाग घ्यायला आवडतो व्यासपीठावर उभे राहून सर्वांसमोर आपले विचार मांडताना माझा ऊर अभिमानाने भरून येतो. अशाप्रकारे सगळीकडे सहभागी होणे मला आवडते.</p>
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उत्तारा क्र. ३

प्र. १. (अ)



(ii) आईने सोनालीचे घरातल्या साच्यांपुढे कौतुक केल्यामुळे सोनालीचा आनंद गगनात मावत नव्हता.

( २ ) (i) सोनाली वहीमध्ये लिहून  
ठेवत असे त्या गोष्टी → आवडलेल्या ओळी  
→ एखादा प्रसंग

(ii) आईने

(३) सहामाही परीक्षा संपल्या होत्या. दिवाळीची सुट्टी होती. आमच्या परिसरातच बालविद्या भवन म्हणून संस्था आहे. तेथे सुट्टीमध्ये वेगवेगळे उपक्रम राबवले जातात. मी आणि माझ्या मित्राने तेथे सुलेखन वर्गामध्ये प्रवेश घेतला होता. सुलेखन म्हणजे सुंदर हस्ताक्षराची कला. आमचे हस्ताक्षर सुधारावे, अक्षरांना सुंदर वळण लागावे, अक्षर सुस्पष्ट असावे, म्हणूनच आम्ही या उपक्रमात भाग घेतला होता. आम्हाला तेथे अक्षरांची उंची, पसरटपणा, गोल, वाटोळे, चौकोनी इ. आकार, वळण इ. गोष्टींमध्ये विविधता आणून सुलेखनात सौंदर्य कसे आणता येते हे शिकवले गेले. सुलेखन हे आपले आंतरिक प्रतिबिंब असते असे म्हणतात. त्यातून आपले व्यक्तिमत्त्व दिसते. पुढील अभ्यासक्रमासाठी आणि भावी आयुष्यात आम्हाला त्याचा उपयोग होईल म्हणून आम्ही हा वेगळा उपक्रम केला. त्यातून आम्हाला बन्याच गोष्टी शिकायला मिळाल्या.

## खेळया शब्दांशी

(अ) (१) यशस्वी होणे (२) लिहन ठेवणे.

( ३ ) खुप आनंद होणे. ( ४ ) आश्चर्य वाटणे.

(आ) (i) आमूलाग्र - वाक्य : 'श्यामची आई' हे पुस्तक वाचल्यावर, लीनाच्या वर्तनात आमलाग्र बदल झाला.

(ii) शाबासकी - वाक्य : सुंदर चित्र काढत्यावर मिनूला बाईंनी शाबासकी दिली.

(iii) अवांतर - वाक्य : अवांतर वाचनामुळे आपले ज्ञान वाढते.

(इ) (१) पारितोषिक (२) विजय (३) कथा

(४) साहाय्य (५) रस

(ई) विद्यार्थ्यांनी स्वतः करा.

### आपण समजून घेऊया

(उ) आई : आपल्याकडे पाहुणे येणार आहेत, म्हणून आपण पुरणपोळी करूया.

अंकुश : आई, तू बटाट्याची भाजी अनु पुऱ्या कर म्हणजे मी तुला मदत करू शकेन, शिवाय स्वयंपाकही लवकर होईल. जर पाहुणे लवकर आले, तर त्यांना वेळेवर जेवायला मिळेल; पुण पाहुण्यांना आवडेल ना आपण केलेला स्वयंपाक?

### आम्ही बातमी वाचतो.

(१) डॉ. ए.पी.जे. अब्दुल कलाम यांचा जन्मदिवस आपण वाचन प्रेरणा दिन म्हणून साजरा करतो.

(२) वरील बातमी १६ ऑक्टोबरची आहे.

(३) वाचन प्रेरणा दिनाची सुरुवात ग्रंथदिंडीने करण्यात आली. परिसरातील महत्त्वाच्या चौकांत 'वाचन संस्कृती वाचवा' या विषयावर मुलांनी पथनाट्ये सादर केली. 'उत्कृष्ट वाचन' ही स्पर्धा घेण्यात आली. अशा प्रकारे वेगवेगळ्या कार्यक्रमांचे आयोजन करण्यात आले.

(४) इयत्ता सातवीतील शेखर काजळे या विद्यार्थ्यांस 'उत्कृष्ट वाचक' म्हणून बक्षीस देण्यात आले.

(५) विद्यार्थ्यांमध्ये वाचन कौशल्य वाढावे यासाठी शाळेत पुढील उपक्रम घेता येतील.

(अ) विद्यार्थ्यांना वाचण्यासाठी पुस्तके सहज उपलब्ध करून दिली पाहिजेत.

(आ) जास्त पुस्तके वाचणाऱ्या मुलांना वर्षाअखेर बक्षीस द्यावे.

(इ) पुस्तक प्रदर्शन भरवावे.

(ई) लेखक -कवी यांच्याशी गप्पा मारण्याची संधी विद्यार्थ्यांना उपलब्ध करून द्यावी.

## १०. पंडिता रमाबाई

### स्वाध्याय

प्र.१. (अ) 'मला भारतातील सर्व स्त्रिया सारख्याच आहेत. जेथपर्यंत माझ्या शरीरात रक्ताचा एक बिंदुमात्र आहे, तेथपर्यंत आपल्या स्त्री-जातीचे कल्याण व सुधारणा करण्याच्या कामापासून मी पराडःमुख होणार नाही. स्त्री जातीची सुधारणा करण्याचे व्रत मी धारण केले आहे.' या त्यांच्या उद्गारांवरून त्यांना स्त्री जातीविषयी अपार प्रेम होते हे समजते.

(आ) अडीच हजार लोक बसू शकतील असे प्रार्थनामंदिर बांधताना रमाबाईंनी त्याचा आराखडा स्वतःच तयार केला आणि डोक्यावर विटांचे घमेले वाहून बांधकामाला हातभारही लावला. या प्रसंगातून पंडिता रमाबाई कष्टाळू व काटकसरी होत्या हे जाणवते.

प्र.२. (अ) बिपिनबिहारी मेधावी

(इ) ब्रेल लिपी

(आ) मनोरमा

(ई) पंडिता रमाबाई

प्र.३. सहस्रकातील एकमेव कर्मयोगिनी व सत्शील साध्वी, सूर्यकन्या ही विशेषणे पंडिता रमाबाईसाठी पाठात आलेली आहेत.

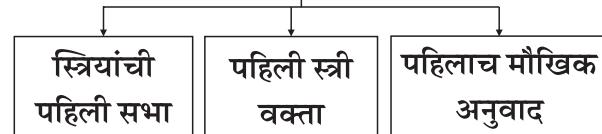
### कृतिपत्रिका - १

#### उतारा क्र. १.



(ii) पंडिता रमाबाईना त्या वेळी बंगाली भाषा येत नव्हती म्हणून त्यांनी स्त्रियांच्या पहिल्या सभेत संस्कृतमध्ये भाषण केले.

(२) (I) स्त्री सभेची वैशिष्ट्ये



(ii) बावीस वर्षे

(३) महात्मा ज्योतिबा फुले यांचा जन्म १८२७ रोजी पुण्यात झाला. महात्मा फुले हे मराठी लेखक, विचारवंत आणि समाजसुधारक होते. स्त्रियांना बाजूला करून समाजसुधारणा होणे शक्य नाही हे जाणून त्यांनी स्त्रियांना शिक्षण देण्याच्या उद्देशाने अँगस्ट १९४८ मध्ये खास मुलींसाठी पुण्यामध्ये पहिली शाळा सुरु केली. आपली पत्नी सावित्रीबाई फुले यांना शिक्षक म्हणून नेमले. त्या काळच्या लोकांना ही गोष्ट पठली नाही म्हणून त्यांनी ज्योतिबा फुले व सावित्रीबाई फुले यांना त्रास दिला पण महात्मा फुलेंनी माघार घेतली नाही. त्या काळी स्त्रियांना उपेक्षितांचे जीवन जगावे लागे. त्यांना पुरुषांप्रमाणे सन्मानाने जगता यावे म्हणून विधवा पुनर्विवाहाचा पुरस्कार केला. बालहत्या प्रतिबंधगृह उघडले. विधवांना खास करून संकटात सापडलेल्या विधवांना महात्मा ज्योतिबा फुले यांची मोलाची साथ मिळाली होती. स्त्रियांच्या उद्धारासाठी त्यांनी केलेले कार्य अद्वितीय असेच आहे.

कृतिपत्रिका - २

उतारा क्र. २.

प्र.१. (अ) (१) (i) न्यायमूर्ती रानडे यांचे घर

(ii) व्याख्यानाला येणाऱ्याने आपल्यासोबत घरातल्या एका स्त्रीला आणल्याशिवाय प्रवेश मिळणार नाही अशी अट घातलेली असे.

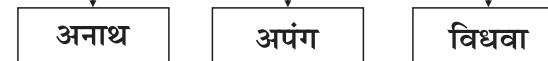
(२) (i) काशीबाई कानिटकर (ii) पुण्यात

(३) स्त्रियांनी शिकले व शिकवले पाहिजे, त्यासाठी आपल्या मातृभाषेचे अचूक ज्ञान प्राप्त केले पाहिजे. शिक्षिका म्हणून उभ्या राहण्यासाठी स्त्रियांना प्रोत्साहन म्हणून शिष्यवृत्त्या दिल्या पाहिजेत अशी शिफारस पंडिता रमाबाईनी हंटर कमिशनकडे केली.

कृतिपत्रिका - ३

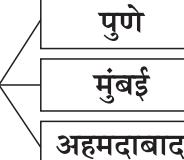
उतारा क्र. ३.

प्र.१. (अ) (१) (i) या स्त्रियांसाठी कार्य करण्याचा रमाबाईचा निश्चय



(ii) स्त्री जातीची सुधारणा

(२) (i) पंडिता रमाबाईनी येथील पुढारी व धनवानांना आपला निश्चय कळवला



(ii) गृहस्थाने दहा हजार रुपये देऊन त्या रकमेत रमाबाईनी त्यांचे चाळीस हजार रुपयांत होणारे काम करून दाखवावे अशी अट घातली.

(३) पंडिता रमाबाई यांचा जन्म २३ एप्रिल १८५८ रोजी कर्नाटक येथे झाला. आईवडिलांच्या मृत्युनंतर त्या कोलकातामध्ये आल्या. भारतातील कोलकाता शहरात भरलेल्या स्त्रियांच्या पहिल्या सभेत बंगाली भाषा येत नव्हती म्हणून त्यांनी संस्कृतमध्ये भाषण केले. अतिशय विद्वान वकील म्हणून प्रसिद्ध असलेल्या बिपिनबिहारी मेधावी यांच्याशी त्यांनी वयाच्या २२ व्या वर्षी लग्न केले. पतीच्या निधनानंतर त्या आपल्या मुलीला घेऊन पुण्यात आल्या. तेथे त्यांनी अनेक व्याख्याने दिली. स्त्रियांनी शिकले पाहिजे. त्यांनी मातृभाषेचे ज्ञान मिळवले पाहिजे. शिक्षिका होण्यासाठी त्यांना प्रोत्साहन

देण्यासाठी शिष्यवृत्त्या मिळाल्या पाहिजेत म्हणून हंटर कमिशनकडे मागणी केली. स्त्री-जातीची सुधारणा करण्याचे व्रत त्यांनी घेतले होते. स्त्री-जातीविषयी अपार प्रेम आणि त्यांचे दुःख दूर करण्याची त्यांना तळमळ होती. पंडिता रमाबाईंनी मुक्तिमिशनची स्थापना केली. तेथे मुलींना स्वावलंबी करण्याच्या हेतूने वेताच्या खुर्च्या विणणे, मोजे विणणे, भांड्यांना कलहई करणे, चित्रे छापणे, दवाखाना चालवणे, घाण्यावर तेल काढणे असे अनेक उद्योग सुरू केले. त्या काळी ही आश्चर्याची गोष्ट होती. कोणतेही काम करताना त्यांनी कधीच कमीपणा मानला नाही. रमाबाईंचे आयुष्य खडतर होते पण त्यांनी माघार घेतली नाही. स्त्रीचा एक व्यक्ती म्हणून विचार व विकास करणाऱ्या पंडिता रमाबाईंचे काम असाधारण असेच आहे.

### कृतिपत्रिका - ४

उतारा क्र. ४.

प्र.१. (१) (i) (अ) मुक्तिमिशन-मुली स्वावलंबी  
 (ब) प्रार्थनामंदिराचा आराखडा - रमाबाई  
 (क) अंध व्यक्ती - ब्रेल लिपी  
 (ड) संघर्षाची कहाणी - रमाबाईंचे आयुष्य  
 (२) (i) (अ) वेताच्या खुर्च्या विणणे.  
 (ब) भांड्यांना कलहई करणे  
 (ii) ब्रेल लिपी  
 (३) पंडिता रमाबाईंनी मुक्तिमिशनमध्ये स्त्रियांसाठी केलीच्या सोपटचापासून टोपल्या बनवणे, वाखाच्या दोन्या वळणे, वेताच्या खुर्च्या विणणे, लेस, स्वेटर, मोजे विणणे, गाई-बैलांचे खिल्लार, शेळ्या मेंद्यांची चरणी, म्हशींचा गोठा, दूधदुभते, कुकुटपालन, सांडपाणी-मैत्यापासून खत, भांड्यांवर नावे घालणे, भांड्यांना कलहई करणे, हातमागावर कापड-सतरंज्या विणणे, घाण्यावर तेल काढणे, छापखान्यातील टाईप जुळवणे-

सोडणे, चित्रे छापणे, कागद मोडणे - पुस्तक बांधणे, दवाखाना चालवणे, धोबीकाम असे कितीतरी लहान-उद्योग सुरू केले.

### खेळ्या शब्दांशी

(अ) (१) आराखडा : खडा, खरा, आख  
 (२) सुधारक : सुधा, धार, धाक, धारक, कर, सुर  
 (आ) तरंग, सारंग, प्रारंभ, आरंभ, निरंक, परंतु, बेरंग  
 (इ) (१) मस्तक (२) ममता (३) सागर  
 (४) सडक (५) मांजर (६) आवास  
 (ई) विद्यार्थ्यांनी स्वतः कृती करा.

### खेळ खेळ्या

(१)

ष	आ	शा	स्त्रा
क्षा	क्षि	डा	स्त्रा
स्त्रा	स्त्रि	डै	क्षि

अति शहाणा त्याचा बैल रिकामा

ऐ	ज	वे	क
ना	का	वे	ना
म	रा	वे	चे

एक ना धड भाराभर चिंध्या

चो	शी	इू	शा
र	फा	न	न्या
सो		सं	ला

ऐकावे जनाचे करावे मनाचे

चोर सोडून संन्याशाला फाशी

घ	घ	ती	क्षि
रो		ली	च्या
री	मा		चु

घरोघरी मातीच्या चुली

(२) (अ) अरेरे ! (आ) चूप ! (इ) शी ! (ई) अबब !

(३) आज सुट्टी असूनही मला लवकर जाग आली होती. बाबा रोज सकाळी फिरायला जातात. आज मीही त्यांच्याबरोबर फिरायला निघालो. केवढी! शांतता होती बाहेर. ना मोटारींचा आवाज, ना धूर. पूर्वेकडे हळूहळू सूर्य वर येत होता. आकाशात तांबूस प्रकाश पसरला होता. ढगांना लाली चढली होती. इतक्यात काय गंमत झाली. एका झाडावरून पक्ष्यांचा थवा उडू लागला. मला खूप मज्जा वाटली. जरा नजर वळवून पाहतो तर काय, एकेका झाडावरून पक्ष्यांचे थवेच्या थवे उडत होते. त्यांचा किलबिलाट तर मन मोहून टाकणारा होता. हवेत मंद गारवा होता. कसलीही गडबड नाही, गोंधळ नाही. वातावरण अगदी आल्हाददायक होते. मी शुद्ध हवा अनुभवत होतो. मला खूप प्रसन्न वाटत होते. या निर्मळ निसर्गाचा मी प्रथमच आनंद घेत होतो. बाबांशी गप्पा मारत मी कधी घरी परतलो, हे कळलेच नाही. कोणतेही हेल्थ ड्रींक न घेता मला आज ताजेतवाने वाटत होते. मी मनाशी पक्का निश्चय केला की रोज सकाळी बाबांबरोबर फिरायला जायचं आणि निसर्गाचा बूस्टर डोस घ्यायचा.

(४) (१) आणि (२) परंतु (३) म्हणून  
 (४) किंवा (५) तरी (६) वा

### शोध घेऊया

विद्यार्थ्यांनी स्वतः कृती करा.

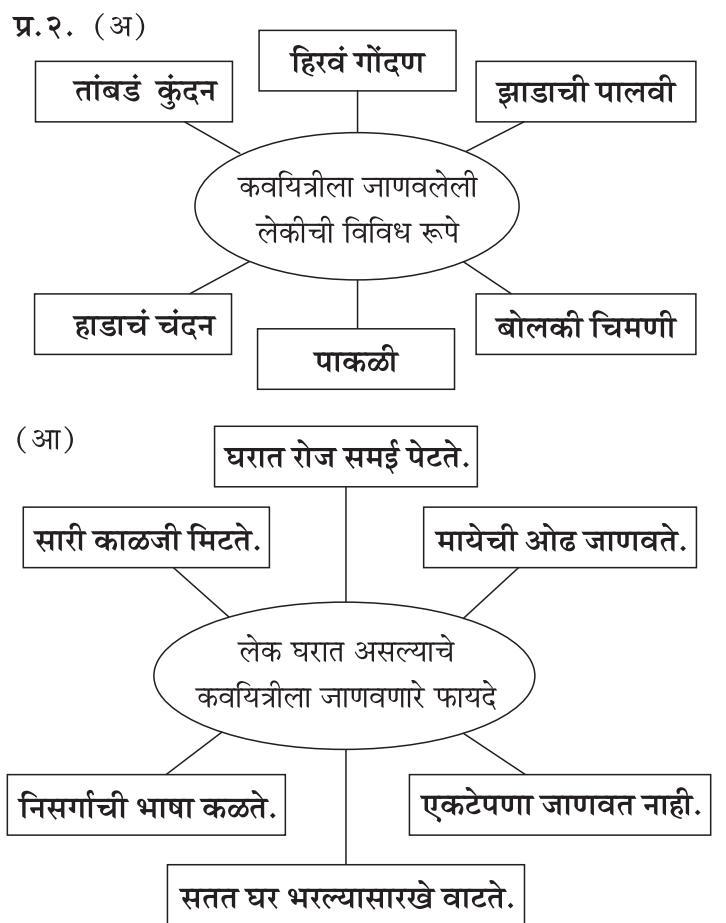
## ११. लेक

### स्वाध्याय

प्र.१. (अ) लेक घरात नसताना कवियत्रीची अवस्था विचित्र होते. वेळ जाता जात नाही जणू काही वेळ थांबूनच राहिली आहे असे वाटते. मन खूप उदास होते. कशातही लक्ष लागत नाही.

(आ) कवियत्रीला आपली लेक बोलकी चिमणी वाटते कारण ती सगळ्या घरात हसत-खेळत, बागडत असते. तिची घरात अखंड बडबड सुरु असते.

(इ) थोडे रागावले तर कवितेतील लेक रुसून बसते.



प्र.३.

अविस्मरणीय	अवांतर	अस्तर	आठ्या
आमूलाग्र	आस	आसू	उमेद
ऊर	अंकुर	कपाशी	कर्मयोगिनी
काटकसर	काळीज	कुंदन	खुळे
गहिवर	गाबड्या	गुजराण	गोंदण
गंधवती	जुजबा	ठणठणीत	तप्त
तान्ह्या	दुखणेकरी	दुर्गम	दुथडी
धास्ती	धुसफुस	नानेटी	निरपेक्ष
पराडमुख	पारंपरिक	पोशिंदे	पंचमहाभूते

प्रबोधन	फलदूप	फुशारकी	मिजास
यथेच्छ	रानमेवा	रोजगारी	वक्ता
वणवा	विरजण	ब्रात्य	शाळू
शिंपी	सतृशील	सुगी	हळवे
हेवा	हेलावणे		

### कृतिपत्रिका

प्र.१. (१) (i) लेकीला (ii) लेक घरात नसते.

(२) (i) तांबंड → **कुंदन**

(ii) लेकीला ही भाषा कळते → **निसर्गाची** **हिरवं** → गोंदण

(३) सगळे जग जरी आपल्यावर रागावले, तरी त्याविषयी मुळीच चिंता करू नये. पण आपली लाडाची लेक जणू फुलाची पाकळी मात्र कधीच रुसून बसू नये.

(४) माझी ताई घरात नसली, तर मला काही सुचेनासे होते. चैन पडत नाही. ताई घरी कधी येईल? याची मी वाट पहात बसते. ती नसल्यामुळे माझा अभ्यास अपूर्ण राहतो, माझ्याशी कुणी खेळायला नसतं की भांडायला कुणी नसतं.

### अतिरिक्त कृती

प्र.१. अस्मिता जोगदंड चांदणे

प्र.२. लेक असता मनाची, सारी काळजी मिटते;  
लेक असता घराची, रोज समई पेटते.

प्र.३. आपल्या देशात मुलींना दुव्यम वागणूक दिली जाते. पण मुलाइतकीच मुलगी महत्त्वाची आहे. मुलगा घराचा कुलदीपक असेल तर मुलगी देखील पणती आहे. मुलगी घरात असेल तर घरातील वातावरण आनंदी व प्रसन्न रहाते. घराला घरपण येते. मुलगी घरातील सर्व माणसांची काळजी घेते. तिला योग्य तो सन्मान द्या असा संदेश या कवितेतून मिळतो.

प्र.४. लेकीच्या / मुलीच्या निरागसपणाचे वर्णन आणि मुलीच्या घरातील अस्तित्वाचे महत्त्व हा या कवितेचा विषय आहे.

प्र.५.



वा! ससा किती जलद पळतोय.



किती छान! मुलगी आहे.



अरेरे! पायाला ठेच लागली वाटते.

### खेळूया शब्दांशी

- (अ) (१) मिटते – पेटते (२) हसते – बसते (३) उरास – उदास
- (४) भाषा – आशा (५) कळते – लागते.

### भाषेची गंमत पाहूया

- (१) सर जाताना प्या ना ताजा रस
- (२) काका वाचवा, काका.

तुम्हीही अशा प्रकारची वाक्ये तयार करून लिहा. पाहा कशी गंमत येते.

विद्यार्थ्यांनी स्वतः कृती करा.

### विचार करा. सांगा.

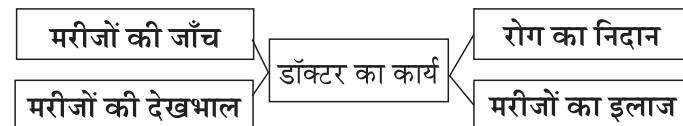
- दुसऱ्यांना देऊन टाकतो.
- गोधडी, पायपुसणी
- घरात कपड्यांचा खूप साठा होणार नाही.

# हिंदी सुलभभारती

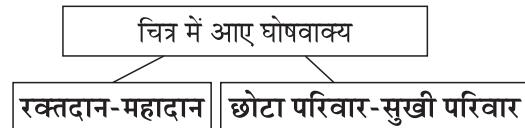
## दूसरी इकाई

### 1. अस्पताल

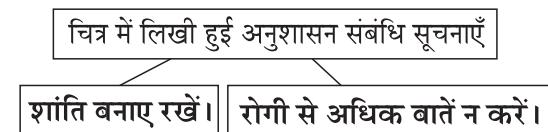
प्र.1. (1)



(2) (1)



(2)



(3) (1)

रुधिर, लह, खन

(2) आँख, नयन, चक्षु

(4)

अस्पताल वह जगह होती है जहाँ शांत वातावरण में मरीजों की सही देखभाल की जाती है। अस्पताल में कुशल डॉक्टर और परिचारिकाएँ (नर्स) होती हैं। जिस तरीके से अस्पताल में किसी मरीज की देखभाल हो सकती है वैसी घर पर नहीं हो पाती। जाँच के लिए अलग-अलग मशीनें होती हैं। इन आधुनिक मशीनों के सहारे बिना पीड़ा के मरीज का इलाज संभव होता है। पीड़ा से व्याकुल मरीज अस्पताल आकर बहुत जल्द स्वस्थ होकर हँसते-हँसते घर लौटता है।

#### स्वाध्याय

★

पाठ्यपुस्तक के पृष्ठ 27 पर अस्पताल का चित्र दिया गया है। चित्र में आई.सी.यू. (अतिदक्षता विभाग), वार्ड (कक्ष) और पूछताछ खिड़की दिखाई दे रही है। चित्र में अनेक सूचनाएँ नजर आ रही हैं। जिसमें 'रोगी से अधिक बात न करें।', 'शांति बनाए रखें।' जैसी सूचनाएँ शामिल हैं। 'नेत्रदान, रक्तदान-महादान', 'छोटा परिवार-सुखी परिवार' जैसे घोषवाक्य भी लिखे हुए हैं। अस्पताल में 'रोगी से

मिलने का समय सुबह 8 से 10 और शाम 4 से 7 बजे तक' यह फलक भी नजर आ रहा है। सब कर्मचारी अपना कार्य करते नजर आ रहे हैं। चित्र में कूड़ा दान रखा दिखाई दे रहा है। डॉक्टर, परिचारिका और वॉर्डबॉय भी नजर आ रहे हैं। छीलचेअर पर बैठी एक मरीज को सलाइन की बोतल लगाई है। उसके साथ एक परिचारिका भी नजर आ रही है। पूछताछ खिड़की के सामने की कुर्सियों पर मरीज (दो आदमी और एक औरत) बैठे दिखाई दे रहे हैं।

### 2. बेटी युग

प्र.1. (1)



(2) (i)

(1) इरादे - अपना इतिहास खुद किससे गढ़ेंगे? अथवा किसे फौलादी कहा है?

(2) हमें कौनसी नई कहानी लिखनी है?

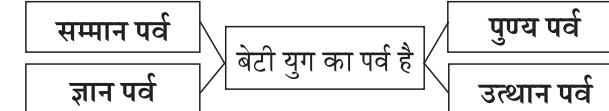
(ii) (1) दौर

(2) नेक

(3)

आज भी नानी द्वारा कही जाने वाली कथा-कहानियाँ सभी को पसंद आती हैं। अब हमें बेटी युग की नई कहानी मिलकर लिखनी है। आज के समय में बेटा और बेटी दोनों एक समान हैं, उन्हें पढ़ने लिखने का और आगे बढ़ने का समान अवसर भी मिलना चाहिए ताकि वे अपने फौलादी नेक इरादों से अपना नया इतिहास गढ़ सकें। पूरा देश पढ़ेगा और आगे बढ़ेगा और नई जवानी की तरंग भी दौड़ पड़ेगी।

प्र.2. (1)



(2) (i)

(1) चिड़िया

(2) सयानी

(ii) (1) उत्थान

(2) हवा

(3) बेटी-युग एक ऐसा पर्व है जिसमें बेटियों को सम्मान मिलेगा। इस पर्व में बेटियों को शिक्षित करके सब पुण्य कमाएँगे। सभी शिक्षित होंगे तो एक-दूसरे का सम्मान करेंगे। इस तरह यह एक प्रगति का दौर होगा, जन-जन की प्रगति का दौर होगा और तब कभी सोने की चिड़िया कहलाने वाला यह देश समझदार कहलाएगा, बेटी युग की हवा में ऊँची उड़ान भरेगा।

प्र.3. (1) आनंद विश्वास

(2) बेटा शिक्षित आधी शिक्षा, दोनों शिक्षित पूरी शिक्षा।  
हमने सोचा, मनन करो तुम, सोचो-समझो, करो समीक्षा।

(3) सिर्फ बेटा शिक्षित होगा तो शिक्षा पूरी नहीं होगी लेकिन बेटा-बेटी दोनों शिक्षित होंगे तो ही शिक्षा पूरी होगी। इस विचार पर कवि ने मनन करने के लिए, सोचने के लिए कहा है। क्योंकि बेटी शिक्षित होगी तो पूरा परिवार शिक्षित होता है। बेटा-बेटी दोनों शिक्षित होंगे तो समाज का, पूरे देश का विकास होगा। इन पंक्तियों द्वारा बेटियों की शिक्षा के महत्व को कवि ने प्रतिपादित किया है।

(4) लड़कों के साथ लड़कियों की शिक्षा भी महत्वपूर्ण है। बेटा-बेटी दोनों एक समान हैं, दोनों को पढ़ने-लिखने का और आगे बढ़ने का अवसर मिलना चाहिए। पूरा देश पढ़ेगा तो समाज प्रगति की ऊँचाई पर चला जाएगा। बेटियाँ पढ़ेंगी तो आत्मनिर्भर हो जाएंगी। दुनिया में कोई अनपढ़ नहीं रहना चाहिए। सबको ज्ञान मिलना जरूरी है। यह संदेश इस कविता से मिलता है।

### स्वाध्याय

प्र.1. (अ) (1) बेटी युग में बेटा-बेटी, सभी पढ़ेंगे, सभी बढ़ेंगे।  
फौलादी ले नेक झरादे, खुद अपना इतिहास गढ़ेंगे।

(2) बेटी युग सम्मान पर्व है, पुण्य पर्व है, ज्ञान पर्व है।  
सब सबका सम्मान करें तो, जन-जन का उत्थान पर्व है।

(आ) (1) सुहानी (2) शिक्षामय (3) चिड़िया।

(इ) (1) सत्य (2) असत्य (3) असत्य

प्र.2. (1) बेटी पर्व : बेटी युग एक ऐसा युग है जिसमें बेटियों को सम्मान मिलेगा। इस पर्व में बेटियों को शिक्षित करके सब पुण्य कमाएँगे। सभी शिक्षित होंगे तो एक-दूसरे का सम्मान भी करेंगे। इस तरह यह जन-जन की प्रगति का दौर

होगा, हम सभी का, देश का उत्थान होगा। सोने की चिड़िया कहलाने वाला यह देश समझदार कहलाएगा और बेटी युग की हवा में ऊँची उड़ान भरेगा।

(2) शिक्षामय विश्व : बच्चों ने सारा जग शिक्षामय करने का निश्चय किया है। बेटा हो या बेटी अब कोई भी अनपढ़ नहीं रहेगा। सबके हाथों में पुस्तक होंगी। ज्ञानगंगा की पावन धारा हर घर के आँगन तक पहुँचेगी। पुस्तक और कलम की शक्ति हर किसी को मिलेगी। ज्ञान का पर्व होगा और जन-जन का उत्थान होगा।

### स्वयं अध्ययन

● वर्तमान दौर में यह बात सर्वमान्य है कि स्त्री को भी उतना ही शिक्षा का अवसर उपलब्ध होना चाहिए जितना कि एक पुरुष को है। यह बात सिद्ध सत्य है कि माता शिक्षित न होगी तो देश की संतानों का कदापि कल्याण संभव नहीं। इसलिए मराठी में एक कहावत है, ‘जिच्या हाती पाळण्याची दोरी, ती सर्व जगा उद्धारी।’

स्त्री शिक्षा का स्वयं पर प्रभाव स्त्री को स्वयं भी शिक्षा के प्रति रुचि रखनी चाहिए। शिक्षित होकर वह आत्मनिर्भर बनेगी। वह पुरुषों के साथ समानता का अधिकार प्राप्त कर सकेगी। वह एक सफल गृहिणी और कुशल माता बनेगी।

एक शिक्षित माता का परिवार भी शिक्षित होगा। बच्चों का मानसिक विकास सही मायने में ऐसे परिवार में ही हो सकेगा। निराशा एवं शोषण के अंधकार से बाहर निकालने के लिए नारी शिक्षा एक महत्वपूर्ण कड़ी होगी। शिक्षित माता के बालक समाज में अपना कर्तव्य निभाने में सक्षम रहेंगे और समाज को प्रगति की ऊँचाइयों पर ले जाएँगे। समाज में नारी की प्रतिष्ठा बढ़ेगी।

देश की हर नारी जब शिक्षा के पंख लगाकर आसमान छूने चलेगी तब देश को आगे बढ़ने में कोई नहीं रोक सकेगा। क्योंकि वह लक्ष्मी, सरस्वती ही नहीं बल्कि समय आने पर दुर्गा बनकर रक्षा करने के लिए भी आगे बढ़ेगी। एक जागरूक और सचेत नागरिक बनकर वह स्वयं का विकास करेगी, परिवार का विकास करेगी और देश का भी विकास करेगी।

‘सजग, सचेत, सबल समर्थ

आधुनिक युग की नारी है।

ऊँचे-ऊँचे पद पर बैठी

सम्मान की अधिकारी है।’

### विचार मंथन

- जन्म के बाद बेटियों को कई तरह के भेदभाव से गुजरना पड़ता है जैसे- शिक्षा, स्वास्थ्य, सुरक्षा, खान-पान, अधिकार आदि। लड़कियों के लिए जो पूर्वपार, नकारात्मक पूर्वाग्रह हैं उनको उस सकारात्मकता में बदलने के लिए महिला सशक्तिकरण आवश्यक है। परिवार और समाज की प्रगति में नारी शिक्षा एक महत्वपूर्ण कड़ी है।

चिकित्सा शास्त्र के विकास ने गर्भ परीक्षा में लिंग पहचान कर कन्या भ्रूण हत्या के मार्ग खुले कर दिए थे। दहेज की कुप्रथा ने कई लड़कियों को जन्म लेने से पहले ही यमलोक पहुँचा दिया। कन्या भ्रूण हत्या का अंत करने के लिए और बेटियों को शिक्षित कर आत्मसम्मान के साथ जीने का अवसर देने हेतु 'बेटी बचाओ, बेटी पढ़ाओ' योजना की घोषणा प्रधान मंत्री मोदी जी ने की।

### सदैव ध्यान में रखो।

- जिस समाज में हम रहते हैं उस समाज का परिवर्तन हमारी वजह से ही संभव है। मुझे याद है उस दिन मैं रेल से यात्रा कर रही थी। मेरी बगलवाली सीट पर एक कॉलेज में पढ़ने वाली लड़की बैठी थी। मैंने चॉकलेट खाई और उसका रैपर खिड़की से बाहर फेंकने जा रही थी तभी उस दीदी ने मेरे हाथ से चॉकलेट रैपर तत्परता से छीन लिया और ऐसा फेंककर कचरा न फैलाने की बात समझाई। रैपर उसने अपने बैग के साईड पॉकेट में रख लिया। मुझे यह जिंदगी भर का सबक मिल गया। अब कुछ भी कचरा फेंकने से पहले मुझे दीदी की वह बात याद आती है और मैं अपना कचरा कूड़ेदान में ही फेंकने के लिए प्रतिबद्ध हो जाती हूँ। दीदी जैसा करके मैं अन्य बच्चों को सुधार सकती हूँ और धीरे-धीरे पूरा समाज बदल जाएगा। 'स्वच्छ भारत' मुहिम सफल हो जाएगी।

### व्याकरण

#### भाषा की ओर

- ★ गाँव - गाँव, इधर - उधर, घूमना - फिरना, धन - दौलत,
- जान - पहचान, कूड़ा - कचरा, फल - फूल, घर - घर।

(2)

घूमना - फिरना

सेहत के लिए घूमना-फिरना अच्छा होता है।

(3)

घर - घर

दीपावली में घर-घर मिठाइयाँ बनती हैं।

(4)

गाँव - गाँव

अंतरजाल की सुविधा गाँव-गाँव में उपलब्ध है।

(5)

फल - फूल

बाजार से बहुत सारे फल-फूल खरीदकर लाए।

(6)

कूड़ा - कचरा

बच्चों ने मैदान पर फैला कूड़ा-कचरा इकट्ठा किया।

(7)

जान - पहचान

समारोह में सभी जान-पहचान वालों को आमंत्रित किया।

(8)

इधर - उधर

बगीचे में आते ही सभी बच्चे इधर-उधर दौड़ने लगे।

## लेखन कौशल (Writing Skill)

(1) सर्वप्रथम तो मन में विचार आएगा इस बटवे को छूना भी नहीं चाहिए। क्या पता वह बटवा किसी मुसीबत का दरवाजा खोल दें। मन में कई भले-बूरे ख्याल आएँगे। बटवा किसका होगा ? गलती से गिर गया होगा। उस बटवे के मालिक के पास उसका बटवा पहुँचाना चाहिए। अगर बटवे से कोई सुराग मिल जाए तो बटवा उसके मालिक तक पहुँचाना आसान होगा। पर इसके लिए बटवे को छूना पड़ेगा और खोलकर देखना पड़ेगा।

क्या पता किसी जेब कतरे ने बटवा चुराया हो और अंदर का माल निकालकर यहाँ डाल दिया हो। संभावना तो यह भी बनती है कि जेब कतरे के पीछे पुलिस लगी होगी और पकड़े जाने के भय से उसने बटवा यहाँ डाल दिया हो। मेरे हाथ में बटवा देखकर पुलिस मुझे जेबकतरा न समझ बैठे!

बटवे में बहुत सारे रूपए देखकर यह भी विचार आ जाता कि इन पैसों का सदुपयोग कैसे हो सकता है। पाठशाला के पुस्तकालय की किताबें खरीदी जा सकती हैं, गरीब बच्चों का परीक्षा शुल्क भरा जा सकता है, अनाथालय, वृद्धाश्रम के लिए कुछ दिया जा सकता है और उनकी मदद हो सकती है। लेकिन उन रूपयों को स्वयं पर खर्च करने का विचार एक बार भी नहीं आया।

### सुनो तो जरा

★ हमारे सभी उत्सव और व्रत ब्रह्मांड की खगोलीय घटना, धरती के वातावरण परिवर्तन, मनुष्य के मनोवैज्ञानिक तथा सामाजिक कर्तव्य को ध्यान में रखकर निर्मित किए गए हैं। जैसे-

- (1) **मकर संक्रांति** - सूर्य के उत्तरायण पर जब वह मकर राशि में गमन करता है तो मनाया जाता है। हमारी धरती के सूर्य के प्रति धन्यवाद देने हेतु मनाया जानेवाला यह त्योहार है।
- (2) **दीपावली** - बरसात के बाद घर सहित आसपास की दशा बिगड़ जाती है। दीपावली के बहाने घर का कोना-कोना साफ हो जाता है। बरसात के बाद पैदा हुए कीड़े-मकोड़े दिवाली के दीपों में जलकर मर जाते हैं जिससे वातावरण में हानिकारक किटाणुओं की समाप्ति होती है।

(3) **होली** - होलिका दहन के पीछे भी यही वैज्ञानिक कारण है। होलिका दहन प्रक्रिया से वातावरण का तापमान 145 डिग्री फ़ेरनाइट तक बढ़ जाता है जो हानिकारक कीटों को मारता है।

(4) **नवरात्रि** - भारतीय ऋषी मुनियों ने दिन से भी रात्रि में पूजा-अर्चना को अधिक महत्व दिया है। क्योंकि दिन में आवाज लगाई जाए तो दूर तक नहीं पहुँचती किंतु रात्रि में बहुत दूर तक पहुँच जाती है। इसके पीछे दिन के कोलाहल के अलावा एक वैज्ञानिक तथ्य यह भी है कि दिन में सूर्य की किरणें आवाज की तरंगों और रेडियो तरंगों को आगे बढ़ने से रोक देती हैं। मंदिरों के घंटा और शंख की आवाज से दूर-दूर तक वातावरण कीटाणुओं से रहित हो जाता है यह रात्रि का वैज्ञानिक रहस्य है। इसीलिए दो बार नवरात्रि और एक महा शिवरात्रि मनाई जाती है।

## उपक्रम (Activity)

### अध्ययन कौशल

★ विद्यार्थी स्वयं कृती करें।

## 3. दो लघुकथाएँ

प्र.1.	(1)	संज्ञा	विशेषण
	(1)	मन	प्रसन्न
	(2)	किस्से	प्रसिद्ध
	(3)	अकबर	महान शासक
	(4)	स्थान	हराभरा

- (2) (i) (1) घोड़ा। (2) बीरबल।  
(ii) (1) अकबर ने बीरबल को हरे रंग के घोड़े का प्रबंध करने का आदेश दिया।  
(2) बीरबल ने अकबर के आदेश को सिर-आँखों पर रख लिया।
- (3) (i) (1) सप्ताह। (2) शासक।  
(ii) **हाथ** - हाथ धोकर पीछे पड़ जाना।, हाथ धोना।  
**पैर** - पैर की धूल होना।, पैर पकड़ना।

(4) पिछली छुट्टीयों में मेरे परिवार के सभी सदस्य लोनावला-खंडाला गए थे। खंडाला बेहद छोटा-सा हिल स्टेशन हैं पर इसे प्रकृति की सुंदरता का वरदान मिला है। हर तरफ छाई हरियाली और पहाड़ हमें अपनी ओर आकर्षित करते हैं। भूशी झील अपने आप में अनोखी है। यहाँ बिताया हर पल मन को सुकून देता है। यहाँ का शांत सुंदर माहोल मन को प्रसन्न कर देता है। बरसात के दिनों में यहाँ कई छोटे-मोटे झारने पहाड़ों से बहते हैं जिसकी फुहार मनमस्तिष्क को तरोताजा कर देती है। यहाँ के खुबसूरत पहाड़ हमारी थकान पलभर में गायब कर देते हैं और मन को शांति मिलती है।

पास में ही लोनावला है। मानसून में लोनावला और खंडाला दोनों की खुबसूरती उफान पर होती है। पहाड़ों से गिरते झारने, हरियाली, झीलों से घिरे इन स्थलों को बार-बार देखने को मन करता है। यहाँ का सूर्योदय, यहाँ का सूर्यास्त, यहाँ की चाँदनी रातें मन को सुख-चैन देते हैं। शायद यही वजह होगी कि मुंबई-पूना के सैलानी सप्ताहांत प्रकृति की गोद में बिताने के लिए यहाँ आना पसंद करते हैं।

प्र.2. (1) चित्रकार की पत्नी ने चित्रकार के दरबार में फरियाद करने की सलाह दी। क्योंकि वह सोचती थी कि,

बादशाह अकबर बहुत दयालु हैं।

वे भले ही पढ़े-लिखे नहीं हैं परंतु बड़े बुद्धिमान हैं।

उनकी सहायता के लिए दरबार में नौ-नौ रत्न हैं।

अपने पति को न्याय जरूर मिलेगा।

(2) (i) (1) क्योंकि चित्रकार को लगा कि सेठ बड़ा आदमी है इसलिए लोग उसी की बात को सच मानेंगे और उसे न्याय नहीं मिलेगा।

(2) क्योंकि बादशाह ने जब सेठ और चित्रकार दोनों की बातें सुनी तो न्याय करना उन्हें मुश्किल लगा।

(ii) (1) बुद्धिमान (2) सेठ

(3) (i) दूसरे दिन उस दीन के भाग खुल गए।

(ii) मैंने सोचा कि मैं लोगों की मदद करने अवश्य जाऊँगा।

(4) यदि हम निर्देष हैं। हमपर अन्याय हो रहा है तो उसके खिलाफ आवाज उठाना जरूरी है। हम निर्देष होकर चुप बैठे तो सामनेवालों को गलतफहमी होती है। चुपचाप अन्याय सह लेनेवाला भी गुनहगार होता है। कोई गलत कर रहा है, किसीपर जुलुम हो रहा है तो उसकी गलती का अहसास कराना चाहिए और हम सही मार्ग से अन्याय का प्रतिकार करेंगे तो लोग भी हमारा साथ दे सकते हैं।

### स्वाध्याय

प्र.1. (अ) (1) बीरबल की बुद्धिमानी की (2) बीरबल की दूसरी शर्त  
 (3) बादशाह अकबर के दरबार में (4) चेहरा बदलने में  
 (5) नौ-नौ रत्न

(आ) (1) जब बादशाह ने बीरबल की दूसरी शर्त सुनी तो वे बीरबल का मुँह देखने लगे।  
 (2) क्रोधित होकर उस चित्रकार ने सेठ से सभी चित्रों के पैसे माँगे।  
 (इ) (1) बीरबल की चतुराई पर बादशाह खुश हुए।   
 (2) बीरबल की शर्तें बादशाह ने पूरी कर दीं।   
 (3) सेठ बहुत ही कंजूस था।

प्र.2. (1) एक कंजूस सेठ ने चित्रकार से अपना चित्र बनवाया। जब चित्रकार ने पैसे माँगे तो सेठ ने उसे कहा कि चित्र ठीक नहीं है, उसे दोबारा बनाकर लाए। चित्रकार ने कई बार सेठ के चित्र बनाए लेकिन कंजूस सेठ हर बार कह देता कि चित्र ठीक नहीं है क्रोधित होकर चित्रकार ने सभी चित्रों के पैसों का तगादा किया तब सेठ ने पैसे देने से साफ मना कर दिया। अपना मेहनताना न मिलने के कारण चित्रकार परेशान हो उठा।

(2) बादशाह अकबर ने बीरबल की बुद्धिमानी की परीक्षा लेने के लिए बीरबल को हरे घोड़े का प्रबंध करने का आदेश दिया था। दोनों अच्छी तरह जानते थे कि संसार में हरा घोड़ा नहीं होता। परंतु बीरबल ने बादशाह से हरे घोड़े के मिल जाने की बात कही और दो शर्त रखीं। पहली शर्त यह थी कि घोड़ा लेने बादशाह को स्वयं ही जाना होगा और दूसरी शर्त रखी कि घोड़े का रंग दूसरे घोड़े से अलग है, तो घोड़े को देखने का दिन भी अलग यानि सप्ताह के सात दिनों के अलावा होना चाहिए। 'हरे घोड़े' के प्रबंध की बात इस तरह बीरबल ने बड़ी चतुराई से टाल दी।

(3) घोड़े के मालिक की पहली शर्त यह है कि बादशाह को घोड़ा लेने वहाँ स्वयं ही जाना पड़ेगा और दूसरी शर्त यह है कि जब घोड़े का रंग दूसरे घोड़ों से अलग है तो घोड़े को देखने का दिन भी अलग होना चाहिए। यानि सप्ताह के सात दिन के अलावा किसी भी दिन बादशाह घोड़ा देख सकते हैं।

### व्याकरण

प्र.1. (अ) सिर आँखों पर रखना - अर्थ : स्वीकार करना।

वाक्य : गुरु के आदेश को शिष्य ने सिर आँखों पर रखा।

(आ) मात देना - अर्थ : पराजीत करना।

वाक्य : भारतीय टीम ने क्रिकेट में श्रीलंका की टीम को मात दी।

(इ) मुँह लटकाना - अर्थ : उदास होना।

वाक्य : परीक्षा में कम अंक मिले इसलिए राज मुँह लटकाकर बैठ गया।

(ई) दूध का दूध, पानी का पानी करना - अर्थ : सही न्याय करना।

वाक्य : कल सरपंच ने दूध का दूध और पानी का पानी कर दिया।

### लेखन कौशल (Writing Skill)

#### विचार मंथन

- ‘सत्यमेव जयते’ यह हमारे राष्ट्र का धोष वाक्य है। इसका अर्थ है सत्य की हमेशा जीत होती है। इस तथ्य को भली भाँति समझने वाले व्यापारी भी कभी नुकसान में नहीं जाते। प्रायः माना जाता है कि सच्चाई से कोई व्यापार लाभदायी नहीं होता। झूठ और बेर्इमानी व्यापार के पर्यायवाची शब्द मानने वालों को यह कहानी जरूर पढ़नी चाहिए और सबक सीखना चाहिए।

स्व. जमनालाल बजाज उन दिनों रुई का व्यापार करते थे। उनके साथ दूसरे व्यापारी भी थे। दूसरे व्यापारियों ने अधिक कमाई के लालच में रुई में पानी छिड़कर गाँठें बाँधना शुरू किया। इससे उन्हें दो लाभ दिख रहे थे - एक तो कुछ वजन बढ़ जाता था और रुई लंबे तार वाली दिखाई देने से ऊँचे दाम भी मिल जाते। परंतु थोड़े समय पश्चात पानी सूख जाने पर रुई खराब हो जाती थी। जब विदेशी व्यापारियों को इस चालाकी का ज्ञान हुआ तो वे कम कीमत में माल खरीदने लगे। पानी न मारने वाले व्यापारी प्रतिस्पर्धा में टिक न सके। श्री जमनालाल जी के मुनीम को भी चिंता हुई और उन्होंने जमनालाल जी को रुई में पानी मारने की सलाह दी। लेकिन जमनालाल जी ने साफ मना कर दिया। फिर समझौता करते हुए उन्होंने कहा पानी मारकर जो गाँठें बेची जाएँगी उन पर W.I.C. मार्क लगाया जाए और बिना पानी वाली गाँठों पर B.J. लिखा जाए। इसके साथ ही उन्होंने अपने मुनीम को परचे बाँटने का आदेश दिया कि W.I.C. का अर्थ पानी मारी हुई गाँठें और B.J. वाली गाँठें ऊँचे दाम देकर खरीदने लगे। इस तरह सच्चाई के कारण उनके माल की माँग भी बढ़ी और उनकी आमदनी भी बढ़ी।

इस घटना से पता चलता है कि सत्य का फल हमेशा मधुर होता है।

### अध्ययन कौशल



**प्रस्तावना** - श्रोताओं को संबोधित करते हुए विषय निवेदन करना चाहिए जैसे कि, सम्माननीय अध्यक्ष, प्रमुख अतिथि गण, शिक्षक वृद्ध और मेरे प्रिय साथियों आज आपके सामने स्वतंत्रता दिवस के अवसर पर अपने विचार प्रकट करना चाहता हूँ।

**विषय प्रवेश** - आजादी का महत्व, अंग्रेजों से मुक्ति मिली, परंतु देश की अन्य समस्याएँ ..... भ्रष्टाचार, गरीबी, भेदभाव आदि से निजात पाने के उपाय।

**उद्धरण, सुवचन** - 'तन समर्पित मन समर्पित

रक्त का कण कण समर्पित

चाहता हूँ राष्ट्र की धरती

तुझे कुछ और भी दूँ।'

'जन्मभूमि स्वर्ग से भी श्रेष्ठ है।'

**स्वमत :** भारत के उज्ज्वल भविष्य के लिए हम सबको वचनबद्ध होना है। वतन को नई ऊँचाई पर पहुँचाने के लिए मिलकर प्रयास करने की जरूरत है। विद्यार्थी आगे लिखने की कोशिश करें।

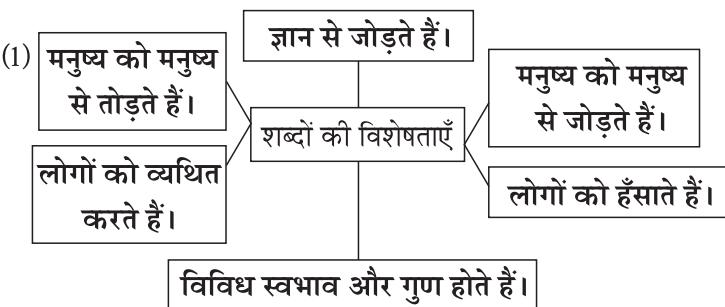
भाषण विद्यार्थी स्वयं तैयार करें।

### उपक्रम (Activity)

राज्य का नाम	शैली का नाम
राजस्थान	राजपूत शैली जिसमें मेवाड़ी, मारवाड़ी, जयपुरी, बीकानेरी, तथा बूंदी शैली में बने चित्र हैं।
बिहार	मधुबनी
महाराष्ट्र	वारली
जम्मू-कश्मीर	पहाड़ी चित्रकला शैली जिस में गुलेरी, गड़वाल, जम्मू तथा कांगड़ा शैली हैं।
प. बंगाल	कंपनी शैली
पंजाब, बंगाल, उड़ीसा	जैन शैली
बंगाल, बिहार	पाल शैली, गौड़ शैली
दक्षिण भारत	द्रविड़ शैली
अजंता की गुफाएँ (महाराष्ट्र)	बौद्ध शैली
उड़ीसा	पट चित्रकारी
आंध्र प्रदेश	कलमकारी

### 4. शब्द संपदा

प्र.1.



(2) (i) (1) मनुष्य शब्दों को अर्थ देता है और जीवंत बनाता है।

(2) मनुष्य स्वभाव के जितने विभिन्न नमूने हैं उनने शब्दों के स्वभाव के नहीं।

(ii) (1) शब्द ही मनुष्य को मनुष्य से जोड़ते हैं और शब्द ही मनुष्य को मनुष्य से तोड़ते हैं।

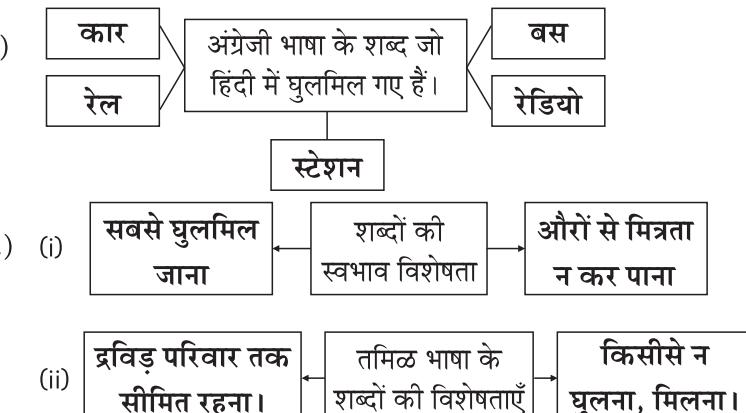
(2) कुछ लोग औरों को हँसाने का काम करते हैं, वैसे कुछ शब्द लोगों को हँसाते हैं।

(3) (i) (1) तोड़ना (2) रुलाना

(ii) (1) विज्ञान (2) विभिन्न

(4) अपने विचार और भावनाओं को व्यक्त करने के लिए हमें शब्दों की आवश्यकता होती है। शब्द हमारे चरित्र, बुद्धिमत्ता, समझ और संस्कारों को दर्शाते हैं; इसलिए उनके उच्चारण से पूर्व हमें सोचना चाहिए क्योंकि शब्दों में बहुत ताकत होती है। शब्द ही मनुष्य को मनुष्य से जोड़ते हैं और शब्द ही मनुष्य को मनुष्य से तोड़ते हैं। कुछ शब्दों के कारण सामनेवाला व्यक्ति व्यथित होता है तो कुछ शब्दों से लोग हँसते हैं; खुश होते हैं इसलिए किस समय, किस प्रकार के शब्दों का प्रयोग करना चाहिए यह ध्यान में रखना बहुत जरूरी होता है। अनुचित शब्दों का प्रयोग हमेशा हानिकारक होता है। कई बार गलत जगह पर गलत शब्दों का चयन करने से मनोरंजक स्थिति भी बन जाती है तो कभी रिश्तों में दरार पड़ सकती है। इसलिए शब्दों की शक्ति को ध्यान में रखते हुए हमें शब्द प्रयोग के लिए सावधानियाँ बरतनी होगी।

प्र.2.



(3) (i) (1) परतंत्र (2) शत्रु

(ii) (1) **अस्तित्व** (2) **स्वभाव**

(4) खिचड़ी भाषा का अर्थ बहुत सारी भाषाओं का मिश्रण। जरूरत न होने पर अन्य भाषाओं के शब्दों का प्रयोग करना अनुचित है। बहुत बार हम बातें करते समय किसी और भाषा के शब्द इस्तेमाल करते हैं। अधिक मात्रा में अंग्रेजी शब्दों का प्रयोग हम करते हैं क्योंकि शुरू से ही हम सभी को व्यवहार में उन शब्दों का प्रयोग करना सुलभ होता है जैसे प्लॉटफॉर्म, टेबल आदि। कभी कभी मिश्र भाषा बोलने के कारण अर्थ का अनर्थ होता है। सुननेवाले को बात करने वाले व्यक्ति की बात समझना मुश्किल होता है। जब हम कोई भी भाषा बोलते हैं तो वह शुद्ध होनी चाहिए। भाषा की मिठास और पवित्रता रखने के लिए यह ध्यान रखना जरूरी है। हर एक भाषा महत्वपूर्ण है और उनकी अलग खासियत है। हम खुद शुद्ध भाषा बोलने का प्रयास करेंगे तो आनेवाली पीढ़ियों पर भाषा के अच्छे संस्कार हो कर उनकी भाषा विकसित हो सकती है। विविध भाषाओं का ज्ञान हमें होना चाहिए लेकिन उनका प्रयोग उचित जगह पर करना ही भाषा का सम्मान है।

### स्वाध्याय

**प्र.1.** (अ) (1) ज्ञानशाखाओं। (2) उच्चारण। (3) निष्क्रिय।

(आ) (1) क्योंकि मनुष्य ने अपनी बुद्धि के बल पर भाषा की खोज की।

(2) क्योंकि मनुष्य शब्दों को अर्थ देकर जीवंत बनाता है और उनके जीवंत हो जाने पर उनमें मनुष्य के विविध स्वभाव, गुण आने लगते हैं।

(3) क्योंकि वे शब्द बहुत प्रिय होते हैं।

**प्र.2.** (1) भाषा का अर्थ है - सार्थक शब्दों का व्यवस्थित क्रमबद्ध संयोजन। मनुष्य एक विचारशील प्राणी है। उसने अपने मस्तिष्क से भाषा की खोज की। यह भाषा ही सभी प्रगति की जड़ है। दुनिया की सभी ज्ञानशाखाओं का विकास भाषा के कारण ही संभव हुआ।

(2) शब्दों के बाहर जाने और अन्य अनेक भाषाओं के शब्दों के आने से हमारी भाषा समृद्ध होती है। कुछ शब्दों का स्वभाव ही ऐसा होता है कि वे अन्य भाषा के शब्दों में घुलमिल जाते हैं। कुछ शब्द ऐसे भी होते हैं जो भिन्न भाषाओं के मेल से बनते हैं, जैसे - वर्षगांठ - संस्कृत और हिंदी भाषा के शब्दों का मेल है, तो रेलयात्री अंग्रेजी-हिंदी भाषा के शब्दों का मेल है और कुछ शब्द उनके मूल रूप में ही आ जाते हैं। विशेषतः वे शब्द जिनके लिए हमारे पास प्रतिशब्द नहीं होते जैसे - पेंसिल, रेडियो आदि। इस तरह शब्दों के आने से भाषा समृद्ध बनती है।

(3) शब्दों के बारे में लेखक ने बताया है कि शब्दों का संसार बड़ा विचित्र है। शब्द मनुष्य को ज्ञान से जोड़ते हैं। शब्द मनुष्य को मनुष्य से जोड़ते हैं और शब्द ही मनुष्य को मनुष्य से तोड़ते हैं। विज्ञान की नजर में वे सिर्फ ध्वनि चिह्न हैं पर मनुष्य उन्हें अर्थ देकर, जीवंत बनाता है और उनमें विविध स्वभाव गुण आने लगते हैं। वे मनुष्य को हँसाते भी हैं और दुखी भी करते हैं। कुछ शब्द ऐसे भी होते हैं जिन्हें बार-बार सुनने की इच्छा होती है। ऐसी अनोखी है यह शब्दों की दुनिया।

(4) शब्द भंडार जितना अधिक उतनी भाषा समृद्ध मानी जाती है। कुछ भाषाओं के शब्द किसी दूसरी भाषा से मित्रता कर लेते हैं और उन्हीं में से एक बना जाते हैं। हिंदी के कुछ शब्द मिलनसार हैं और अन्य भाषाओं के मेल से बने हैं। कुछ हिंदी-संस्कृत से तो कुछ हिंदी और अरबी / फारसी से तो कुछ अंग्रेजी और संस्कृत के मेल से बने हैं। शब्दों के इस प्रकार बाहर जाने और अन्य अनेक भाषाओं के शब्दों के आने से हमारी भाषा समृद्ध होती है। ऐसे शब्द जिन्हें हमारी भाषा में प्रतिशब्द न हो उन शब्दों को भाषा में सहर्ष स्वीकार करने से भाषा समृद्ध ही होगी।

(5) कमसे कम शब्दों में बोलना और लिखना एक कला है। यह कला विविध पुस्तकों के वाचन से और परिश्रम से साध्य हो सकती है। किस समय, किसके सामने, किस प्रकार के शब्दों का प्रयोग करना चाहिए इसे अनुभव, मार्गदर्शन के अलावा वाचन द्वारा भी सीखा जा सकता है। शब्दसंपदा बढ़ाने के लिए साहित्य के वाचन की जरूरत होती है। अतः अपनी वाचन

संपदा बढ़ाने के लिए वाचन संस्कृति को बढ़ाना आवश्यक है। जितनी हमारी वाचन संस्कृति बड़ी उतनी ही विशाल शब्द संपदा के हम मालिक बन जाएँगे।

### सदैव ध्यान में रखो।

★ हमारी पोशाक और चालदाल का प्रभाव समाज पर जरूर पड़ता है लेकिन वह स्थायी नहीं होता। मधुर शब्दों के कारण वह स्थायी बनता है। शब्द ही हैं जो हमारी शिक्षा, चरित्र, संस्कारों को दर्शाते हैं, शब्द भय का परिमार्जन करते हैं और विश्वास उत्पन्न करते हैं। परंतु बुरे वचन मनुष्य को रुष्ट कर देते हैं। कटु वचन शास्त्र से भी गहरे घाव उत्पन्न करते हैं और शास्त्र के घाव तो भर भी जाते हैं लेकिन शब्दों के घाव हमेशा रिसते रहते हैं, कभी नहीं भरते। इसलिए शब्दों का प्रयोग सावधानी से करना चाहिए। यह तो हुई बोलते समय शब्दों के प्रयोग की बात।

लिखते समय तो और भी ध्यान रखना चाहिए क्योंकि मात्रा की छोटी सी गलती अर्थ का अनर्थ कर देती है। इसके कई उदाहरण हम प्रत्यक्ष देख चुके हैं, जैसे कि दिन-दीन या सुख-सूख।

### जरा सोचो ..... चर्चा करो

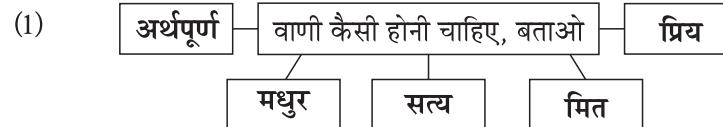
★ पशु-पक्षी बेजुबान हैं ऐसा नहीं। वे अपनी भाषा में मतलब बोलियों में बोलते भी हैं परंतु हम उन्हें समझ नहीं पाते। अगर समझ पाते तो उनकी जुबान से रोज हमें मनुष्य के दुष्कर्मों की कहानियाँ ही सुनने मिलतीं। पाप-पुण्य की बातें करने वाले हम मनुष्य मानते हैं कि किसी को बेघर करना सबसे बड़ा पाप है और अपने स्वार्थ की खातिर हम पाप पर पाप किए जा रहे हैं।

जंगलों की अंधाधुंध कटाई करके हम उनके घर उनसे छीन रहे हैं। फिर वे गाँव शहर में आ जाते हैं तब मनुष्य उन्हें मार भगाता है। वनों में उन्हें खाने-पीने को चारा उपलब्ध होता है। उनके मुँह से हम निवाला भी छीन रहे हैं। बेचारे वन से बाहर आकर हमारे फैले प्रदूषण में जी भी नहीं पाते। न खा-पी सकते हैं न सो पाते हैं।

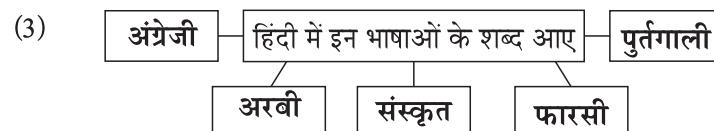
अब वे शिकायत करें भी तो किससे करें? बेचारे मौसम की मार झेलते हुए मौत को गले लगा लेते हैं। भूख, प्यास से जूझते हुए दम तोड़ देते हैं। मनुष्य को संवेदनाहीन, निष्ठूर, कूर, स्वार्थी इस तरह के ताने ही हम उनकी जुबान से सुनते अगर उनकी बोलियाँ समझ पाते। 'अज्ञान में भी सुख होता है' इसलिए अच्छा है

कि हमें उनकी बोली नहीं समझती। परंतु उनके संरक्षण के लिए सरकार के साथ-साथ जनता को भी आगे आना है ताकि पर्यावरण संतुलन बना रहे और पशु-पक्षी और मनुष्य की जीवन नैया हँसते-खेलते पार हो जाए।

### स्वयं अध्ययन



(2) भाषा की परिभाषा **सार्थक शब्दों का व्यवस्थित क्रमबद्ध संयोजन ही भाषा है।**



### व्याकरण

(1) (1) लक्ष्मी मिल यहाँ से दस मील दूरी पर है।  
 (2) प्राण छोड़ दूँगा पर प्रण नहीं छोड़ूँगा।  
 (3) हंस को देखकर रुचिका हँस पड़ी।  
 (4) शब्द कोश में कोष शब्द मिलता है।  
 (5) दिन रात दीन-दुखियों की सेवा करना सभी का कर्तव्य है।  
 (6) नदी के कूल का कुल जल समेटा नहीं जा सकता।

(7) दीया दीवाली में जलाकर देहरी पर रख दिया।  
 (8) बालक पिता से पानी पीता है।

(2) (1) दरार पड़ना - दूरी बढ़ना।  
**वाक्य - रूपयों-पैसों के कारण दो भाइयों के बीच दरार पड़ गई।**  
 (2) अनाप-शनाप बोलना - निरर्थक बातें करना।

**वाक्य - क्रोध में शीला अनाप-शनाप बोल रही थी।**

## लेखन कौशल (Writing Skill)

★

कौआ काको धन हरै कोयल काको देत।

तुलसी मीठे वचन के जग अपनो करी लेते।

अर्थात् कौआ और कोयल दोनों का रंग काला है परंतु वाणी में अंतर है। कौआ कर्कश बोलता है और दूसरों के क्रोध का पात्र बनता है जबकि कोयल मीठा बोलती है इसलिए दुनिया उसके आवाज की दिवानी बन जाती है। इन दोनों का उदाहरण देकर तुलसीदास जी ने हमें मधुर भाषण की सलाह दी है।

वास्तव में मधुर वाणी औषधि के समान होती है और कटु वाणी तीर के समान घायल करने वाली। एक मधुर शब्द दो रूठे हुए को मना लेता है तो एक कटु शब्द दो मित्रों को हमेशा के लिए दूर कर देता है। कटु वचन बोलने वाले पर कभी कोई विश्वास नहीं करता। कटु वचन बोलने वाले के सामने कोई भी अपना हृदय नहीं खोलता और मधुर बोलने वाले के सामने लोग अपना हृदय खोलकर रख देते हैं। अपने मन की बात आसानी से कह देते हैं।

बाणभट्ट जब मृत्युशय्या पर थे तब उनकी अधुरी पुस्तक पूरी करने की जिम्मेदारी अपने बेटे पर सौंपना चाहते थे। उन्होंने अपने बेटों को खिड़की से बाहर दिखने वाले एक वृक्ष का वर्णन करने को कहा। बड़े बेटे ने कहा, “शुष्कं काष्ठ तिष्ठत्यग्रे।” और छोटे बेटे ने कहा, “निरस तरुवर विलसति पुरतः।” बात एक ही थी। लेकिन छोटे बेटे की बात में माधुर्य था इसलिए उन्होंने छोटे बेटे को अपनी पुस्तक पूरी करने का भार सौंपा।

एक ही बात मधुर शब्दों में कही जा सकती है और कटु शब्दों में भी। लेकिन हर कोई मधुर वचन ही सुनना पसंद करता है। इसलिए संत कवि कबीर कहते हैं, “ऐसी वाणी बोलिए, मन का आपा खोय। औरन को शीतल करे, आपहु शीतल होय।।”

इस प्रकार मधुर वचन हमें आत्मिक सुख भी पहुँचाते हैं।

## सुनो तो जरा

(1) यह उद्देशिका संविधान के उद्देश्यों को प्रकट करने हेतु प्रायः प्रस्तुत की जाती है। भारतीय संविधान की उद्देशिका अमेरिकी संविधान से प्रभावित तथा विश्व में सर्वश्रेष्ठ मानी जाती है। यह संविधान का सार मानी जाती है तथा उसके लक्ष्य को प्रकट करती है।

### भारत का संविधान

#### उद्देशिका

हम, भारत के लोग, भारत को एक संपूर्ण प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,

विचार, अभिव्यक्ति, विश्वास, धर्म

और उपासना की स्वतंत्रता,

प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए,

तथा उन सब में

व्यक्ति की गरिमा और राष्ट्र की एकता

और अखंडता सुनिश्चित करने वाली बंधुता

बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवंबर, 1949 ई. (मिति मार्गशीर्ष शुक्ल सप्तमी, संवत् दो हजार छह विक्रमी) को एतद् द्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

(2) विद्यार्थी स्वयं कृती करें।

#### प्रकल्प

#### खोजबीन

(1) धीरे-धीरे रे मना, धीरे सबकुछ होय।

माली सींचे सौ घड़ा, ऋतु आए फल होय।।

(2) माटी कहे कुम्हार से तू क्या रैंदे मोय।  
एक दिन ऐसा आएगा, मैं रौदूँगी तोय ॥

(3) गुरु गोविंद दोनों खड़े, काके लागू पाय।  
बलिहारी गुरु आपनों, गोविंद दियो मिलाय ॥

(4) साई इतना दीजिए, जा में कुटुंब समाय।  
मैं भी भूखा ना रहूँ, साधु न भूखा जाए ॥

(5) बड़ा हुआ तो क्या हुआ, जैसे पेड़ खजूर।  
पंची को छाया नहीं, फल लागे अति दूर ॥

**अध्ययन कौशल**

★ (1) अंतरजाल : गूगल पर हमारे कई प्रश्नों के उत्तर बड़ी आसानी से उपलब्ध होते हैं। परंतु गूगल का उपयोग स्मार्ट फोन, टैबलेट या लैपटॉप, कंप्यूटर हो तो ही संभव है। अतः इनमें से कोई एक और साथ में इंटरनेट होना आवश्यक है।

(2) संदर्भ ग्रंथ : पुस्तकालय की किताबें जानकारी का अच्छा साधन होती हैं। इन किताबों को पढ़कर अपनी टिप्पणी बना सकते हैं या विशिष्ट पन्नों की झेरॉक्स लेकर अपने पास फाईल में संकलन कर सकते हैं।

(3) अखबार या पत्र-पत्रिकाएँ : इनको पढ़कर हम जानकारी प्राप्त कर सकते हैं और आवश्यक जानकारी के फुटनोट बनाकर रख सकते हैं या खुद की खरीदी पत्र-पत्रिकाओं के पन्ने काटकर अपने पास फाईल करके संकलित कर सकते हैं।

(4) किसी व्यक्ति का भाषण, अध्यापक द्वारा बताई बातें या दूरदर्शन पर देखीं, सुनीं बातें भी हमें जानकारी दे सकती हैं। अर्थात उनके भी नोट्स बनाकर रखने से ही वह जानकारी काम आएगी। क्योंकि समय के साथ जानकारी का विस्मरण होना प्राकृतिक है।

**General Science**

**Topic 11 : Cell Structure and Micro-organisms**

**Q.1. (A)** (1) The organelle called the **chloroplast** is present in plant cells only.

(2) Garbage is converted into **manure** by micro-organisms.

(3) In the cell, photosynthesis is carried out with the help of **chloroplast**.

(4) An electron microscope is necessary for the study of **viruses**.

**(B)** (1) The **plasma membrane** is the outermost covering of animal cell.

(2) The **plant** cells carries out photosynthesis.

(3) The size of **paramoecium** is about 100 micrometres.

(4) The antibiotic **penicillin** destroys the germs of diphtheria and pneumonia.

**(C)** (1)-(d), (2)-(c), (3)-(e), (4)-(b), (5)-(a)

**(D)** (1) True (2) False (3) False  
(4) True (5) False

**(E)** (1) rice (2) snail (3) cell wall  
(4) vacuole (5) virus

**(F)** (1) Algae (2) Polygonal shape  
(3) Porous double membrane

**Q.2. (A)** (1) **Nucleoid** : An irregularly shaped region in a prokaryotic cell (e.g. bacteria) containing the genetic material is called nucleoid.

**(2) Ribosomes :** Single walled, dense, spherical bodies composed mainly of RNA. They are present in all active cells. They are either scattered in the cytoplasm or attached to the outside of endoplasmic reticulum. They are the sites where proteins are synthesized.

**(3) Antibiotics :** Antibiotics are types of medicines that destroy pathogens and retard their growth. They are produced commercially with the help of specific microbes.

**(B) (1)**

	<b>Plant cell</b>	<b>Animal cell</b>
<b>(i)</b>	The cell wall is the outermost covering of the plant cell.	<b>(i)</b> The cell membrane is the outermost covering of the animal cell.
<b>(ii)</b>	The cell wall is present in the plant cell.	<b>(ii)</b> The cell wall is absent in animal cell.
<b>(iii)</b>	Vacuoles in plant cells are larger in size and more in number.	<b>(iii)</b> Vacuoles in animal cells are smaller in size and fewer in number.
<b>(iv)</b>	Chlorophyll is present in plant cell.	<b>(iv)</b> Chlorophyll is absent in animal cell.
<b>(v)</b>	Cytoplasm is not so dense.	<b>(v)</b> Cytoplasm is denser and more granular.

**(2)**

	<b>Prokaryotic cell</b>	<b>Eukaryotic cell</b>
<b>(i)</b>	Cells present in prokaryotic organisms, do not have membrane bound organelles.	<b>(i)</b> Cells present in eukaryotic organisms have well-defined membrane bound organelles.

<b>(ii)</b>	Prokaryotic cells are smaller in size ranging from 1 - 10 $\mu\text{m}$ .	<b>(ii)</b>	Eukaryotic cells are comparatively larger in size ranging from 5 - 100 $\mu\text{m}$ .
<b>(iii)</b>	They have one chromosome.	<b>(iii)</b>	They have more than one chromosome.
<b>(iv)</b>	They do not have well defined nucleus.	<b>(iv)</b>	They have well defined nucleus.
<b>(v)</b>	Membrane bound organelles such as mitochondria are absent in prokaryotic cell.	<b>(v)</b>	Membrane bound organelles such as mitochondria are present in eukaryotic cell.

**(3)**

	<b>Cell wall</b>	<b>Cell membrane</b>
<b>(i)</b>	Cell wall is found only in plant cells.	<b>(i)</b> Cell membrane is found predominantly in all animal cells.
<b>(ii)</b>	It is the outermost covering of a plant cell.	<b>(ii)</b> It is the outermost covering of an animal cell.
<b>(iii)</b>	Cell wall gives definite shape to the plant cell as it is rigid.	<b>(iii)</b> Since cell membrane is not rigid, it gives flexibility to the cells.
<b>(iv)</b>	It is made up of cellulose.	<b>(iv)</b> It is made of proteins, lipids, etc.

**(C) (1)** The 'cell' is the basic structural, functional and biological unit of all living organisms. It is the smallest unit of life that can replicate independently. Cells are often called the 'building blocks of life'.

**(2)** The different organelles in a cell mainly include the nucleus, endoplasmic reticulum, cytoplasm, golgi bodies, lysosomes, mitochondria, vacuoles, plastids, ribosomes, etc. Cell wall and plastids are present in plant cells only.

**(3)** The organisms which cannot be seen with our eyes but can only be observed under a microscope are called microorganisms. They may be unicellular or multicellular. Algae, fungi, protozoa, bacteria and viruses are classified as micro-organisms.

**(4)** The different types of micro-organisms are classified as algae, fungi, protozoa, bacteria and viruses.

**(5)** The infants are vaccinated according to a fixed time schedule in order to maximize benefits for disease control and infant health. Immunization is done to protect children against diseases and build up their immunity against them. Since the immunity for some diseases wears away with time, a scheduled vaccination time period is recommended so that the child is protected against diseases such as polio, tetanus, diphtheria, chickenpox, hepatitis, rubella, etc.

**(6)** Vaccine is an antigenic preparation produced in a laboratory with the help of microbes to provide immunity (resistance) against a particular disease.

**(7)** Each cell type has its own role to play in helping our bodies to work properly. Cells acquire definite shape according to the function they need to perform.

**(8)** Cells are protected by cell wall in case of plants and cell membrane or plasma membrane in animal cells.

**(9)** Cells form the basis of the structure and function of all living organisms. It is only with the help of cells that living organisms carry out all the different life processes.

**(10) (i)** Change in the colour of the food shows that the food is spoiled. E.g., red meat becomes darker in colour, while food like bread may become yellow, green.

**(ii)** One of the easy ways to tell that food has spoiled is by smelling. If it is spoilt, it will have unpleasant odour and colour. Odour may change due to mould, fungus and bacteria grown in food.

**(iii)** Observing it when we see the food closer to the surface, it seems to have a slimy and sticky texture. It means bacteria have started multiplying on its surface and it is getting spoiled.

**(11)** While purchasing the food, packed food or tinned food, we must check the date on the label. E.g., for bread, milk, etc., check the 'use by' or 'best before' dates when you buy the food.

We must not eat canned or packaged foodstuffs after the expiry date, because canned foodstuffs have to be consumed within a specific period of

time. After this period is over harmful, bacteria like *Clostridium* start growing in it. These bacteria produce toxic substances. If consumed, it can cause diarrhoea and vomiting, and may lead to food poisoning. In order to prevent such hazards, the expiry date or the date which is printed on the food should be checked.

(12) Large quantity of food is prepared during marriage or other community functions. If the food prepared is left over for a long period or food is left uncovered in an unhygienic condition with house-flies sitting on it etc., the microbes like bacteria or disease-causing germs (pathogens) grow in the food. Sometimes water used in cooking the food is not filtered and is contaminated, *Staphylococcus* bacteria are likely to grow in the foodstuffs and produce a poisonous substance like enterotoxin. Eating these foodstuffs causes diarrhoea and vomiting. Hence, food poisoning incidents occur during marriage or other community functions.

(13) Yoghurt is mixed in the batter or dough for making rava-idli, bhature, naan as yoghurt contains *Lactobacillus* bacteria. When these bacteria are allowed to grow in batter, they break down the substance producing new substances as they multiply in them. Hence, in this process, it acts on sugar of the flour and releases carbon dioxide gas. This gas makes the dough rise and when steamed or fried, the gas escapes leaving idli, bhature, naan soft and spongy.

(14) Yoghurt, idli, dosa are prepared by fermentation.

During this process, complex carbohydrates and proteins are broken down into simpler ones that are easy to digest.

(15) The root nodules of leguminous plants like pea, bean, and fenugreek provide shelter (home) to nitrogen-fixing bacteria like *Rhizobium*.

(16) The materials like purses, wallets, belts, footwear are made of leather. These are made of organic substances of animal origin. During rainy season or moist conditions, micro-organisms like fungi grow on these leather articles and spoil the leather items or get frayed, hence leather articles like purses, wallets, belts, footwear need to be polished. Polishing keeps moisture away from coming in contact with leather. So, to protect the articles from fungal growth, they must be kept dry.

(17) In a humid atmosphere, micro-organisms like fungi in the form of powdery materials are found on old currency notes or old rubber or paper. Fungi grow quickly on organic substances which are made of plant products.

(18) Dry waste includes wood, paper, cardboard, etc. Wet waste includes plant leaves, agricultural waste, cow-dung, etc. The dry and wet wastes are collected separately in order to recycle dry waste easily and to use wet waste as compost. Dry waste is not easily decomposable and needs to be reused and recycled.

(19) Micro-organisms cannot grow at the normal body temperature of human beings, i.e. 37°C. They can only grow between the optimal temperature of 15°C to 35°C.

**(20)** If clothes remain damp in the rainy season, microbes like bacteria, fungi and mould may grow over them. The clothes may produce a foul (unpleasant) smell. They may also attract mosquitoes and serve as a breeding ground for them.

**(D) (1)**

- (i) After heavy rainfall and floods, when the water recedes, the water and landscape can be contaminated with hazardous materials like debris, pesticides, fuels and untreated sewage.
- (ii) This water can get contaminated. It may contain harmful and disease-causing viruses, bacteria, fungi or protozoa.
- (iii) Infections such as diarrhoea and vomiting can be caused due to such contaminated water.
- (iv) As flood water spreads, it causes infectious diseases.
- (v) These can lead to outbreaks of diseases like typhoid, cholera, hepatitis and malaria, etc.

**(2)**

- (i) Moulds, yeasts and bacteria are some of the important micro-organisms which cause food spoilage or cause food to become stale.
- (ii) When food is exposed to moist condition or air, it is contaminated by a number of microorganisms which start multiplying.
- (iii) These micro-organisms use nutrients from the food. As a result, the nutritive value of the food decreases.
- (iv) Micro-organisms also release certain toxic substances in the food owing to which it becomes unfit for consumption.

- (v) The consumption of spoilt or stale food leads to food poisoning which is hazardous to life.

**(3)**

- (i) When the land is ploughed deep, the soil is turned up.
- (ii) This makes the soil suitable for growing crops.
- (iii) Weeding becomes easier.
- (iv) Loosening the soil exposes the germs and insects in it to the sun and thus kills them.
- (v) Tilling also helps to aerate the soil.
- (vi) This improves respiration of the plants and their roots grow stronger and deeper.
- (vii) Thus, in order to make the soil even and the land ready for sowing, the soil is turned over during tilling.

**(4)**

- (i) The mode of nutrition in fungi is saprophytic.
- (ii) Saprophytic means utilising dead and decaying organic food and converting it into organic substances.
- (iii) These plants cells do not contain chlorophyll.
- (iv) They can grow quickly on any organic matter when the conditions are moist or if there is humidity in the air.

**(5)**

- (i) Food items such as milk, meat, fruits and vegetables are preserved by keeping them at low temperature in refrigerator.
- (ii) Treatment of food to low temperature in the refrigerator retards chemical and enzymatic reactions and stops the growth and activity of micro-organisms which spoils food.

(iii) Hence, to preserve the food from getting spoilt or to prevent the activity of micro-organisms which contaminate milk, meat, fruits and vegetables, a refrigerator is used in almost every home.

(6) (i) Baking powder and baker's yeast (micro-organisms) is added in the preparation of bread.

(ii) Yeast is a micro-organism that brings about the process of fermentation.

(iii) Fermentation is a chemical process in which yeast brings about the conversion of one type of carbon compound into another type.

(iv) Heat is generated in this process and carbon dioxide and some other gases are released.

(v) These gases cause an increase in the volume of the dough.

(vi) Because of these gases, bread swells or rises during baking.

(7) (i) Cattle are generally fed with fodder like oil cake, gram, jaggery, grain meal, cotton seed, etc.

(ii) The mixture of this fodder is soaked in water.

(iii) When the mixture is soaked in water, it brings about fermentation.

(iv) As it is fermented, the nutritive value of this mixture increases.

(v) This therefore becomes a good supplementary food for cattle which give milk.

(vi) The yield of milk increases due to such food.

(vii) Hence, fodder is soaked in water before offering to cattle.

**Q.3. (1) Uses of micro-organisms :**

- (i) Micro-organisms are used for various purposes.
- (ii) They are used in the preparation of curd, bread and cake.
- (iii) *Lactobacillus* bacteria promote the formation of curd.
- (iv) Yeast cells are used for the process of fermentation in the preparation of bread.
- (v) Some bacteria (*Rhizobium*) live inside the root nodules of leguminous plants like pea, bean, etc., and perform the function of nitrogen fixation.
- (vi) Several bacteria in the soil carry out decomposition of dead and decaying matter, they in turn make humus from them. Fertility of the soil is thus increased due to bacteria.
- (vii) They are also used in cleaning up of the environment. For example, the organic waste (vegetable peels, remains of animals, faeces, etc.) is broken down into harmless and usable substances by bacteria.
- (viii) Micro-organisms are also used on a large scale, commercially for the production of alcohol, wine and acetic acid (vinegar). Yeast is used for commercial production of alcohol and wine.

**The harmful effects of micro-organisms :**

- (i) Micro-organisms are harmful in many ways. These micro-organisms include bacteria, fungi, viruses and protozoa.
- (ii) Micro-organisms that cause diseases in human beings, animals and plants are called pathogens.

(iii) Some micro-organisms like *Clostridium* spoil food, some micro-organisms like fungi spoil food, clothing and leather. Following table gives information about the harmful effects of micro-organisms causing diseases in plants and animals.

	<b>Micro-organism</b>	<b>Diseases in Plants</b>	<b>Diseases in Animals</b>
(1)	Protozoa	Flagellated protozoa causes disease in phloem tissue, wilt of palm, heart rot of coconut.	Malaria, dysentery, sleeping sickness.
(2)	Fungi	Leaf spot on rice, rust on wheat and ergot on bajra.	Ringworm, eczema.
(3)	Bacteria	(i) Wilt on tomato plant, caused by <i>Pseudomonas</i> . (ii) Root rot disease by <i>Erwinia</i> .	Typhoid, tuberculosis, cholera, etc.
(4)	Viruses	(i) Tobacco mosaic disease caused by tobacco mosaic virus. (ii) Yellow mosaic virus on lady's finger or okra.	Smallpox, measles, poliomyelitis.

### **Harmful effects of disease-producing micro-organisms in human beings :**

Pathogens enter our body through the air we breathe, the water we drink or the food we eat. They can also get transmitted by direct contact with an infected person or carried through an animal. Microbial diseases can spread from an infected person to a healthy person. Communicable diseases spread through air, water or physical contact. Examples of such diseases include cholera, common cold, chickenpox and tuberculosis.

#### **(2) A Simple Microscope :**

- (1) A simple microscope is also called magnifying glass that consists of single convex lens for magnification of small focal length.
- (2) It is generally used for seeing the magnified images of small objects, usually fixed in a suitable frame with a handle or mounted on a stand. A maximum magnification about 20 times can be obtained by simple microscope.
- (3) It is used by watch makers for observing small parts of the watch while cleaning or repairing. It is used by jewellers to examine precious stones to detect any flaws in them. It may also be used for reading small font. It is used by skin specialists to detect various diseases of skin.

#### **A Compound Microscope :**

- (1) A combination of 2 convex lenses having short focal lengths is used in compound microscope.
- (2) Our eyes cannot perceive an object having a size less than 100 micrometre.

(3) Generally, the size of micro-organisms is less than 100 micrometre.

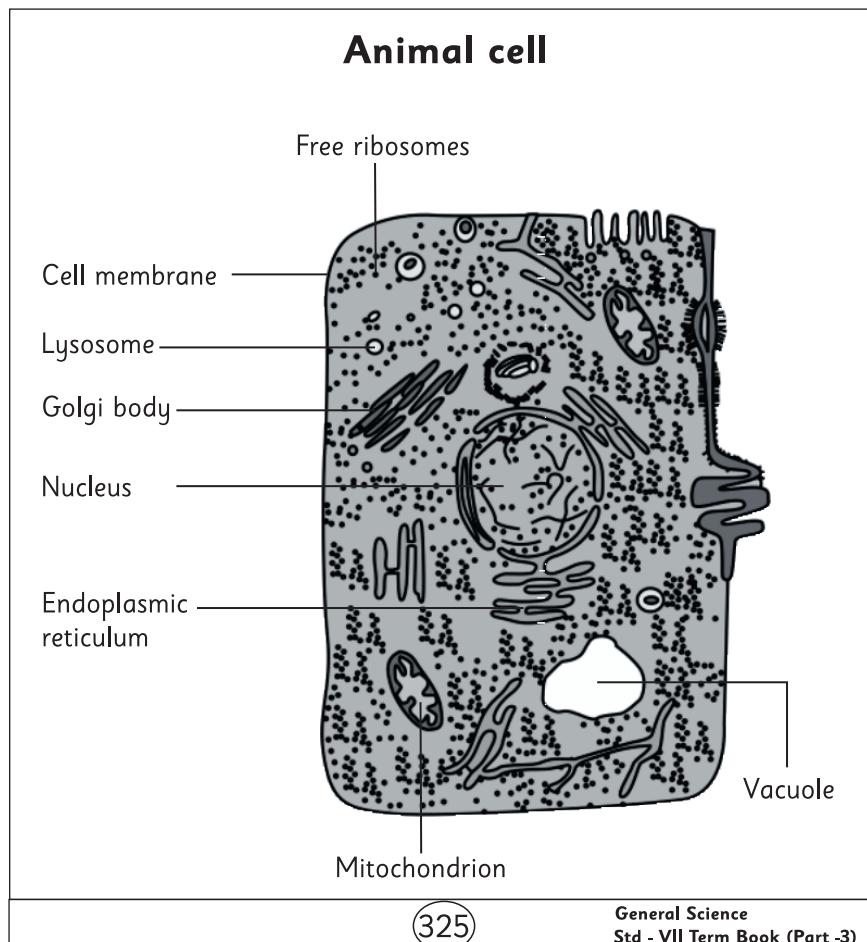
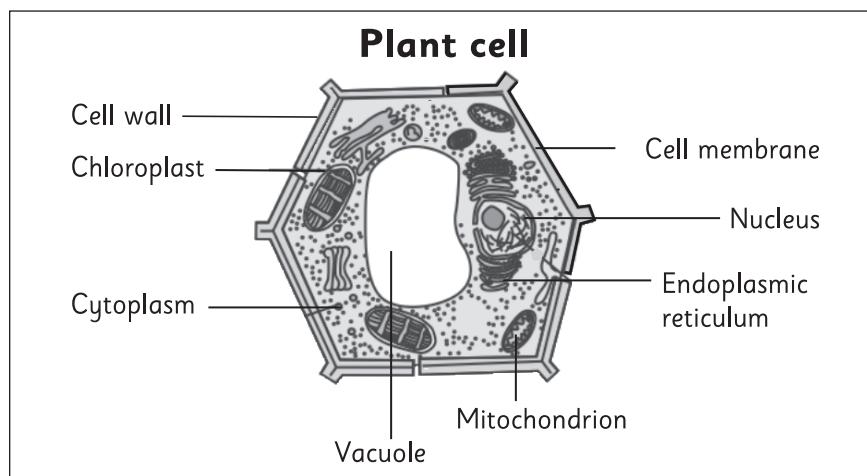
(4) With proper combination of an objective and eye piece, a magnification (40–1000X) can be achieved by a compound microscope. Thus, it can be used to observe bacteria, viruses, cells, micro-organisms, blood corpuscles, plant and animal cells, etc.

(3)

	<b>Parts of the cell</b>	<b>Structure</b>	<b>Occurrence/ Location</b>	<b>Functions</b>
(i)	Cell wall	Outermost covering of a cell. Mainly composed of cellulose.	Plant cells only	(1) Gives rigidity and shape to the plant cell. (2) Provides protection.
(ii)	Cytoplasm	Semi-fluid substance with water soluble organic and inorganic substances. It occupies the space between nucleus and plasma membrane.	Plant cell and animal cell.	(1) Cell organelles are scattered in the cytoplasm. (2) Cellular chemical reactions take place in cytoplasm. It also aids in metabolic activities of the cell.

(iii)	Cell membrane (Plasma membrane)	(1) Outermost covering in animal cell. (2) Extremely thin, delicate and flexible membrane.	Plant and animal cells.	(1) Maintains shape of the animal cell. (2) Regulates entry and exit of substances in and out of the cells.
(iv)	Golgi bodies	(1) Made up of several flat sacs. (2) Consist of tubular vesicles and vacuoles.	Plant and animal cells.	(1) Secretion of hormones and enzymes. (2) Proper distribution of proteins.
(v)	Nucleus	(1) Mostly spherical and dense. (2) There is a porous double membrane around it. (3) Contains network of thread-like structures called chromatin fibre which contains DNA.	Plant and animal cells.	(1) Regulates cell functions or controls all functions of the cell. (2) Contains chromosomes (having of genes that control hereditary characters)

(vi)	Endoplasmic reticulum	(1) Sprawling network of tubular double membrane. (2) May be smooth or rough (attached ribosomes)	Plant and animal cells.	To make necessary changes in protein produced by ribosomes and send them to the golgi bodies.
(vii)	Mitochondria	(1) Double walled, inner wall thrown into folds. (2) Have their own DNA, contains ribosomes.	Plant and animal cells.	Release or produce energy and synthesize respiratory enzymes.
(viii)	Plastids	Double walled structure contains DNA.	Found only in plant cells	(1) Chloroplast : Photosynthesis. (2) Chromoplast: Imparts colour to fruits and flowers. (3) Leucoplast : Stores starch, lipids and protein.
(ix)	Vacuoles	Fluid filled spaces enclosed by a membrane.	Generally present in plant cell. In animal cells, it is small and temporary.	(1) It helps to throw out waste products of the cells. (2) Gives turgidity to the cell.



## Topic 12 : The Muscular System and Digestive System in Human Beings

**Q.1. (A)** (1) **Muscles** are bundles of fibres that can contract and relax as required.

(2) Muscles are firmly attached to bones by means of **tendons**.

(3) Muscles contribute almost **40%** to the weight of a healthy adult human body.

(4) The **involuntary** muscles do not depend upon ones will.

(5) The **smooth** muscles are present in the internal organs other than the heart.

(6) The movement in cardiac muscles is **involuntary**.

**(B)** (1) The process of digestion starts from the **mouth**.

(2) Eyelids have **voluntary** muscles.

(3) **Production of blood cells** is not a function of the muscular system.

(4) Muscles of the heart are **cardiac muscles**.

(5) Pushing forward the food that has been chewed is the function of the **oesophagus**.

(6) Muscles of the stomach are **smooth**.

(7) Enzymes formed in the mouth is known as **amylase**.

(8) Mechanical breakdown of food is due to **chewing**.

(9) Partly digested food (in liquid form) goes into the **small intestine** after it leaves the stomach.

(10) Cardiac muscles cause the heart to relax and contract continuously at a rate of about **70** times per minute.

**(C)** (1) Anus      (2) Bile juice      (3) Unicels  
 (4) Heart      (5) Lipase

**(D)** (1)-(b), (2)-(d), (3)-(e), (4)-(c), (5)-(a).

**(E)** (1) Tongue      My taste buds can tell only a  sweet taste.

(2) Liver      I am the largest gland in the body.

(3) Large intestine      I am 7.5 metre long.

(4) Appendix      Digestion is impossible  without me.

(5) Lungs      I play an important role in  excretion.

(6) Stomach      I digest only fats and  carbohydrates.

(7) Oesophagus      I push the food towards the stomach.

(8) Anus      I do the major work of throwing undigested material out of the body.

**(F)** (1) Salivary glands, liver, pancreas, gastric glands  
 (2) Trypsin, lipase, amylase      (3) Smooth muscles  
 (4) Skeletal muscles      (5) Voluntary muscles

**(G)** (1) Pepsin      (2) Involuntary      (3) Enzyme  
 (4) Biceps      (5) 1.5 m long

## Q.2. (A) (1)

	<b>Biceps</b>	<b>Triceps</b>
(i)	They are located on the front of the bone in our upper arm.	(i) They are located on the back of the bone in our upper arm.

(ii)	Biceps are the muscles responsible for the pulling action.	(ii)	Triceps are the muscles we exert for pushing action.
(iii)	The biceps are made up of 2 muscle bundles (namely - long head, short head).	(iii)	Triceps are made up of 3 muscle bundles (namely - lateral head, long head and medial head).

(2)

	<b>Small Intestine</b>	<b>Large Intestine</b>
(i)	It is about 6 m long.	(i) It is about 1.5 m long.
(ii)	It absorbs the digested nutrients.	(ii) It takes part in absorption of water from the undigested remains of food.
(iii)	Most of the digestion takes place in small intestine.	(iii) It has no role in digestion.
(iv)	It secretes a number of digestive juices.	(iv) It does not secrete any digestive juice.

(B) (1) There are 3 types of muscles in the human body. They are skeletal muscles, cardiac muscles and smooth muscles.

(2) **Acidity** : Acidity is the term used for set of symptoms caused by increased production of acid by the gastric glands of stomach and when there is no food present to be digested.

**Causes of acidity are :**

(i) Diet - Increased consumption of spicy food and oily food.

(ii) Irregular meals, like not having meals regularly at a particular time, result in the accumulation of secreted acid in the stomach.

(iii) Stress

(iv) Alcohol consumption

(v) Lack of physical activity

(vi) Indigestion

(vii) Constipation

**Effects of acidity on the human body :**

(i) Over-production of acid may affect teeth, muscles, joints, various organs and organ systems.

(ii) Bloating (3) Burping (4) Digestion is impaired (5) Flatulence (6) Heart burn (7) Decrease in normal appetite (8) Headache, weakness and fatigue (9) Cardiovascular problems (10) Kidney or liver disease (11) Osteoporosis (12) Dysphagia, etc.

(3) Muscles are bundles of fibres that can contract and relax when required.

Bones don't work alone. They need help from muscles and joints. Muscles are firmly attached to bones by means of tough, cord - like tissues called tendons, which allow the muscles to pull the bones. When muscles contract, there is a movement at the joint and the bones move either nearer to or away from each other.

(4) In the body, muscles always work in groups. When some muscles contract, other muscles of the same group in the body relax.

(5) Tongue, heart, liver, pancreas, stomach and intestines are made up of only muscles.

(6) No, all the food that we eat does not get converted into useful, nutritive substances. Some portion of it remains undigested and is thrown out of the body through the anus.

(7) An organ system is a group of organs that work together to perform one or more functions. The bones in our body are joined to each other by tendons.

(8) The food that we eat is taken inside the body and digested in the alimentary canal. The nutrients obtained through the process of digestion and assimilation are absorbed in the blood. No, the food does not mix with blood.

(9) Cardiac muscles present in the heart bring about contraction and relaxation (beating) of the heart. Cardiac muscles cause the heart to relax and contract continuously at about 70 beats per minute. If the cardiac muscles do not move, the heart will stop beating. Blood supply to vital organs like brain will stop, ultimately leading to death.

(10) The stomach has smooth muscles. They bring about churning movements. If the stomach muscles do not move, food will not get churned and hence food will not be digested. Both mechanical and chemical digestion of food will stop. Food will remain in the stomach and get decayed. It will lead to deterioration of health.

**Q.3. (1)**

- (i) Gastric glands are present on the walls of the stomach.
- (ii) They secrete gastric juices which contain an enzyme pepsin, dilute hydrochloric acid and mucus.
- (iii) The hydrochloric acid is needed to activate the enzyme as it needs acidic environment in order to digest protein.

(iv) Enzyme pepsin digests proteins in acidic medium only. Hence, in order to digest the protein and also to help in killing the microbes, and other disease-causing pathogens which enter the stomach through food and water, food becomes acidic in the stomach.

**(2)**

- (i) Various processes like blood circulation, breathing, etc., are vital functions.
- (ii) They do not depend upon our will.
- (iii) The muscles of heart carry out functions such as pumping blood throughout the body by the contraction and relaxation of the heart.
- (iv) These movements are involuntary.
- (v) Hence, cardiac muscles are said to be involuntary muscles.

**(3)**

- (i) Intoxicating substances like tobacco, alcohol, cigarettes if consumed for a long time, affect the various organs of the body and can lead to dysfunctioning of the system.
- (ii) Chewing of tobacco for a long time causes its particles to stick the teeth, gums and skin of the mouth cavity and slowly causes injury to these parts resulting in their dysfunction.
- (iii) Mouth, pharynx, intestine become infected and can cause cancer leading to death.
- (iv) Consumption of alcohol causes problems like vomiting, nausea and headache, liver damage, kidney failure, etc.
- (v) Smoking of cigarette increases the risk of stroke, heart attack, peptic cancer, lung cancer, pancreatitis, etc.

(vi) Hence, to prevent organs from getting damaged and smooth, efficient, optimum functioning of system, intoxicating substances should not be consumed.

**(4)**

- (i) Muscles contract and relax as the different body parts move.
- (ii) Muscles provide a definite shape and posture to the body.
- (iii) Their movements help in carrying out various life processes in the body. From breathing and digestion of food to running and lifting heavy loads, muscles help us perform different functions.
- (iv) For performing various strenuous activities and exercises, muscles need to be strong and efficient. If the muscles are not strong, they will get tired and fatigued easily.

**Q.4. (1)** The human digestive system consists of alimentary canal beginning with mouth, long muscular tube oesophagus, stomach, small intestine and large intestine. It also consists of associated digestive glands.

**(1) Mouth :**

- (i) In the mouth, food is chewed with the help of teeth.
- (ii) This helps in breaking the large food particles into smaller ones.
- (iii) Thus, digestion starts in the mouth.

**(2) Oesophagus :**

- (i) It is a large muscular tube connecting the mouth and the stomach.
- (ii) It carries the partly digested food into the stomach.

**(3) Stomach :**

- (i) It is a large sac-like muscular organ.
- (ii) In stomach, food is churned and thoroughly mixed with gastric juice.
- (iii) The gastric juice is secreted by gastric glands. There are three components of gastric juice, namely enzyme pepsin, mucus and hydrochloric acid.
- (iv) By the action of the gastric juice, food becomes a semi-solid slurry which is pushed into the small intestine by action of the sphincter muscles located at the lower end of the stomach.

**(4) Small Intestine :**

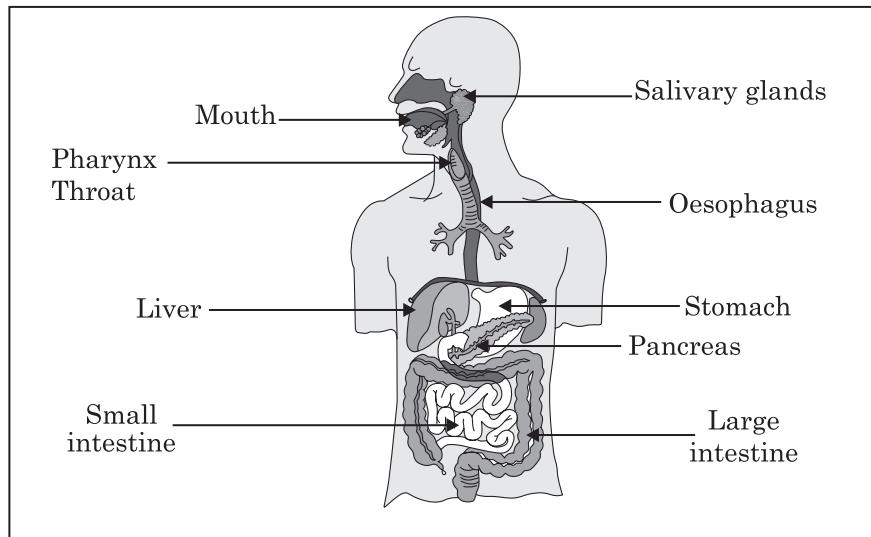
- (i) The small intestine is about 6 m long. Most of the digestion is completed in the small intestine.
- (ii) Three different digestive juices are mixed with food in the small intestine.
- (iii) After the process of digestion is completed, absorption of food takes place in the small intestine.

**(5) Large Intestine :**

- (i) It is about 1.5 m long. Absorption of water and salts takes place in the large intestine.
- (ii) Undigested remains of the food digested in the small intestine enter the large intestine.
- (iii) Large intestine does not have any digestive function.

**(6) Anus :**

- (i) It is the opening of alimentary canal to the outside.
- (ii) Undigested material is thrown out of the body through anus.



(2) There are four types of teeth-incisors, canines, pre-molars and molars. Each type of tooth performs a specific function.

- (i) **Incisors** : These are 8 teeth located in the front centre of the mouth. (4 on top and 4 on the bottom) We use incisors to bite out food.
- (ii) **Canines** : Humans have four canine teeth. They are the sharpest teeth. They are used for tearing food.
- (iii) **Pre-molars** : There are eight pre-molars in total. They have a flat biting surface. They are used for tearing and crushing food.
- (iv) **Molars** : These are the largest teeth in the mouth. An adult human has 12 molar teeth. They are used to chew and grind food into smaller pieces.

## Topic 13 : Changes - Physical and Chemical

**Q.1. (A)**

- (1) Changes in which only **physical** properties of a substance change are called physical changes.
- (2) Changes in which new substances are formed are called **chemical** changes.
- (3) In **tinning** method, copper and brass articles are coated with tin.
- (4) The process of coating a thin layer of zinc on iron or steel is called **galvanization**.
- (5) The process of formation of vapour from a liquid is called **evaporation**.

**(B)**

- (1) For protecting iron pipes from corrosion they are coated with **zinc**.
- (2) Which of the following is a physical change?  
**Heating of iron**.
- (3) Which of the following is a non-periodic change?  
**Earthquake**.
- (4) Fast change is **bursting of balloon**.
- (5) Which of the following is a periodic change?  
**Changing of seasons**.

**(C)**

- (1) Irreversible change, useful change, chemical change.
- (2) Irreversible change, undesirable change, harmful change, chemical change
- (3) Non-periodic change, harmful change.
- (4) Periodic change, physical change.
- (5) Reversible change, useful change, physical change.
- (6) Natural change, non-periodic change, harmful change.

(7) Irreversible change, chemical change.  
 (8) Physical change, man-made change.  
 (9) Irreversible change, natural change, chemical change.  
 (10) Irreversible change, chemical change.  
 (11) Reversible change, physical change.  
 (12) Irreversible change, man-made change, chemical change.  
**(D)** (1) False (2) False (3) True (4) True  
**(E)** (1)-(d), (2)-(c), (3)-(b), (4)-(a)  
**(F)** (1) Burning (2) Freezing  
 (3) Changing of seasons (4) Rusting

**Q.2. (1) Corrosion :** It is the process by which the surface of a metal is oxidized and corroded due to oxygen, moisture and vapours of chemicals in air.  
**(2) Slow change :** The changes that take place over a long period of time are called slow changes.

**(B) (1)**

	<b>Physical change</b>		<b>Chemical change</b>
<b>(i)</b>	Composition of substance remains same.	<b>(i)</b>	Composition of substance changes.
<b>(ii)</b>	No new substances are formed.	<b>(ii)</b>	New substances are formed.
<b>(iii)</b>	Chemical properties of substance remain same.	<b>(iii)</b>	Chemical properties of substances undergo change.
<b>(iv)</b>	Physical changes are reversible.	<b>(iv)</b>	Chemical changes are irreversible.

**(2)**

	<b>Periodic change</b>		<b>Non-periodic change</b>
<b>(i)</b>	Changes that occur again and again after a definite interval of time are called periodic changes.	<b>(i)</b>	Changes that do not occur again and again after a definite interval of time are called non-periodic changes.
<b>(ii)</b>	Examples of periodic change : a. Occurrence of day and night. b. Changing of seasons, etc.	<b>(ii)</b>	Examples of periodic change : a. Earthquake. b. Volcanic eruption, etc.

**(3)**

	<b>Natural change</b>		<b>Man-made change</b>
<b>(i)</b>	Changes that occur naturally or that have occurred of their own accord are called natural changes.	<b>(i)</b>	Changes that occur as a result of human activity or created by humans are called man-made changes.
<b>(ii)</b>	Ripening of fruit, rainfall, spoiling of milk are the examples of natural change.	<b>(ii)</b>	Water pollution, deforestation, burning of fossil fuels that have a global impact and disturb natural balance are examples of man-made changes.

**(C) (1)** Canned foodstuffs have to be used within a specific period. After the period is over, harmful bacteria like Clostridium may start growing after their date of expiry. These bacteria produce toxic substances as they grow in foodstuffs. If such foodstuffs are eaten, they may cause diarrhoea, vomiting, etc.

So, in order to avoid food poisoning or any health hazards, while purchasing canned food, its expiry date should be checked.

- (2) When an iron article rusts, a reddish brown layer is formed on it due to corrosion. The corrosion is caused by oxygen, moisture, vapours of chemicals in air. But when iron articles are coated with a paint, it will not allow moisture or oxygen, vapours of chemicals in air to come in contact with the iron surface. Hence, to prevent the iron articles from getting rusted, they should be given a coat of paint.
- (3) When wooden articles are exposed to air, moisture or direct sunlight for long period, they will wear out or fade away and sometimes due to prolonged use, they form cracks. Sometimes due to moisture in rainy season, mould may grow on the surface of wooden articles and damage the wood. By polishing the wooden articles, we can protect the surface from moisture, air and also increase its resistance to moisture. Thus, to prevent the wooden articles from getting damaged, they should be polished.
- (4) The process of coating a thin layer of tin (molten tin) on copper and brass is called tinning. Cooking utensils made of copper and brass get a greenish coating due to corrosion. The greenish substance is copper carbonate and it is poisonous. Therefore, copper and brass utensils are tinned to prevent corrosion.
- (5) A dry handkerchief gets wet at once when dipped in water because it readily absorbs the water through the pores in it as a result of capillary action. This change takes place in short period of time. Hence,

wetting of handkerchief is a quick change. But when the handkerchief becomes wet, it takes a long time to dry it. As drying of handkerchief is due to evaporation of water from its surface which is a slow process, a dry handkerchief gets wet at once on dipping in water, but it takes long for a wet handkerchief to dry.

### Q.3. (A) (1)

The changes that occur in the surroundings are caused due to various natural and human factors.

**Natural factors:** Rainfall, temperature, light, wind, etc.

**Human factors:** Pollution, deforestation, desertification, etc.

- (2) The changes that are done by the action of humans and their activities are called man-made changes. Eg. burning of fossil fuels, constructing a dam, etc.

- (3) Corrosion is degradation or destruction of metal due to its reaction with oxygen, moisture, vapours of chemicals in the air. When an iron article rusts, a reddish brown layer is formed on it. A greenish layer is seen to form on copper article. This process is called corrosion of metal.

Corrosion is caused by oxygen, moisture, vapour of chemicals in the air.

- (4) Different methods to prevent corrosion of metals are :

- (i) **Galvanization :** Iron articles are given a thin coat of zinc to prevent corrosion. This coating of zinc on iron articles is called galvanization.

- (ii) **Tinning:** Copper and brass articles are coated with thin coating of tin. This process is called tinning.

(iii) **Coating** : A layer of oil or paint or grease is applied on the surface of a metal to prevent corrosion.

(iv) **Electroplating, anodising and alloying** are the other methods to prevent corrosion of metals.

(5) The kind of change seen in the falling of tree in a storm is a natural change.

(6) The kind of change seen in the conversion of milk into yogurt is a chemical change.

(7) (a) **Fast change** : Changes that take place in short period of time are called fast changes.  
Examples : burning of paper, bursting of crackers, glowing of bulb, etc.

(b) **Slow change** : Changes that take place over a long period of time are called slow changes.  
Examples : Germination of seed from a plant, digestion of food, the growth of child into adult, rusting of iron, etc.

(8) An irreversible change is a type of change that cannot be reversed and is a permanent change.  
**Examples** : (i) Ripening of mango. (ii) Burning of wood to obtain ash. (iii) Conversion of milk into curd. (iv) Digestion of food.

(9)

<b>Physical change</b>	<b>Chemical change</b>
Making a table from wood	Burning of wood
Breaking of a glass object	Ripening of a tomato
Heating of platinum wire	Rusting of iron

(10) The change of seasons from summer to rains to winter is a periodic change.

(11) The minute, second and hour hands all show periodic motion. If 1 period =  $360^\circ$  (1 complete circle), hour hand will show periodic change 1 time, minute hand 12 times and seconds hand 720 times.

(B) (1) The following characteristics / properties are taken into account while identifying : (a) A physical change in a substance and (b) A chemical change in a substance.

(a) **Physical change in a substance** :

- (i) The substance which has undergone a physical change can be recovered by easy means.
- (ii) No new substance is formed.
- (iii) Physical properties such as colour, size and state of the original substance may change.
- (iv) A physical change is temporary.
- (v) In this, heat may or may not be released or absorbed.

(b) **Chemical change in a substance** :

- (i) The substance which has undergone a chemical change cannot be recovered by easy means.
- (ii) A new substance or substances are formed having different properties than the original.
- (iii) Physical properties and chemical properties undergo a change.
- (iv) A chemical change is permanent.
- (v) The heat may be released or absorbed.

(2) It was nearing six o' clock in the evening (Periodic change). The sun was setting (Periodic change). A breeze was blowing (Natural change). Leaves on the tree were shaking (Natural change). Sahil was sitting in the courtyard, rolling balls of wet soil and

shaping them into various toys (Man-made change, Physical change, Reversible change). Then he felt hungry and went into the house (Natural change). Mother made a dough from wheat flour and fried pooris (Chemical change, Irreversible change). While eating hot pooris, his attention was drawn outside the window. It had started raining (Natural change, Physical change). There was lightning, too (Natural change, Chemical change). Sahil was enjoying his dinner in the dim light (Man-made change, Physical change).

**Q.4. (1)**

- (i) In the first picture, we observe the milk has changed into curd. It is a chemical change and an irreversible change.
- (ii) In the second picture, we observe the ice melting. It is a physical and reversible change.
- (iii) In the third picture, we observe the germination of a seed. The kind of change is chemical change and irreversible change.
- (iv) In the fourth picture, we observe that from the flower pot cracker sparkles emitting out from the chemicals stored in it. The kind of change is chemical change and irreversible change.
- (v) In the fifth picture, we observe the liquid is boiling in a sauce pan and getting converted into water vapour. the kind of change is physical change and reversible change.
- (vi) In the sixth picture, we observe the logs of wood burning, giving out the flames. The kind of change is chemical change and irreversible change.
- (vii) In the seventh picture, we observe the bursting of crackers. The kind of change is chemical change and irreversible change.

**(2)**

- (i) Change shown in picture (C) is temporary.
- (ii) The changes shown in pictures (A) and (B) are permanent.
- (iii) The changes shown in pictures (A) and (B), the original matter has undergone change.
- (iv) The original matter in the pictures (C) and (D) remains unchanged.
- (v) The changes shown in picture (A) and (B) show new substances, with a new property formed.

#### Topic 14 : Elements, Compounds and Mixtures

**Q.1. (A)**

- (1) Matter is composed of tiny **particles**.
- (2) Matter which is made of only one constituent is called **substance**.
- (3) The molecular formula of carbon dioxide is **CO<sub>2</sub>**.
- (4) 2 atoms of oxygen are joined to form a **molecule** of oxygen.
- (5) The chemical symbol of potassium is **K**.

**(B)**

- (1) Naturally occurring elements are **92**.
- (2) Symbol of tungsten is '**W**'.
- (3) Which of the following is an element by NOT a metal? **Oxygen**.
- (4) Which of the following is a metal? **Iron**.
- (5) Which one of the following substances is not a mixture? **Water**.
- (6) **Aurum** is the Latin name from which gold is derived.

**(C)**

- (1 - e), (2 - f), (3 - c), (4 - b), (5 - a), (6 - d)

**(D)**

- (1) Selenium (2) Brass (3) Water

(4) Silver

(5) Carbon

(E) (1) False

(2) False

(3) False

(4) True

(5) False

(F) (1) Copper

(2) Distillation

(3) Oxygen

**Q.2. (A) (1) Substance :** A substance is matter made of only one constituent which has specific composition and properties.

**(2) Element :** A substance whose molecules are made of one or more atoms which are exactly alike, is called an element.

**(3) Metalloid :** An element that shows some properties of metals and some properties of non-metals is called a metalloid. Eg. arsenic, silicon, etc.

**(B) (1)**

	<b>Metals</b>		<b>Non-metals</b>
(i)	Metals have lustre.	(i)	Non-metals lack lustre.
(ii)	Metals are malleable.	(ii)	Non-metals are not malleable.
(iii)	Metals are ductile.	(iii)	Non-metals are not ductile.
(iv)	Metals are good conductors of heat and electricity.	(iv)	Non-metals are poor conductors of heat and electricity.
(v)	At room temperature, metals are in the solid state (Exception: Mercury is in liquid state.)	(v)	At room temperature, non-metals are in the liquid or gaseous state (Exception carbon, sulphur are solids)
(vi)	Generally, metals have high density.	(vi)	Non-metals have lower densities in the solid state.

**(2)**

	<b>Mixtures</b>		<b>Compounds</b>
(i)	A mixture is formed by mixing different elements or compounds.	(i)	A substance formed by a chemical combination of two or more elements is a compound.
(ii)	The proportion of various components in a mixture is not fixed.	(ii)	The proportion of various components in a compound is always fixed.
(iii)	No chemical change takes place during the formulation of mixture.	(iii)	There is always a chemical change that takes place during the formation of compound.
(iv)	No new substance is formed as constituents do not react chemically.	(iv)	A new substance is formed due to chemical reaction.
(v)	The constituents can be separated easily by physical method.	(v)	The constituents can be separated only by chemical or electrochemical processes or reactions.

**(3)**

	<b>Atoms</b>		<b>Molecules</b>
(i)	Atoms are the smallest particles of a chemical element.	(i)	Molecules are the smallest particles in a chemical element or compound that has chemical properties of element or compound.
(ii)	They may or may not exist in free state.	(ii)	They exist in free state.

(iii)	Atoms are indivisible.	(iii)	Molecules are the divisible into individual atoms.
(iv)	They take part in chemical reaction.	(iv)	They do not take part in chemical reaction.

(4)

	<b>Separation by Distillation</b>	<b>Separation by Separating Funnel</b>
(i)	This method of separation is used for separating a mixture containing two miscible liquids.	(i) This method of separation is used for separating a mixture containing two immiscible liquids.
(ii)	It will separate the two miscible liquids by boiling without decomposition and having sufficient difference in their boiling points.	(ii) It will separate the two immiscible liquids into two distinct layers depending on their densities.
(iii)	A solution of common salt in water or potassium permanganate in water can be separated by distillation.	(iii) Kerosene and water can be separated by separating funnel.

**Q.3. (A) (1)** Buttermilk is a mixture of residual fat, proteins, sugar and minerals. The particles of buttermilk do not settle when left undisturbed. This is because the particles in it are very tiny and light and remain evenly distributed in the liquid. These particles cannot be separated from the buttermilk even by the methods like filtration or settling. But when the buttermilk is churned, a force is generated which pushes the particles away from the centre. As a

result, the solid particles i.e., the butter separates out from the buttermilk. Butter being lighter rises up and settles over the buttermilk. Hence, buttermilk is churned to get butter.

**(2)** In the method of separation of components from a mixture by chromatography, two properties of substances are taken into consideration. These are the solubility of the substance in the solvent that moves up and the ability of the substance to stick to the stationary filter paper. Since these properties are mutually opposite and different for different substances, all the ingredients of a mixture do not rise all the way to the upper end of the filter paper but remain behind at different heights, when solvent, i.e., water rises up to the upper end of the paper.

**(3)** When a wet cloth is wrapped around a storage container like an earthen pot during summer, due to the heat, the water from the wet cloth evaporates and the cloth becomes dry. Earthen pot being porous, the outside heat draws out the water from it, which is taken up by the dry cloth and makes it wet. As this cycle of wetting and drying of the cloth continues, the water in the storage container remains cool. Hence, in order to keep the water in the storage tank cool, a wet cloth is wrapped around it in summer.

<b>Symbol</b>	<b>Name of the element</b>
Zn	Zinc
Cd	Cadmium
Xe	Xenon

Br	Bromine
Ti	Titanium
Cu	Copper
Fe	Iron
Si	Silicon
Ir	Iridium
Pt	Platinum

(2)

	<b>Compound</b>	<b>Molecular formula</b>
(1)	Hydrochloric acid	HCl
(2)	Sulphuric acid	$H_2SO_4$
(3)	Sodium chloride	NaCl
(4)	Glucose	$C_6H_{12}O_6$
(5)	Methane	$CH_4$

(3)

<b>Elements</b>	<b>Compounds</b>	<b>Mixtures</b>
iron	water	soil
copper	thermocol	coal
	rubber	paper
	plastic	coir

(4) There are three states of matter - solid, liquid and gas.  
[Note : Two more states are known, they are plasma and Bose-Einstein condensate.]

(5) The properties of matter are :

- Matter is made up of tiny particles.
- Matter has mass and volume. It occupies space.

Heat or change in temperature bring about change of state of matter.

(6) Air contains 78.09% of nitrogen, 20.95% of oxygen, 0.93% argon, 0.04% carbon dioxide and small amounts of other gases. It also contains variable amounts of water vapour.

(7) No, carbon dioxide is not an element, it is a compound.

(8) The properties of elements are due to the atoms they are made up of.

(9) The atoms of different elements are dissimilar.

(10) The elements like sodium, magnesium, iron, gold, silver, platinum, etc., are metals. The elements like hydrogen, oxygen, nitrogen, carbon, etc., are non-metals. Arsenic, silicon, selenium, antimony are examples of metalloids.

(11) Oxygen helps in combustion.

(12) No, water does not help combustion.

(13) Cement, alloys like steel, bronze, brass, coffee, tea, soda, salad, milk, sherbet, bhel, etc., are used in everyday life.

(14) All mixtures may not be useful to us. e.g., Mud puddle (dirty water) is not useful to us.

(15) From the mixture of semolina, salt and iron filings, the iron filings can be separated by using magnet, as the iron filings get attracted to the magnet. The mixture of semolina and salt can be separated by sieving, as they differ in size.

(16) The water that falls from clouds is naturally pure.

(17) The property of difference in the boiling points of liquids are seen in the distillation method.

(18) The distilled water is pure water. It is commonly used to top off lead acid batteries used in cars and

trucks. It is also widely used in brewing wine, desalinating water, refining oil, etc.

**Q.4. (1)** The components of mixtures are separated by simple methods like straining (filtering), sifting, picking, sorting, winnowing, combing with a magnet and sublimation, etc.

- (i) **Straining (filtering)** : It is used to separate the compound or mixture like filtration, i.e. pouring (mainly liquid substance) through a porous or perforator device or material in order to separate out any solid matter. E.g., tea leaves can be separated by straining while making the tea.
- (ii) **Sifting** : It is a method to separate the components of mixture by separating out or putting through a sieve. E.g., flour and husk can be separated by sifting.
- (iii) **Sorting** : It is the process of separating the components of mixture by separating the particles according to size or shape. E.g., in a sediment sample, pieces of gravel, sand, silt can be separated by sorting.
- (iv) **Winnowing** : It is the method used to separate the chaff from grain, especially by throwing it into the air and allowing the wind or a forced current or air to blow away impurities. E.g., Husk is separated from heavier seeds of grain by winnowing.
- (v) **Combing with magnet** : Mixture containing iron filings can be separated by combing with a magnet, since magnet shows the property of attracting iron filings. E.g., mixture of iron and sulphur can be separated by combing with magnet.
- (vi) **Sublimation** : It is the process in which solid on heating changes to gaseous state without going

into liquid state and vice-versa. E.g., we can separate the components of the mixture of common salt and ammonium chloride by the process of sublimation.

## **(2) Use of metals :**

- (i) Metals like copper, aluminium, iron are used for making cooking utensils.
- (ii) Copper wires are used as conducting wires in electrical gadgets, radios, refrigerators, etc.
- (ii) Iron and aluminium sheets are used to make roofs of houses.
- (iv) Gold, silver and tin are used to make coins and ornaments.
- (v) Mercury is used in thermometers.

## **Use of non-metals :**

- (i) Graphite, a form of carbon, is used as the core in pencils.
- (ii) Graphite, (carbon) is used as electrodes in an electro-chemical cell.
- (iii) Silicon dioxide, the oxide of the metalloid silicon, is used in making glass and cement.
- (iv) Silicon is used in the solar cell.
- (v) Red phosphorus is used in making safety matches, crackers, germicides, explosives, etc.
- (vi) Sulphur is used for producing acids and also in some medicines, gun powder, etc.

## **Uses of compounds :**

- (i) **Sodium chloride (salt)** : It is an essential constituent of our daily diet. It is used in the preparation of baking soda and washing soda.

- (ii) Sodium bicarbonate (baking soda) : It is used in the preparation of bread, cakes, dhokala, etc. It is used as antacid, which helps to reduce acidity in stomach. It is useful in preparing  $\text{CO}_2$  gas and is one of the constituents of a fire extinguisher.
- (iii) Water : It is used as a universal solvent. It is used to extinguish fire.
- (iv) Sodium carbonate (washing soda) : (i) It is used as a cleansing agent in washing clothes. (ii) It is used in the manufacture of detergent power, paper and glass.
- (v) Bleaching powder : (i) It is used in the preparation of chloroform. (iii) It is used for bleaching cotton in the textile industry.

**Uses of mixtures :**

- (i) Cement is a mixture of limestone, clay and sand. When cement is mixed with water, it can bind sand and gravel and form solid hard mass called concrete which imparts strength to the building.
- (ii) Wood is a mixture of a number of compounds such as lignin cellulose, water, hemicellulose, etc. It is used for construction work including beams, walls, doors and floors.
- (iii) Alloys are mixtures containing two or more metals or a metal and a non-metal. E.g., stainless steel is an alloy of iron, carbon, chromium, nickel, carbon. It is used in cooking utensils, cupboard, machinery parts, tools, etc. Brass is an alloy of copper and zinc used in hinges, electrical plugs, etc.
- (iv) Coal is a mixture of carbon and other traces of compounds. It is used as fuel.

- (v) Beverages like tea, coffee, milk are mixtures used in day-to-day life. These beverages are used as stimulants.

**(3) Applications of centrifugation :**

- (i) Centrifugation is used in diagnostic laboratories - separation of urine components and blood components in forensic and research laboratories and also for blood and urine tests for providing information to assist in the diagnosis, monitoring and treatment of a wide range of diseases.
- (ii) Used in dairies and homes to separate butter from cream.
- (iii) Used in washing machines to squeeze out water from wet clothes.
- (iv) Centrifugation is a common procedure in microbiology and cytology used to separate certain organelles from whole cells.
- (v) Centrifugation aids in separation of protein using purification techniques such as salting out in industrial chemistry. e.g., ammonium sulphate precipitation.

**(4) (A) Distillation :**

- (i) Simple distillation is the primary method used for purifying water of unwanted chemicals and minerals such as salt.
- (ii) It is used for separating acetone and water.
- (iii) It is used in distillation of alcohol.
- (iv) Distillation is used in many commercial processes such as production of alcohols, distilled water, and many other liquids.

(v) Desalination plants also use distillation to turn seawater into drinking water.

The method of distillation is used for separating the components of mixtures because this separation technique involves two miscible liquids that boil without decomposition and having sufficient difference in their boiling points. The process of distillation is used to obtain liquid substances in their pure state.

**(B) Separating funnel :**

- (i) It is used to separate a mixture of oil and water.
- (ii) It is used to separate a mixture of kerosene oil and water.
- (iii) In the extraction of iron from its ore, the lighter slag is removed from the top by this method to leave the molten iron at the bottom of the furnace.

This method of separating funnel is used for separating the components of mixture because this separation process involves two immiscible liquid phases. One phase is the aqueous phase and the other phase is an organic solvent. This separation is based on the differences in the densities of the liquids. The liquid having more density forms the lower layer and the liquid having less density forms the upper layer.

**(5) Precautions to be taken while using the method of distillation :**

- (i) Before any distillation process starts, ensure that apparatus is set properly, and there is no obstruction in the piping that could lead to excessive pressure build up causing it to burst.

- (ii) The flammable organic solvents such as alcohol, acetone, etc., are highly volatile. They require careful handling. Otherwise, they may catch fire, if not handled properly.
- (iii) The laboratory should be well-ventilated to prevent alcoholic vapour.
- (iv) Use proper disposal of all waste.
- (v) Monitor the temperature constantly. Don't allow the liquid to overheat.
- (vi) The heat source should be at high strength at the beginning of the distillation to start off and reduce when approaching the boiling point.
- (vii) Control the temperature of the condensation of liquid so that no vapour exits the condenser.
- (viii) See to it that the fire extinguisher is installed.

**Precautions to be taken while separating compounds of mixture by separating funnel :**

- (i) Use the glassware carefully.
- (ii) Open the stopcock of the separating funnel after shaking, to release the pressure inside the funnel.
- (iii) The top should be vertical to allow the water to run out and must be closed before the oil reaches the bottom of the funnel.
- (iv) Organic solvents should be handled carefully.
- (v) Fire extinguisher should be installed.

## Topic 15 : Materials We Use

**Q.1. (A)** (1) **Fluoride** is essential for the strengthening of bones and the enamel covering of teeth.

(2) A **detergent** is a substance that cleans or wipe away dirt.

(3) The natural detergents contain a chemical named **saponin**.

(4) Soft soap contains **potassium** salt of fatty acids.

**(B)** (1) The substance that helps water to remove dirt from the surface of materials is called **detergent**.

(2) Fluoride is used in toothpaste to prevent **tooth decay**.

(3) Soap is a salt of **fatty acid** and sodium hydroxide.

(4) Synthetic detergents can be used in **hard** water as well.

(5) For construction purposes, **portland** cement is the most commonly used cement.

**(C)** (1)-(b), (2)-(c), (3)-(d), (4)-(a)

**(D)** (1) False      (2) True      (3) False

**(E)** (1) fluoride      (2) soap      (3) volcanic ash  
(4) sodium hydroxide      (5) ash

**Q.2. (A)** (1) Clothes become dirty mostly because particles of dirt and dust cling to the fibres. A molecule of a detergent holds on to a water molecule at one end and an oil molecule at the other. As a result, the molecules of oil mix with water. Thus, when soiled clothes are immersed in such a solution, the greasy matter is surrounded by detergent molecules and are removed from the clothes. The dirt is detached from the fabric.

(2) Take a clear empty bottle with a cap. Fill one third of the bottle with tap water. Add 10 drops of pure liquid soap or soap powder to the bottle. Shake the bottle vigorously for few seconds. Stir vigorously until the soap is thoroughly mixed into the water. Observe the soap solution in the bottle carefully. If we observe, there is a distinct lack of fluffy bubbles, lather or soap foam and the water appears to be cloudy, precipitate or milky and forms a scum (a filmy or frothy layer of matter that forms on the surface of water). Thus, the water sample suggests it is hard water.

(3) The principal ingredients of a toothpaste are calcium carbonate, calcium hydrogen phosphate and certain proportion of fluoride.

(a) The functions of each ingredient are :

- (i) Calcium carbonate and calcium hydrogen phosphate remove the dirt on teeth.
- (ii) These ingredients also polish the teeth.

(b) Fluoride : A certain proportion of fluoride in the toothpaste helps prevent tooth decay. Fluoride is essential for the strengthening of bones and of the enamel covering the teeth.

(4) Cement is a dry, greenish grey powder with fine particles. It is made from raw material which consists of 60% lime (calcium oxide), 25% silica (silicon dioxide), 5% alumina. The rest is iron oxide and Gypsum (calcium sulphate.)

(5) Cement is an important material in construction. Cement is the principal ingredient in preparation of concrete. Concrete is prepared by mixing cement, water, sand and gravel. Concrete is formed when cement creates a paste with water that binds with sand and rock to harden. Concrete is the most

common material used for construction due to its properties such as binding, strength, durability and easy availability. Hence, without cement, concrete cannot be made.

(6) A detergent is a substance that cleans or wipes away dirt.

List of detergents that we use are ritha, shikakai, soap, washing soda, washing powder, liquid soap, shampoo, etc.

(7) Fabrics made from silk, wool, raw silk, chiffon, satin are made of delicate fibres. These delicate garments are very fragile. Alkali damages the fibres of silk or wool. Care has to be taken to protect the fabric from shrinking, damping, fading, stretching. Hence, for washing these delicate garments, detergents containing mild alkali should be used. Mild detergents are formulated for washing delicate garments in order to prevent the delicate garments from getting spoiled.

(8) The property possessed by certain solid substances of spreading on a surface to influence the surface tension of liquid is called surface activity.

The chemicals responsible for the surface activity of various detergents are sodium lauryl sulphate, sodium dodecylsulfate, dioctyl sodium sulfosuccinate, ammonium lauryl sulphate, sodium tripolyphosphate, sodium silicate, sodium carbonate, sodium carboxymethyl cellulose, etc.

(9) In olden times in India, acacia, neem twigs, coal powder, ash, tooth powder, salt, pomegranate rind were used for cleaning teeth.

Today, a variety of toothpastes and toothpowders are used for this purpose.

(10) Natural materials are any products of matter that come from organic substances which are of plant and animal origin e.g., silk, cotton, wool, etc.

Man-made materials are new substances produced by chemical processing of natural substances. e.g., detergent, rayon, polyester, cement, plastic, tooth paste, etc.

(11) Sodium fluoride is the source of fluoride which is used in most of the toothpastes or tooth powders.

(12) Roads are made of concrete as they are highly durable, last longer, easy to maintain, and also cost less than other materials like Asphalt.

(13) The presence of soluble bicarbonates, chlorides, and sulphates of calcium and magnesium causes the hardness of water.

**Q.3. (1)** Soap is a mixture of sodium or potassium salts of fatty acid. Hard water contains magnesium and calcium salts. Soap reacts with calcium and magnesium salts to form water insoluble calcium and magnesium salts of the fatty acids. No froth (lather) is formed with soap if hard water is used. Thus, soap is wasted and the cloth gets spoiled due to these insoluble salts. Hence, soap cannot be used in hard water.

**(2)** A synthetic detergent works in both soft as well as hard water. However, soaps work only in soft water. As compared to soap, a small quantity of a synthetic detergent is enough for effective cleaning action. A synthetic detergent can be effectively used at ordinary temperature. The solubility of synthetic detergents is higher than soaps. A synthetic detergent does not damage the delicate fibres of woollen and silk garments as soap does. Hence, synthetic detergents are superior to soaps.

(3) Clothes, when washed in hard water, become dull or get discoloured. In hard water, minerals like calcium and magnesium prevent water from mixing with detergent to form a solution. As a result, soap scum is formed. Sometimes the soap scum and mineral residue in the cloth may form yellow or reddish brown stains or spots on clothes during washing. Hence, coloured spots are often formed on clothes during washing.

(4) (i) When oil and water are mixed, oil floats to the top of water because oil is less dense than water.  
(ii) Oil and water are immiscible liquids.  
(iii) However, when sufficient quantity of detergent is added to a solution of oil and water, it becomes homogeneous, due to the detergent molecule.  
(iv) A detergent molecule has two end. One end holds on to a water molecule and another end holds on to the oil molecule.  
(v) The two opposing forces help in dissolving the oil in water, thus creating a homogeneous mixture.

(5) The main compounds present in tobacco masher are tar, nicotine, etc. When tobacco masher is used in cleaning teeth, the nicotine or tar settle into the oral cavity while brushing the teeth. These substances are able to leach their way into microscopic openings in the enamel, resulting in yellow or brown discolouration of the teeth surface. Thus, tobacco stains cannot be removed easily. Prolonged use of tobacco masher can damage the oral tissues or cause inflammation of tissues. Sometimes it can be fatal and may lead to oral cancer. Hence, tobacco masher should not be used for cleaning teeth.

**Q.4. (1) Similarities between Natural and Man-made detergents:**

- (i) Natural and man-made detergents act as cleansing agents.
- (ii) They produce lather or foam when dissolved in water.
- (iii) The molecules of both detergents are long and the properties of its two ends are different. A molecule of a detergent holds on to a water molecule at one end and oil molecule at the other. As a result, the molecules of oil mix with water. This is how cleansing action of both the detergents take place.

**Differences**

	<b>Natural detergents</b>	<b>Man-made detergents</b>
(i)	Natural detergents are natural cleansing agents.	(i) Man-made detergents are synthetic detergents which act as cleansing agents.
(ii)	Natural detergents are the substances obtained from plant products or plant origin.	(ii) Man-made detergents are new substances produced by the chemical processing of substances of plant or animal origin.
(iii)	Large scale production of natural detergents is difficult.	(iii) Man-made detergents are available in plenty.
(iv)	Natural detergents are bio-degradable.	(iv) Man-made detergents are non-bio-degradable.
(v)	They are affected by hard water and are made less effective.	(v) Hard water has no effect on them.
(vi)	They do not have harmful effect on skin or silk and woollen threads and cloth.	(vi) They have harmful effect on skin or silk and woollen threads and cloth.

## (2) Similarities between Soap and Synthetic detergent.

- (i) Soap and synthetic detergent are man-made detergents.
- (ii) Soap and synthetic detergent are obtained by subjecting the raw materials to a variety of chemical processes.
- (iii) Soap and synthetic detergent are used as cleansing agents.
- (iv) The property of surface activity remains the same for both.
- (v) Production of lather or foam, emulsifying oil substances, cleansing action taking place with both are same.

### Differences

	<b>Soap</b>	<b>Synthetic detergent</b>
(i)	Sodium or potassium salts of fatty acids are the main ingredients of soaps.	(i) Water soluble, salt-like group attached to a long hydrocarbon chain is the main structure of synthetic detergents.
(ii)	They are affected by hard water and are made less effective.	(ii) Hard water has no effect on them.
(iii)	Silk and woollen garments are damaged if washed by soap.	(iii) Silk and woollen garments can safely be washed with synthetic detergents.
(iv)	Their cleansing power is less as compared to that of a synthetic detergent.	(iv) Its cleansing power is much more than that of soap.

## (3) Similarities between Bath soap and Soap for washing clothes.

- (i) Bath soap and soap for washing clothes are man-made detergents.

- (ii) Both the soaps are used as cleansing agents.

- (iii) They produce lather/foam, emulsify fat/oil.

- (iv) Cleansing action or purpose of bath soap and soap for washing the clothes remains same.

- (v) The property of surface activity in the both soaps is more or less similar.

### Differences

	<b>Bath soap</b>	<b>Soap for washing clothes</b>
(i)	Bath soaps are used for bathing.	(i) Hard soap is used for washing clothes.
(ii)	Bath soap contains potassium salt of fatty	(ii) Soap for washing clothes contains sodium salts of fatty acids.
(iii)	Bath soap does not cause irritation of the skin.	(iii) Soap used for washing clothes may cause irritation of skin.
(iv)	Good quality perfumes, oils are used to make bath soap.	(iv) Cheaper quality perfumes and oils are used to make soap for washing clothes.

## (4) Similarities between Modern cement and Ancient cement:

- (i) Modern cement and ancient cement are used for construction work. e.g., buildings, monuments, dams, roads, etc.
- (ii) Lime is one of the common ingredients in making cement of both the types.
- (iii) Properties such as strength, resistance to heat, salt water, durability remain more or less similar.
- (iv) Sheets, blocks, pillars, pipes are made from concrete produced from both the types of cement.

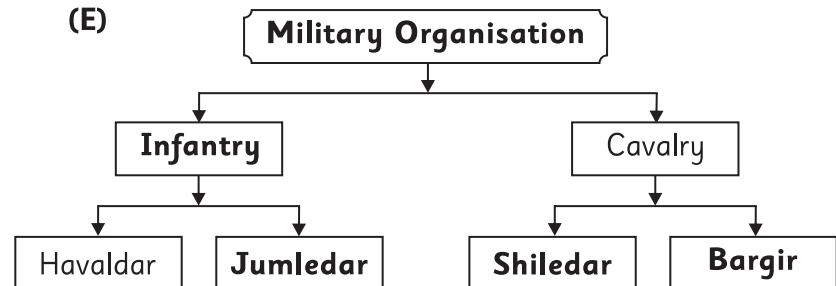
## Differences

	Modern cement		Ancient cement
(i)	Modern cement of today is called Portland cement.	(i)	Ancient cement of the past is called Roman cement.
(ii)	It is made from raw materials which consist of 60% lime (CaO), 25% silica (SiO <sub>2</sub> ), 5% alumina, iron oxide and gypsum (calcium sulphate).	(ii)	It is made from mixing of volcanic ash in moistened lime.
(iii)	Modern cement is produced on a large scale.	(iii)	Ancient cement was produced on a small scale.
(iv)	Concrete made from modern cement is less resistant to salt water.	(iv)	Concrete made from ancient cement is more resistant to salt water.
(v)	Manufacturing of modern cement increases carbon emission and causes pollution.	(v)	Manufacturing of ancient cement significantly reduces the carbon emission and causes less pollution.

## History

### Topic 7 : The Administration of the Swaraj

**Q.1.** (A) (1) Dakshin Digvijay (2) eight (3) 300  
 (4) Agriculture (5) Konkan (6) salt  
 (7) Bahirji Naik  
 (B) (1) Infantry and Cavalry (2) Sarnobat  
 (3) The Conquest of the South  
 (4) Hawaldar and Jumledar (5) Sindhudurg  
 (6) Intelligence department  
 (7) Ashtapradhan Mandal (8) Karkhanis  
 (C) (I) (1) Govandi (2) Gulvan (3) Raigad  
 (D) (I) (1)-(c), (2)-(a), (3)-(d), (4)-(b).  
 (E)



**Q.2.** (1) Maharaj warned the revenue officers that they should not collect more revenue than the amount which was fixed.  
 (2) The job of the intelligence department was to obtain information about the movements of the enemies and submit it to Maharaj.  
 (3) There was a Killedar, a Sabnis and a Karkhanis on every fort.  
 (4) The names of the battle ships in the navy of Chhatrapati Shivaji Maharaj were the gurab, galbat and pal.

(5) The Portuguese of Goa, the Siddis of Janjira and the British factors of Surat and Rajapur were the enemies of the Swaraj at the west coast of India.

(6) Chhatrapati Shivaji Maharaj appointed a council of eight ministers with eight departments for the administration of Swaraj. It was called Ashtapradhan Mandal.

(7) Maharaj knew the importance of agriculture. He paid more attention to the welfare of farmers. He warned the officers that they should not collect more revenue than the amount that was fixed. If the crop was lost due to excessive rains or drought or if an enemy army had devastated, the area of the village, remissions were granted. The peasants were provided with bullocks, ploughs and good seeds for agriculture.

(8) The main objective of Maharaj was to make his subjects independent. They must enjoy their freedom. It was necessary to have a disciplined administration. He had to take comprehensive care of the people's welfare and protect the conquered territories. For these things he appointed Ashtapradhan Mandal, navy, military officers to take care of his subjects. He did not want to dominate his people. He was a good administrator.

**Q.3. (1)** At that time the traders imported salt from the Portuguese territory and sold it in Swaraj. That affected the local trade in the Konkan areas. With the intention of increasing the prices of imported salt, Maharaj raised heavy taxes on that. As a result, the prices of imported salt increased and the prices of local salt decreased. This way Maharaj protected the industry.

(2) Artisans in the village produced goods and fulfilled the needs of the local people. Farmers gave a definite share from their produce to artisans. This share was called 'Baluta'.

(3) The kingdom prospers only with increase in trade. Trade prospers adding to the wealth. The merchants bring novel goods as certain necessities into a kingdom and the goods become available in plenty.

**Q.4. (1)** Chhatrapati Shivaji Maharaj set up a navy because it was necessary to control the activities of the enemies like the Portuguese of Goa, the Siddis of Janjira and British of Surat and Rajapur and protect the West Coast. He realised that one who has a navy, controls the sea. Therefore Maharaj raised a navy.

(2) Chhatrapati Shivaji Maharaj established the Council of Eight Ministers to ensure the smooth management of the affairs of the Swaraj to ensure people's welfare. For this he set up an efficient administration of Ashtapradhan Mandal (Council of Eight Ministers).

### Topic 8 : An Ideal Ruler

<b>Q.1. (A)</b>	(1) Swaraj	(2) discipline	(3) Surajya
	(4) freedom	(5) ryot	
<b>(B)</b>	(1) Daulatkhan	(2) Subramanyam Bharati	
	(3) Chhatrasal	(4) Mahatma Jotirao Phule	
	(5) Sinhagad	(6) Siddi Ibrahim	
	(7) Meeting with Afzalkhan, Escape from Agra		

- (C) (1) Hiroji Farjand and Madari Meheter
- (2) In cash (3) Tolerance
- (D) (1) Daulatkhan (2) Chhatrasal
- (E) (1)-(c), (2)-(d), (3)-(a), (4)-(b).
- (F) (1) True (2) True (3) False (4) True

**Q.2.** (1) A system of making payments to the soldiers in the form of Jagirs.

(2) Maharaj warned the Deshmukh of the Rohida valley not to fail in his duty to the ryot.

(3) Pandit Jawaharlal Nehru has said that Maharaj did not belong to Maharashtra alone, he belonged to the whole Indian Nation.

(4) Maharaj considered the Muslims in Swaraj as his own subjects.

(5) Tilak started Shivajayanti celebrations for the purpose of National awakening.

(6) The grave dangers in the life of Chhatrapati Shivaji Maharaj were the meeting with Afzalkhan, the siege of Panhala, the attack on Shaistakhan, and the escape from Agra.

(7) Jiva Mahala, Bajiprabhu Deshpande, Murarbaji Deshpande, Tanaji Malusare, Hiroji Farjand were the close associates of Maharaj and they risked their lives for Maharaj.

(8) Chhatrapati Shivaji Maharaj issued a warning to his soldiers not to fail in their duties towards the ryot. Maharaj told the Deshmukh to visit every village and shift the people to a safe place down the ghats, during the times of foreign invasion. He also warned soldiers not to

delay in their duties. If Deshmukh did not care for the ryot, he would be responsible for the same.

(9) Maharaj followed a tolerant religious policy. He had framed strict rules for his soldiers that they should not harm a mosque during any campaign. If any one got a copy of the Holy Quran, they should hand over the same with reverence to a Muslim. Maharaj considered the Muslims in Swaraj as his own subjects. He had many Muslim servants, Sardars and officers in his service in the army, navy or in his court.

(10) Chhatrapati Shivaji Maharaj's policy regarding the army was :

- (i) The valuables collected during the campaigns in enemy territories were to be deposited with the Government.
- (ii) Soldiers were honoured for their bravery in a campaign.
- (iii) He looked after the maintenance of the families of the soldiers who died in the battle.

(11) Chhatrapati Shivaji Maharaj gave a strict order to the Deshmukh of Rohida valley not to fail in his duty to the ryot. He had to visit every village and shift people to a safe place down the ghats without any delay for a moment, during the times of foreign invasion. If the Deshmukh delayed and the Mughal army would take the people prisoner, then it would be the Deshmukh's fault.

(12) The future generations will continue to look upon the work of Chhatrapati Shivaji Maharaj of founding the Swaraj and turning it into Surajya as an ideal and a source of inspiration.

**Q.3. (1)** The associates of Maharaj were brave and loyal. They used to perform their duties by risking their lives. So Maharaj took great care of his associates.

**(2)** The soldiers were fighting bravely and risking their lives for Swaraj. They were faithful and loyal to Chhatrapati Shivaji Maharaj. Therefore, for showing bravery in a campaign, Chhatrapati Shivaji Maharaj honoured them and inspired them. He also looked after the families of the soldiers who died in the battle. He even took care of the wounded soldiers of Swaraj as well as the soldiers of enemies.

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### Topic 9 : The Maratha War of Independence

**Q.1. (A)** (1) Sambaji Maharaj (2) Akbar  
(3) Rajaram Maharaj (4) Hambirrao  
(5) Yesubai

**(B)** (1) Chhatrapati Sambhaji Maharaj  
(2) Santaji Ghorpade and Vithoji Chavan  
(3) Yesaji Kank

**(C)** (1) Zulfikarkhan (2) Marathas  
(3) Sambhaji Maharaj (4) Mukarrabkhan  
(5) Santaji Ghorpade and Dhanaji Jadhav

**(D)** (1) Niraji Shinde (2) Riyasatkar

**(E)** (1)-(c), (2)-(d), (3)-(b), (4)-(a).

**(F)** (1) True (2) False (3) False

**Q.2. (1)** The Marathas fought under the leadership of Chhatrapati Sambhaji Maharaj, Chhatrapati Rajaram Maharaj

and Maharani Tarabai for the defence of the Swaraj.

**(2)** Aurangzeb suspended the campaign against the Marathas.

**(3)** When the Marathas laid siege to the Siddi's fort of Dandarajpuri and battered the fort of Janjira with their artillery, the Mughal army invaded Swaraj.

**(4)** Before leaving for Jinji, Rajaram Maharaj had assigned the duty to fight against the Mughals to Ramchandrapant Amatya, Shankaraji Narayan Sachiv and Dhanaji Jadhav.

**(5)** Aurangzeb kept Mukarrabkhan incharge of the Kolhapur province.

**(6)** The war with Mughals became fiercer when Sambhaji Maharaj became the Chhatrapati.

**(7)** Aurangzeb died in 1707 C.E. at Ahmednagar.

**(8)** Maratha war of Independence ended with the death of Aurangzeb.

**(9)** Devdatta has described Maharani Tarabai's valour in the following words :  
"Delhi was humbled, the Emperor of Delhi lost face; such was the wrath of the great queen Tarabai."

**(10)** Sambhaji Maharaj's army laid a siege to Siddi's Dandarajpuri fort and battered the fort of Janjira with the artillery. But at the same time the Mughal army invaded Swaraj. Therefore Sambhaji Maharaj had to return half-way from the Janjira campaign.

**(11)** The Portuguese of Goa joined hands with Emperor Aurangzeb against Sambhaji Maharaj. Hence Sambhaji

Maharaj decided to teach a lesson to the Portuguese.

**(12)** When Rajaram Maharaj went to Jinji, he entrusted the responsibility of protecting the Swaraj to Ramchandrapant Amatya, Shankaraji Narayan Sachiv, Santaji Ghorpade, and Dhanaji Jadhav.

**Q.3. (1)** When Zulfikarkhan put the Raigad fort under siege, that time Rajaram Maharaj, Maharani Tarabai, Maharani Yesubai and her son Shahu were in Raigad. Maharani Yesubai had chosen Rajaram Maharaj as Chhatrapati. So to keep the Maratha Chhatrapati secure without regard for her own life or that of her son, it was decided that Rajaram Maharaj should escape from Raigad and the Raigad fort should be fought under the leadership of Maharani Yesubai. This decision was taken by Maharani Yesubai to tackle the unprecedented calamity on Swaraj.

**(2)** Sambhaji Maharaj was taken to Aurangzeb and by his orders, Sambhaji Maharaj was brutally put to death. This Maratha Chhatrapati did not compromise his self-respect and faced his death nobly and bravely. The Marathas took inspiration from his sacrifice and intensified their fight against the Mughals.

**(3)** Aurangzeb could not succeed in his campaign against the Marathas so he suspended the campaign against the Marathas and turned to the Adilshahi and Qutubshahi kingdom.

**Q.4. (1)** **Chhatrapati Sambhaji Maharaj :** Sambhaji Maharaj was the elder son of Shivaji Maharaj. Shivaji Maharaj had given him excellent education in civil administration and military campaigns. He had interest in the administration of the State and the command of the army from the age

of fourteen. He knew Sanskrit and other languages well. He read many ancient books on polity. He wrote their gist in a book called 'Budhbushanam'. He was courageous and brave, fearless king. He was brutally put to death by Aurangzeb but he faced death nobly and bravely.

**(2)** **Maharani Tarabai :** After the death of Chhatrapati Rajaram Maharaj, Maharani Tarabai led the Maratha War of Independence. She was an intelligent, knowledgeable and capable wife of Rajaram Maharaj. Her management of the army and administration had won renown. Tarabai continued the struggle of Swaraj bravely with the help of her Sardars. She fought for seven years. She kept the Maratha kingdom strong and encouraged Sardars in Mission of Swaraj. Tarabai kept up the legacy of valour inherited from Chhatrapati Shivaji Maharaj.

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## Civics

### Topic 4 : Fundamental Rights - Part I

**Q.1. (A)** (1) law (2) same (3) hierarchy  
(4) Legal (5) education (6) expression  
(7) lawful

**(B)** (1) Untouchability (2) Law  
(3) Fundamental rights (4) Bonded labour  
(5) Women, children and the weaker sections of society  
(6) Bharat Ratna

**(C)** (1) False (2) True (3) True (4) False  
(5) True (6) False (7) False (8) True  
(9) True (10) False

**(D)** (1)-(c), (2)-(a), (3)-(b), (4)-(e).

**(E)** (1) Everyone gets rights at birth.  
(2) Government cannot deprive you of a job by discriminating on the basis of religion, sex, place of birth.

**Q.2. (1)** The titles like Raja, Maharaja and Raobahadur, etc., have been abolished.

**(2)** The Right against Exploitation implies the right to prevent exploitation.

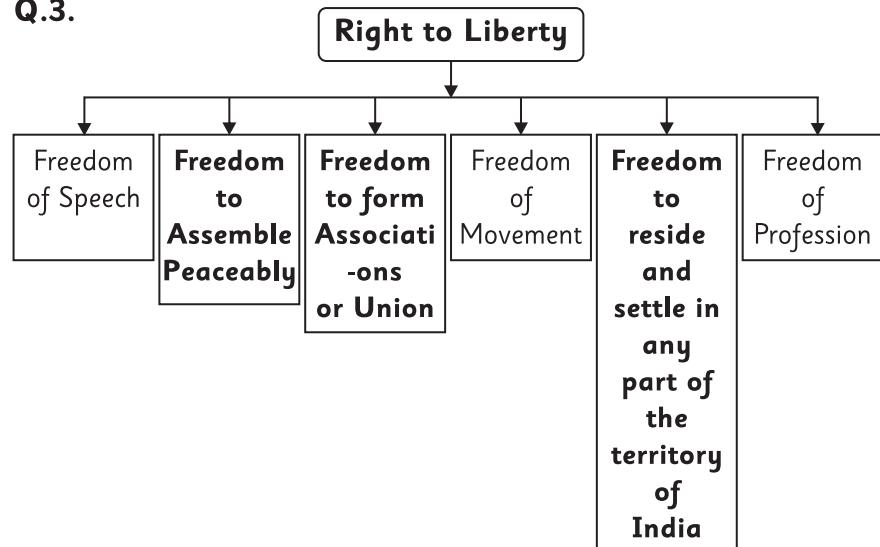
**(3)** The special provision made under the Right against Exploitation is to prevent the exploitation of children. It is prohibited to employ children under 14 years of age in hazardous places.

**(4)** Bonded labour is a labourer who works against his/her wish.

**(5)** Generally women, children, weaker sections of the society and powerless people in the society are exploited.

**(6)** (a) Right to Protection - physical and sexual abuse and all sorts of violence  
(b) Right to Development - Right to education and Right to relax and play

**Q.3.**



**Q.4. (1)** The Indian Constitution has guaranteed equal rights to all citizens in order to create a conducive atmosphere to develop their skills and qualities. These rights are Fundamental Rights.

**(2)** The awards like Padmashree, Padmabhushan, Padmavibhushan, etc., are conferred by the Government upon people for their distinguished contribution in different fields. 'Bharat Ratna' is the greatest civilian award of our country.

**(3)** In order to safeguard the life and liberty, the Constitution has banned all types of oppression through the Right against Exploitation. It has made special provision to prevent the exploitation of children. Accordingly, it is

prohibited to employ children under 14 years of age in hazardous places. Children cannot be employed or made to work in factories and mines.

(4) The Constitution has given equal rights to all Indian citizens to create a conducive atmosphere for the self, as well as the entire society's development. Equal rights protect all individuals from injustice, exploitation, discrimination and deprivation so that they can develop their skills and qualities.

(5) The advantages of equality before law and equal protection of the laws are that the state does not make discrimination against any citizen on grounds of religion, caste, race, sex, descent or place of birth. The inhuman practice of untouchability and the titles of Raja, Maharaja are also abolished by this law. The society is established only on equality.

(6) (i) Rights satisfy a person's basic needs, such as food, education, speech so each person can take advantage of all opportunities. By guaranteeing liberty, equality, and security, human rights protect people against abuse by those who are more powerful.  
(ii) No. They do not have to be given by somebody.  
(iii) No. Rights cannot be taken away.  
(iv) If rights are taken away, one should appeal in any of the courts to seek justice for the same.

(7) There is no discrimination among citizens as superior or inferior, men or women or while extending any protections like protection from arrest without a warrant. There is no discrimination among the citizens on the basis of religion,

caste, race, sex, place of birth or residence. The practice of untouchability has been abolished to establish equality in Indian society. Titles like Raja, Maharaja, Rao Bahadur etc., have also been abolished.

**Q.5. (1)** Our Constitution has established equality in the society by abolishing the titles like Raja, Maharaja, which create an artificial hierarchy in the society. This hierarchy breeds inequality. Hence, the Constitution has abolished the titles like Raja, Maharaja.

**(2)** The Constitution has made a law of equality. This law of equality gives protection to all from the discrimination made in the society on the basis of caste, race, religion, etc. Untouchability is also abolished by the law. That is why practising untouchability is a cognizable offence.

**Q.6. (1)** **Right to Liberty :** Right to Liberty guarantees all the freedoms necessary to the citizens. They are: freedom of speech and expression, freedom to assemble, freedom to form associations or unions, freedom to move freely throughout the territory of India, freedom to reside in any part of the territory of India, freedom to practice any lawful profession, occupation, trade or business of one's choice. This right is a legal protection given to everybody equally. It also includes Right to Education. All children between 6 and 14 years of age are entitled to get education as a Fundamental Right. This ensures that no child will be deprived of education.

# Geography

## Topic 7 : Soils

**Q.1. (A)** (1) hardness, climate (2) basalt  
(3) weathering (4) biotic  
(5) humus (6) vermicompost  
(7) degradation (8) fertile  
(9) Vidarbha (10) extreme rainfall

**(B)** (1)-(b), (2)-(c), (3)-(d), (4)-(a).

<b>(C)</b>	<b>Factors/Process</b>	<b>Role in the formation of soils</b>
(1)	Parent Rock	<b>Turns into powdery material.</b>
(2)	Regional climate	<b>Weathering of rocks.</b>
(3)	Organic material	<b>Gets mixed with the soil and changes to humus.</b>
(4)	Micro-organisms	<b>Help to decompose the dead remains of organic materials.</b>

**Q.2. (1)** The Sahyadri have a humid climate. The leaching of the basalt rocks takes place because of the humid climate. This leads to formation of laterite soil.

**(2)** The vegetal litters, roots of plants and remains of animals etc., get decomposed due to water. In places where there is water and heat, microorganisms and certain other organisms help decompose the dead remains of organic materials at a faster rate. This gets mixed with the soil and humus is formed.

**(3)** The process of weathering of rocks and formation of soil depends on the climate of the region. In equatorial regions the climate is humid. When it is hot and wet, the formation of the soil process is much faster than in dry

places like the Deccan. In humid places, leaching of the rocks takes place faster and soil is formed.

**(4)** Excessive irrigation draws the salts from the soil upwards and makes the soil saline. This saline soil then becomes unproductive. Excessive irrigation is bad for the soil.

**(5)** Konkan area in Maharashtra has laterite soil. This soil is fertile and the rainfall that Konkan gets is sufficient for the growth of rice. Hence, rice is the staple diet of the people of Konkan since the local agricultural produce determines the staple diet of the people.

**(6)** The top layer of the soil gets removed due to wind or water. This means that the soil gets eroded. Running water, climate and diversity in physiography are reasons of soil erosion.

**(7)** (a) The soil quality may get lowered due to various reasons. This is called as soil degradation. (b) To get higher yield of crops, we use chemical fertilizers, insecticides, weedicides, etc. (c) These along with spraying of chemicals lead to soil degradation. (d) Excessive irrigation makes the soil saline and unproductive. This leads to the lowering of humus content in the soil and plants do not get micro-nutrients.

**Q.3. (1)** (a) Soil has to be conserved since in many areas it is becoming infertile and is getting washed away.

(b) Soil conservation includes works like construction of embankments and planting trees on them, construction of gully plugs against the steep slopes, etc.

(c) Such works are taken up by the Department of Soil Conservation.

(d) Continuous Contour Trenches (CCT) are constructed along slopes at different heights to check the velocity of water running along the slopes.

(e) The Government of Maharashtra has implemented the watershed development program along the slopes of rural areas under the title, "Arrest water, let it percolate."

(f) Recently the Government has launched a scheme called 'Jalayukt Shivar' for construction of farm bunds and arresting water of small streams.

(2) Decomposition of the remains of plants and animals can give us organic manure. The vegetal litters, roots of plants, remains of animals, faeces of animals, etc., get decomposed. This can be used as manure. Microorganisms and other organisms help decompose the dead remains of organic matter. Now-a-days production of vermicompost is undertaken on a large scale.

(3) We get information about suitability of a soil for a particular crop at the Agricultural office. The agricultural officer will visit the site and advise accordingly.

(4) Food crops, fruits and flowers are produced according to the type of soil found in that particular area. The regions where soils are fertile can be self-reliant as far as food production is concerned. For the production and growth of plants, soil is indispensable. It provides support to plants. Vegetation is abundant in regions that have fertile soil eg. the Equatorial region. However, in areas where the soil is not fertile, vegetation is scanty e.g., in deserts and where there is shortage of soil, vegetation is not seen eg., Polar areas. Fertile soil favours plant growth.

**Q.4.**

	Action	Effect	Results (w.r.t fertility)
(1)	Construction of embankments	<b>Raising of the ground water level reduces erosion</b>	<b>Soil and water used for cultivation</b>
(2)	<b>Planting of trees</b>	Wind speed decreased	<b>Reduces land erosion</b>
(3)	Farm land is kept fallow for some period	<b>Micro-organisms increase in the soil</b>	<b>Soil becomes fertile</b>
(4)	<b>Biotic material mixed with soil</b>	Humus content increased	<b>Soil becomes fertile</b>
(5)	Trenches are dug across a slope	<b>Checks the velocity of water running along the slopes</b> <b>Reduces soil erosion</b>	<b>Water percolates into the ground</b>
(6)	Litter is burnt in the farm	<b>Less decomposition in the soil</b>	<b>Fertility drops</b>
(7)	<b>Vegetal litters, roots of plants, remains of animals</b>	Proves favourable for micro-organisms	<b>Produces organic material to mix with the soil (humus)</b>
(8)	<b>Excessive irrigation</b>	Salt content in the soil increases	<b>Soil becomes saline and unproductive</b>

(9)	Chemical fertilizers used excessively	<b>Soil degradation</b>	<b>Soil becomes infertile due to loss of micro-nutrients</b>
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### Intext Question

- (1) Laterite soil on the western coast and Regur soil all over occupies most of the area in Maharashtra.
- (2) Along the western coast - Raigad, Ratnagiri and Sindhudurg and Gadchiroli.
- (3) Regur or black soil is found in the river valleys of Maharashtra.
- (4) Laterite soil is found in parts of the Sahyadri ranges.
- (5) Alluvial soil is found at the mouth of the rivers in the western coastal strip e.g., the areas around Panvel - Uran coast, Dharamtar creek, etc.

\* **Think about it !**

- (1) The climate of equatorial regions is hot and humid. Because of this climate vegetal litters decompose faster and make the soil fertile.
- (2) In deserts the heat is tremendous and the rainfall is very low. Vegetation needs fertile soil, abundant water supply and favourable climate throughout the year. Hence, vegetation is sparse in the deserts.

### Topic 8 : How Seasons Occur – Part 2

**Q.1. (A)** (1) Uttarayan (2) diurnal (3) perihelion  
 (4) equinox (5) Solstice (6) 4  
 (7) India

**(B)** (1)-(c), (2)-(a), (3)-(d), (4)-(b).

**(C)** (1) It appears that the sun moves to the north or south in a year.

- (2) Different parallels on the earth would have experienced the same climate throughout the year.
- (3) The sun starts its southward journey from Tropic of Cancer on 21<sup>st</sup> June and northward journey from Tropic of Capricorn on 22<sup>nd</sup> December.
- (4) Summer and winter.

**Q.2. (1)**

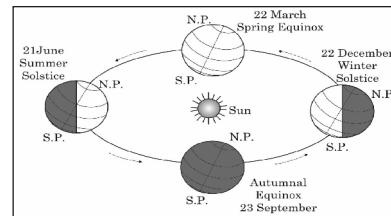
- Seasons occur due to the revolution of the earth around the sun, as well as due to the tilt of its axis of rotation. It is the tilt of the axis that leads to the occurrence of seasons.
- On equinox days, nighttime and daytime are of equal duration.
- Seasons have been decided on the basis of duration of sunlight, equinoxes and solstices. Hence, the climate in this region does not change at all and effects of seasons are not experienced.
- This is the case because the sun does not actually move, it is stationary in one place but this happens due to the earth's revolution around the sun and its rotation around its own axis.
- Penguins evolved to adapt to colder climate which prevents them from spreading to the other pole as the warmer climate between the poles is warmer.

**Q.3. (1)**

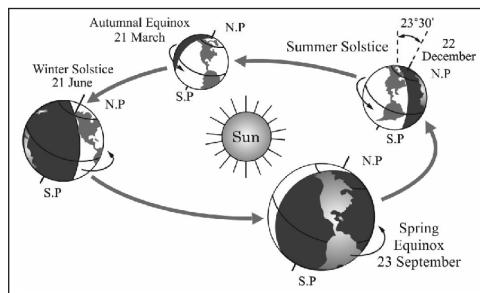
- The earth's velocity varies due to the gravitational forces of the sun and the earth.
- We can observe the apparent movement of the sun from both the hemispheres-north as well as south.
- The dates of equinox are the same every year i.e. 21<sup>st</sup> March and 23<sup>rd</sup> September.
- North Canada experiences winter from September to March.
- South Africa and Australia have summer at the same time.

(6) Duration of daytime is the same on equinox days.

**Q.4.** The dates of Summer Solstice and Winter Solstice with respect to northern hemisphere are mentioned incorrectly.



**\*Q.5. Cycle of seasons, equinoxes, solstices**



**Intext Question**

(1) (a) Winter solstice on December 22<sup>nd</sup>.  
 (b) Spring equinox on March 21<sup>st</sup>.  
 (c) Summer solstice on June 21<sup>st</sup>.  
 (d) Autumnal equinox on September 23<sup>rd</sup>.

(2) Winter.  
 (3) Summer.  
 (4) Summer.  
 (5) The reason is that the sun does not appear in the same position in both the hemispheres.

The position of the rising sun keeps on moving towards the south from 21<sup>st</sup> June to 22<sup>nd</sup> December and towards the north from 22<sup>nd</sup> December to 21<sup>st</sup> June.

**Use your brain Power!**

(1) On 20<sup>th</sup> March sun crosses the equator and enters the northern hemisphere, so the North Pole will have sunrise on 21<sup>st</sup> March.

(2) Though India and England are located in the same hemisphere they lie on different latitudes due to latitudinal difference climatic conditions vary, so cricket matches in these two countries are arranged in different months.

(3) On 21<sup>st</sup> March and 23<sup>rd</sup> September, the equator receives perpendicular rays on two days in a year. On these days, both the poles are at the same distance from the sun. Everywhere on the earth nighttime and daytime are of equal duration. But the sunrays are perpendicular on the equator. The circle of illumination coincides with the great circle defined by two opposite meridians so some parts experience summer and some parts winter on these days.

(4) (i) New Zealand and Australia.  
 (ii) New Zealand stretches approximately between the latitudes 34°23'S and 47°12'S while Australia stretches approximately between the latitudes 10°20'S and 43°39'S.

(5) Due to the location and climatic condition Jammu and Kashmir have two capitals, i.e., the summer capital is Srinagar and the winter capital is Jammu.

During winter temperature goes down below 0°C in Srinagar it makes difficult for trade and administration, so they shift all their trade and administrative matters to Jammu in the winter which comparatively has lesser amount of cold.

**Can you tell ?**

(1) In Fig 'A' North pole is receiving sunlight.  
 (2) In fig 'B' North pole is not receiving sunlight.  
 (3) Northern hemisphere has longest daytime on 21<sup>st</sup> June.  
 (4) Northern hemisphere will have the longest night on 22<sup>nd</sup> December.  
 (5) On 21<sup>st</sup> June Tropic of Cancer will receive perpendicular sunrays.

(6) From 22<sup>nd</sup> March to 23<sup>rd</sup> September in the northern hemisphere it will be summer considering the position of North pole.

(7) Australia has summer between 23<sup>rd</sup> September to 21<sup>st</sup> March during that period only, cricket matches will be held in Australia. Australia being in Southern hemisphere weather conditions are just the opposite to the Northern hemisphere.

(8) Between 22<sup>nd</sup> March to 23<sup>rd</sup> September 'midnight sun' is observable in Norway and during this period it will be summer in Norway.

(9) Midnight sun will be visible at 'Bharti' research station of India at Antarctica between 23<sup>rd</sup> September to 21<sup>st</sup> March and it will be summer at that time.

### Think about it !

(1) Towards the north.

(2) The changes in the atmosphere, vapour, in the air, the wind and the precipitation influences the seasons. Due to the local conditions seasons other than summer and winter are seen to occur in different parts so we have four seasons. Summer, rainy, the period of retreating monsoon and winter which affects human life, mainly agriculture. Some times excess rainfall affects the crops and human life. Scanty rainfall may bring drought, famine, etc.

### Topic 9 : Agriculture

**Q.1. (A)**

(1) Commercial	(2) honey, wax
(3) pollination	(4) cocoon
(5) Greenhouse	(6) Intensive, shifting
(7) maximum	
(8) Extensive grain farming, plantation agriculture	
(9) cowdung, compost	(10) vermicompost

**Q.2. (1)** (a) Intensive

(2) (b) Use of animals, implements, machines and manpower.

(3) (d) In India factors like climate, soils, water, etc., are conducive.

(4) (c) Population is growing and there are agro-based industries.

**Q.3. (1)** Water is one of the basic necessities of farming. We have seen that crops do not grow on land that is dry and gets no rainfall. Irrigation is supplying water from rivers or from stored water bodies such as tanks, nullas and canals to the fields where seeds can be sown and where these sown seeds can grow into crops. Without irrigation, crops will not grow. We cannot depend on the rain, since rain is a natural phenomenon. Water is a must for agriculture.

**(2)** Irrigation where water is brought from rivers and taken with the help of pipes, and irrigation where sprinklers are put in fields. This water is also from rivers and lakes, but here, the water does not get wasted because the sprinklers spray the water around. Both these types of irrigation are used a great deal today, since we are facing bad monsoon and water shortage.

**(3)** The major types of farming are Subsistence farming that comprises of intensive farming and shifting cultivation and commercial farming that is made up of extensive grain farming, plantation farming, market gardening and horticulture.

**Intensive Farming** - Gives maximum production from a minimum area. It is seen in developing regions. The farm production is low and the economic condition of the cultivator is also poor. Here mostly animal energy is used. Cereals and vegetables are grown.

**Extensive Grain Farming** - The size of the farm is more than 200 hectares. Farming is carried on with the help of machines and pesticides are sprayed with the help of helicopters. Monocrops such as wheat or corn or barley are grown. Heavy capital investment is needed to buy machinery, fertilisers, pesticides, etc. This type of farming faces problems of droughts, pest attacks and market fluctuations.

**(4)** The characteristics of plantation farming are :

- (a) The farm size is 40 hectares or above.
- (b) Local manpower is used since this type of plantation is on hilly tracts.
- (c) It is a single-crop cultivation practice.
- (d) It produces crops like tea, rubber, coffee, coconut, spices, etc.
- (e) Needs large scale capital investment due to the long duration of crops, use of scientific methods, exportable production, etc.
- (f) This type of production faces issues of climate, manpower, deterioration of environment, etc.
- (g) Practised in India, South and Central America, South Asian countries, Africa, etc.

**(5)** In our areas, that is, Konkan area, we have rice crop grown. These places get good amount of rainfall during the monsoon season and rice needs a good amount of water. The summers are hot, hence the earth absorbs as much rain as possible during the monsoon season and stores the water that is used by the sown seeds. After the rice is harvested, watermelons are grown.

**(6)** In India, agriculture is seasonal because food crops need water and in India, it does not rain throughout the year, but for three to four months after the summer season. Since, water is absolutely necessary to grow crops, in India, agriculture is seasonal.

**The difficulties for perennial agriculture are -**

- (a) It is very difficult and sometimes impossible to get water throughout the year to have perennial agriculture.
- (b) The ground loses its fertility and chemical fertilizers have to be used on the ground and also sprayed on the crops. This is very dangerous not only to the crops but also for people who are going to eat these crops as food items.

**(7)** **Greenhouse farming** : Greenhouse farming facilitates getting maximum product from the land. It can have a total control on natural factors like climate, heat, atmospheric moisture as well as soil moisture. It assists in getting maximum economic benefits. Greenhouse farming is a highly specialized type of farming of the modern era. For erecting a greenhouse, galvanized iron pipes and plastic sheets are used. Its main aim is to control the pest attack by controlling water, light and temperature. Green houses are used on larger scales for growing flowers like lily and gerbera to give maximum economic returns.

**(8)** When farming is done using all vegetal matter mixed in the soil it is called organic farming. The crop obtained from organic farming is high in quality. The nutrient that the soil provides for crops is sometimes not sufficient. Therefore, replenishment of used up nutrients is necessary. Nutrients are also used abundantly to increase

the yield of the crop. Hence, organic fertilizers are prepared by — decomposing litter in the ground, burying grasses like sesbania or jute in the soil for making manures, etc. Chemical fertilizers and pesticides are not used in such a type of farming.

**(9)** (a) Shifting cultivation is practised in tropics in densely forested areas of hilly tracts. (b) The land is cleared by cutting down trees and plants and removing grass and shrubs. (c) The cut trees etc., are dried out and burnt. The ash gets mixed with the soil and acts as manure. (d) Sowing and harvesting is done before the rainy season. (e) After the land loses its productivity after a couple of years, a different piece of land is chosen for cultivation.

**(10)** Marketing systems are necessary for making the goods produced by the farmers available to the consumer at a fair price and on time.

**(11)** (a) Agriculture in India is scattered over vast areas.  
(b) All farmers are not organised.  
(c) Some farmers are economically weak and cannot market their production on their own.  
(d) Farm products are perishable.

The system of Agricultural Produce Market Committees is established to help farmers at the taluka level.

### **Intext Question**

#### **\* Use your brain Power!**

**(1)** There is huge expenditure for the purchase of machinery, fertilizers, pesticides, godowns, transport cost, etc. Hence, extensive commercial farming needs more capital.

**(2)** This type of cultivation uses scientific methods, exportable production and processing. This cannot be done by villagers, hence experienced and skilled people are required to do the job well.

**(3)** Ground water is distributed across land by raising the water table through a system of pumping stations, canals, gates and ditches.

### **Give It A Try**

**(1)** Improper practices arising out of man's greed observed in agriculture are :

- Using chemical spray over plants and crops.
- Using chemicals to ripen the fruits to put them in the market for sale.
- Artificial chemicals and pesticides are employed profusely.

**(2)** Sprinklers, water pipes that carry water from rivers and lakes are means of irrigation available in our area .

**(3)** Yes, there is a lot of wastage. Flowing water pipes are put on the ground and the labourer just goes away to finish other jobs. In the meantime, water just gushes out of the pipe and makes the place wet, muddy and useless.

**(4)** Artificial pesticides and chemicals should be banned as food on which such chemicals are used does not last long and can be poisonous.

The government has to look into this and send their representatives to fields to check what type of fertilizers are being used. Cow dung, compost manure and vermicompost must be used.

## Unit - IV

### Topic 4.1 : Under the Greenwood Tree

#### Answer the following

Q.1. (1) unto (2) hither (3) doth

Q.2. (1) The poet invites the happy-go-lucky people, those who shun ambition, those who are pleased with life and are happy with whatever they have.

(2) That person should sing his song with a merry note and turn it towards the sweet bird's throat.

(3) The poem conveys the message that we must learn to be carefree and happy and be pleased with whatever God has given us.

Q.3. (1) And turn his merry note  
Unto the sweet bird's throat  
(2) Who loves to lie with me  
(3) Who doth ambition shun  
(4) Here shall he see  
No enemy  
But winter and rough weather  
(5) Seeking the food he eats  
And pleased with what he gets

Q.4. (1) Early 17th Century (2) 'As You Like It'  
(3) Amiens a courtier sings this song

#### Comprehension

Q.1. (1)-(c), (2)-(a), (3)-(d), (4)-(b).

Q.2. (1) Under the greenwood tree.  
(2) The words are come hither, come hither, come hither.

(3) You will not see any enemy under the greenwood tree.

(4) You will find utter peace and happiness under the greenwood tree, where there will be no enemies except the cold and bitter winter and harsh weather.

Q.3. (1) The rhyme scheme is aabbcaac.

(2) The words are shun - sun; eats - gets; hither - weather; see - enemy.

(3) (a) Repetition (b) Inversion (c) Personification

Q.4. The poet is happy lying under the greenwood tree, where there are no enemies except winter and rough weather.

The poet invites all those who are happy with whatever God has bestowed upon them. He invites all those who shun ambition and are not greedy and materialistic. Those who love to live in the sun and eat whatever is available are also invited. According to the poet, life under the greenwood tree is a pleasant and happy life.

#### Grammar / Language study

Q.1. free, tree, sleep, keep song, along, eat  
sweet play gay chop stop lead greed

### Topic 4.2 : Unke Munke Timpetoo

#### Answer the following

Q.1. (1) a table-tennis set (2) to chant around the banyan tree  
(3) eleven (4) Mrs. Groover  
(5) kind and understanding

Q.2. (1) "Why seventeen times, and why at midnight?"  
"Why not try it? It would not do any harm."  
I thought it was all nonsense.

(2) Their actions show that though they have plenty of doubts regarding the chanting around the banyan tree, Rohan was so desperate to get the table tennis set that he was willing to do what his friend Muk had suggested.

(3) My family members and I do not believe in these talks about charms and chants, but if I was really desperate, may be, I would try it.

(4) Yes, the author is brave. Inspite of knowing how strict Mrs. Groover, his ex-principal was, he went into her garden at midnight just because he desperately wanted the table-tennis set.

(5) Muk climbed up the tree because he was frightened of the dog that was unleashed by Mrs. Groover.

(6) Mrs. Groover may have looked very strict and stern but she had feelings. She was ready to listen to what Rohan had to tell her. She was really kind and understanding and was ready to help where her help was needed. Mrs. Groover was a kind and understanding person.

(7) Yes, he did rejoice over his shoes and pullover. He was happy with the gifts given to him by his parents.

(8) The table tennis set was not new. It had been used, but it was in very good condition. It was not just any set but must have been a branded item and the person who had used it must have taken care to look after the set.

(9) Of course not. I do not believe in these mysterious charms and chants. It was Mrs. Groover who had sent the table-tennis set to Rohan.

(10) In my opinion, Mrs. Groover must have sent the gift.

(11) I personally feel, its an act of friendliness.

**Q.3.** We know Muk was frightened because as soon he heard the dogs bark, and Mrs. Groover threatening to release the dog. He got scared and started climbing the tree.

**Q.4. (1) Very funny :** Rohan and Muk went over to Principal Mrs. Groover's home on a regular basis to keep her company. One evening, they saw a piece of paper on the floor. They picked it up and Rohan was about to place it on the table when he saw that the piece of paper was a receipt for a table tennis set. Rohan realised that it was Mrs. Groover who had gifted him the set and all along she was pretending that she too believed in the chant 'Unke, Munke, Timpetoo'.

**(2) Full of horror and mystery :** It was believed by villagers that some goblins and imps came to play round the tree. These were killed by the people living there years ago. The spirits of these goblins and imps would satisfy the wishes of those they liked and punish those they did not like. People were scared to even look in the direction of the banyan tree.

### Comprehension

#### Extract - 1

**Q.1. (1)** The thought kept **haunting** me till the day before my **birthday**.

(2) I thought it was all **nonsense**.

(3) Its **aerial** roots were swaying in the **gentle breeze of the night**.

**Q.2. (1)** (1)-(c), (2)-(d), (3)-(a), (4)-(b).

(2) **(a)** remember **(b)** cruel **(c)** noisy **(d)** asleep

**Q.3. (1)** Mrs. Groover had been the principal in Rohan's school till the previous year.

(2) One look from Mrs. Groover's piercing pale green eyes was sufficient to silence bullies like Rinkoo.

(3) Rohan and Muk met at the back of old Mrs. Groover's garden at ten minutes to twelve.

(4) The banyan tree was in the garden, its aerial roots were swaying in the gentle breeze of the night.

**Q.4.** (1) nonsense - Abstract noun  
 (2) piercing, pale, green - Adjectives; Noun that is qualified - eyes.  
 (3) Mrs. Groover - Proper noun; garden - Common noun  
 (4) down, around, carefully

**Q.5.** There was a banyan tree in Mrs. Groover's garden, but Rohan dared not go there, especially at midnight. Rohan always felt that Mrs. Groover was very strict since she had been the principal of his school till the previous year. All were scared of her. One look from her piercing, pale, green eyes was enough to silence bullies like Rinkoo Lal.

#### Extract - 2

**Q.1.** (1) We all believed in Unke, Munke, Timpetoo!  
 (2) She replied softly but seriously.  
 (3) I felt my heart sink, and my courage vanish.  
 (4) It was not a brand new table tennis set, but it was a fabulous one.

**Q.2.** (1) True.  
 (2) False - We all believed in Unke, Munke, Timpetoo.  
 (3) False - I had gone over my lines a hundred times.  
 (4) True.

**Q.3.** (1) (1)-(b), (2)-(d), (3)-(a), (4)-(c).  
 (2) (a) because, believe, smiled, surprise  
 (b) continued, human, hundred, tennis

**Q.4.** (1) (a) disliked (b) discontinued  
 (c) old, used (d) irresponsible

(2) (a) softly, seriously - Adverbs of manner.

(b) felt, sink, vanish.

**Q.5.** Rohan gathered courage and went to meet Mrs. Groover. When he rang the bell, Mrs. Groover opened the door and looked at him with her pale, green eyes. Rohan's heart sank and his courage vanished. He started stammering. Mrs. Groover looked at Rohan with a strange look in her eyes and replied to his question that she did believe in Unke, Munke, Timpetoo because she had just wished for company, and there he was at her door. Mrs. Groover smiled and from that day onwards Rohan and Muk visited Mrs. Groover regularly.

#### Grammar / Language study

**Q.1.** (1) harmful / harmless (2) continuous (3) believable  
 (4) fearful / fearless (5) thoughtful / thoughtless  
 (6) wishful (7) questionable (8) courageous

**Q.2.** (1) mid + night – midnight  
 dis + believe – disbelieve  
 un + leash – unleash  
 in + different – indifferent  
 (2) (a) ship - friendship, fellowship, worship, companionship, statesmanship  
 (b) less - friendless, fearless, careless, powerless, breathless  
 (c) ness - stillness, godliness, calmness, goodness, cleanliness  
 (d) ly - ghostly, quickly, neatly, suddenly, impatiently, frequently  
 (e) ful - careful, tearful, powerful, frightful, delightful

(f) able - disable, wearable, unable, understandable, comfortable

**Q.3.** nonsense, besides, midnight, unleash, unpack, impatient

**Q.4.** (1) (a) disbelief (b) closed (c) false (d) decreased

**Q.5.** (1) six - Adjective of number.

(2) hard green - Descriptive adjective

(3) bit - Adjective of quantity

(4) Great - Adjective of quantity

### Topic 4.3 : The Red-Headed League

#### Part - I : Mr. Wilson's Story

##### Answer the following

**Q.1.** (a) **Mr. Wilson** was a pawn-broker. He was a red-headed man. Mr. Wilson was a diligent worker.

(b) **Vincent Spaulding** - Vincent was Mr. Wilson's assistant. He was smart and efficient and worked for only half the normal wages. Photography was his hobby. Vincent urged Mr. Wilson to apply for the job offered by the Red - Headed League.

Physically, Vincent was small and stout, with no hair on his face and with a splash of acid on his forehead.

(c) **Mr. Duncan** - He was a red-haired man in the office of the Red-Haired League. He interviewed Mr. Wilson and gave him the job. He was there in the office to see that Mr. Wilson did his job properly.

**Q.2.** Mr. Wilson and Spaulding went to Fleet Street where the Red-Headed League office was. The street was full of red-headed people, but Spaulding pushed through the crowd and took Wilson to the office. Mr. Duncan Ross, a representative of the League, announced that he was pleased to see Wilson and

immediately told him that he was well-suited for the job. He shook hands with Mr. Wilson, congratulated him and told all the other candidates to go away. Mr. Wilson got the job without an interview.

**Q.3.** (1) Personally, I think Mr. Wilson's assistant is smarter.

The assistant Spaulding showed Mr. Wilson the advertisement, advised and urged him to apply for the job and even went with him to the address given in the advertisement. There was a crowd of red-headed people waiting, but Spaulding pushed through the crowd and took Mr. Wilson to the office. He assured Mr. Wilson that he would look after his business in his absence.

All this shows that the assistant knew how to play his cards well.

(2) Fleet Street was full of red-headed people because they had seen the advertisement and had come to apply for the job.

(3) Mr. Wilson was well suited for the job.

(4) Mr. Wilson accepted the job because he would have to work only from ten to two and he would be paid four pounds a week. The most important thing was that Mr. Spaulding assured Mr. Wilson that he would look after his business in his absence.

(5) I would like to do such a job, because the timing is ten to two, hence I could use the rest of the day for other jobs or for studying. The salary for such few hours too is very good. Four pounds a week is great for just copying out the Encyclopedia.

(6) People in the publication business would want to copy an encyclopedia. After adding a few more words and changing the language, they can print a new

encyclopedia under the name of a different publication house.

(7) Today, xerox copying is used to get copies. The entire book can be done automatically instead of being done page by page. The pages are automatically turned in the machine itself and then copied.

(8) A dictionary gives us the meanings of words and the different parts of speech. An encyclopedia is a book or set of books giving information on many aspects of one subject. It gives comprehensive knowledge or all-round education.

(9) I would advise Mr. Wilson to go to the police and tell them about the Red-Headed League and how people were using this League to cheat people.

(10) Mr. Wilson would have lost his job.

(11) Spaulding pushed through the crowd and took Mr. Wilson to the office.

(12) Mr. Ezekiah Hopkins had founded the Red-Headed League to help all red-heads like himself.

(13) There was nothing in the office, but a couple of chairs and a table.

### Comprehension

**Q.1.** (1) False - Mr. Wilson continued to work for eight weeks.  
 (2) True  
 (3) False - Mr. Duncan Ross told Mr. Wilson to start with the letter 'A'.  
 (4) False - Holmes found Mr. Wilson's story very unusual.

**Q.2.** (1) It had been dissolved on October 9, 1880.  
 (2) Mr. Wilson got his salary on Saturday every week.

(3) Mr. Duncan Ross checked to see if Mr. Wilson did his job properly.  
 (4) Mr. Wilson worked diligently for four hours every day.

**Q.3.** (1) Mr. Ross bade, Mr. Wilson good-day at two o'clock.  
 (2) Mr. Wilson began work the very next day.  
 (3) The room had been rented under a false name.  
 (4) Holmes found Wilson's story very unusual.

**Q.4.** (1) good, light (2) whole (3) false (4) unusual

**Q.5.** Mr. Wilson made inquiries at the nearby offices, but no one knew anything about the League. The rooms had been rented under a false name. Mr. Wilson went and asked his assistant Spaulding for advice, but he could not help in any way. Finally Mr. Wilson went to Mr. Sherlock Holmes to solve this mystery. He wanted to find out who the people were who had played that prank on him.

### Grammar / Language study

No.	Noun	Verb
(1)	<b>explanation</b>	explain
(2)	<b>loss</b>	lose
(3)	competition	<b>compete</b>
(4)	advertisement	<b>advertise</b>

**Q.2.** (1) May I play games on your phone, please.  
 (2) Can she read Marathi?  
 (3) Today, we shall visit the museum.  
 (4) Mother must have left the geyser on.  
 (5) There ought to be a better way to fix the toy.  
 (6) Mr. Wilson would have to be in the office from ten to two.

## Part - II : What Happened Next - Dr. Watson's Account

### Answer the following

**Q.1.** (3) Ross closes the office of the 'Red-headed League'.  
(5) Clay and Ross enter the cellar to steal the gold.  
(1) Holmes and others go to the bank.  
(7) Holmes visits the area around Mr Wilson's shop.  
(6) The bank received a lot of gold from the Bank of France.  
(4) Holmes catches the criminal Clay.  
(2) Clay digs a tunnel.

**Q.2.** The Red-Headed League was a brilliant idea by Clay - Wilson's assistant and his friend Ross. These two wanted to dig out a passage or a tunnel from Wilson's place to the bank where gold was stored. Wilson's place was the only place that could give them entry and escape. Since Wilson was a red-headed man, they put an advertisement about the Red-Headed League offering jobs for red-headed people. Wilson was given the job. The criminals wanted him to be out of his place, so that they could dig a tunnel and they would have succeeded, if it was not for Holmes.

**Q.3.** (1) This man was Mr. Wilson's assistant, Spaulding.  
(2) Holmes wanted to see which important building or institution was near Wilson's shop or may be behind the shop.  
(3) Merryweather took the others to the bank cellar, where the gold was kept.  
(4) Mr. Merryweather was aware that the bank had borrowed a huge quantity of gold from the Bank of France and that the boxes filled with gold were in the cellar. Criminals would surely try to get this gold.

(5) He thought that way because now that Mr. Wilson was jobless, he would be back at the shop. They had planned it in that way. The robbery would have to take place that night or not at all.  
(6) The criminals had dug a hole and a tunnel from Mr. Wilson's shop to the bank. This hole opened up in the cellar. It was a square hole covered with a broad stone.  
(7) The two criminals were Wilson's assistant Spaulding, also known as criminal Clay and Mr. Duncan Ross, the red-haired man.  
(8) Mr. Duncan Ross tried to get away. No, he was not able to escape, because there were three men waiting for him at the other end.  
(9) The object of the strange advertisement and the peculiar job was to get Mr. Wilson away from the shop for some hours everyday. Mr. Wilson had red hair. The Red-Headed League employed Mr. Wilson, so he stayed away from his place. This was the clear idea of Clay and his red-headed friend. They wanted to dig an underground tunnel in order to enter the bank's cellar from Wilson's house and then escape via the same route.  
(10) When Holmes heard that the assistant worked for half the wages, he became suspicious and when he was told that the assistant had formed a habit of going down to the cellar every now and then, Holmes felt sure there was something fishy.  
(11) Using Wilson's description of his assistant, Holmes made enquiries and found out that the assistant was the criminal named Clay.  
(12) Holmes rang the bell of Wilson's shop. Clay answered the bell, the knees of his trousers were wrinkled and stained. This confirmed Holmes' suspicion that the assistant had been digging.

**Q.4.** A family near our place had gone out to a resort for fun. They were returning home late at night when they heard some thieves talking among themselves from inside the locked doors. They wondered how these thieves could have got in when all the doors were locked. The father told the family to be absolutely quiet by putting his finger on his lips. All stayed quiet. The father unlocked the door and rushed in to confront the thieves. There was no one there. The sounds and talking were still going in. They rushed to the bedroom and saw that the T.V. was on and a detective serial was playing on a channel. The family members heaved a sigh of relief that things had not turned out bad for them.

## Comprehension

## Extract - 1

Q.1. (1) The offices and banks were closed for the weekend.

(2) The assistant answered the question, and quickly closed the door.

(3) This matter of Wilson's was serious.

(4) Holmes thumped upon the pavement two or three times.

**Q.2. (1)** True  
**(2)** False - Watson was called to Baker Street at 10.00.

- (3) True
- (4) False - The assistant quickly closed the door

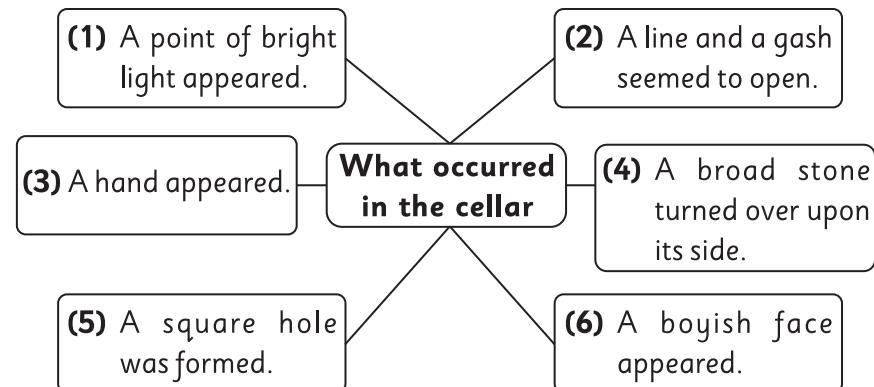
**Q.4.** (1) assistance, assistant (2) opening  
(3) observation (4) invitation

**Q.5.** Holmes went to the square where Mr. Wilson had his shop. There were many shops and offices in the square and a bank

just behind the shop. Mr. Holmes thumped upon the pavement in order to check if he could get some hollow sound from the ground. Holmes knocked on Wilson's door to see the assistant. When he saw the knees of his trousers dirty, Holmes became sure about the plan made by the assistant.

## Extract - 2

**Q.1.**



**Q.2.** (1)-(c), (2)-(a), (3)-(d), (4)-(b).

**Q.4.** (1) Square (2) Red  
(3) One, escape (4) Bright

**Q.5.** It was pitch dark in the cellar. Suddenly a bright light appeared on the cellar floor. This light changed from a dot to a line, and a gash on the floor opened up and a hand appeared. The two of them saw a broad stone turning over on its side. Then they saw a square hole. Suddenly, they saw a boyish face coming from the hole. The person came out of the hole. Behind this person was a man with red hair.

## Grammar / Language study

### Q.1. Adverb      Adjective

frankly	-	frank	silently	-	silent
carefully	-	careful	finally	-	final
quickly	-	quick	suddenly	-	sudden
really	-	real			

Q.2. (1) You reasoned it out beautifully, didn't you?

(2) It confirmed my suspicion, didn't it?

(3) They entered the cellar, didn't they?

Q.3. (a) (1) directly      (2) attentively      (3) ask

(4) way      (5) basement

(b) (1) noisily      (2) narrow      (3) depart

(4) ungrateful      (5) shrunken

(c) (1) The zoo had two bears.

I cannot bear the pain.

(2) They rose their hands as the king passed.

Rose is a beautiful flower.

(3) There are many palm trees on the lane.

I was hit on the palm of my hand.

## Topic 4.4 : Home Sweet Home

### Answer the following

Q.1. (1) The poet says that there is no place like home. Although our the home may be a very humble place, we feel blessed over there. Our home is something holy and sacred. The peace that we find at home is impossible to find anywhere else.

(2) The poet does not want to ever leave his home. Splendour does not dazzle him. He is happy with his small thatched cottage because it is his home. He loves to hear the birds singing. They give him peace of mind and happiness. This he will not get anywhere else, except in his home.

(3) At home he thinks of his beloved mother, whose caress would soothe him and beguile him. Whenever the poet comes face to face with problems in life, he never fails to think of his mother.

(4) The poet misses his home and family members, sitting beneath his fond father's smile and the loving caress of his mother.

(5) The poet hopes for the pleasures of home. He hopes to return there when he is overburdened with care and when he needs solace.

(6) People in the army, navy, airforce cannot stay at home, they are forced to stay away from home. Perhaps the poet too is forced to stay away since he belongs to one of these professions.

Q.2. Firstly, I would miss my loving father and my caring mother. I would miss the fights with my siblings and of course my loving pet dog, Bubbles. I would miss the four walls of my house and the lovely and kind neighbours.

Q.3. The poet says that there is no place on earth like his home. He says that he may have seen splendours and moved through rich and charming places, but his small thatched cottage that is blessed and made holy, is something that he cannot get anywhere else on earth. His home is very dear to him, with the birds flying around and singing gayly. It is only at his home, that he will get peace of mind and solace.

## Comprehension

**Q.1.** (a) When he looks at the moon, the poet feels that his mother is thinking about him.  
(b) The fragrance of the woodbine will cheer the poet.  
(c) According to the poet, it is very sweet to sit beneath his fond father's smile and his mother's caress that soothes and beguiles him.  
(d) The poet will return home when he feels overburdened and when he is in need of solace and peace.

**Q.2.** The poet loves his home and he refers to his loving home with the words 'home sweet home'. He gazes at the moon and feels that his mother is looking at the moon from their cottage and thinking about him. The poet loves to sit near his loving father and his beloved mother who would caress him to soothe and take care of him. Unfortunately, the poet is not at home but far away from home. He has sweet memories and says that if there are problems and if he is overburdened with care, he will return home, where he will get peace because there is no place like home.

**Q.3.** (1) Personification and Alliteration  
(2) Alliteration  
(3) smile - beguile; roam - home; care - there; wild - child; door - more

## Grammar / Language study

## Topic 4.5 : Seeing Eyes Helping Hands

## English Workshop :

**Q.1. (1)**

20, Rose Villa,

Bucilla,

Mumbai - 11.

26th August, 2017.

My dear Rachel

I have heard of your kindness and generosity to everyone staying around your grandmother's place. I have also heard that you have joined the community welfare group. You are doing a great thing.

How are things going on at grandmother's home? How is her health? I am missing you a lot. So, I have engaged myself and have joined the swim club. I go there to learn swimming everyday in the morning. It is a complete one month vacation package. Sometimes after swimming I play badminton in the lawn besides the pool.

Hope you can come back few days before this month end. So, I can take you to the swim club and introduce you to friends I have made there.

Will be awaiting your reply letter. Give my regards to  
Grandmother.

Hope to see you soon!

Your loving friend

| Sarah.

(2)

20, Rose Villa,

Byculla,

Mumbai - 11.

26th August, 2017.

To,

The Caretaker

St. Xavier's Ground,

Parel.

Respected Sir,

We tried our level best to get a ground for our sports festival but whichever ground and stadiums we visited were already booked by schools and colleges, we were in a real fix.

But, we are very grateful to you for getting the ground ready for us. We learnt that you went out of your way to get the construction company to do the repairs even after closing hours only because you wanted the ground ready for our sports festival.

Sir, it was because of your generosity that we could conduct our sports festival.

Thank you,

Yours Sincerely,

Minoshha Rodrigues

**Q.2.** In the office of the Principal.

**Principal :** Yes sir, I heard that you wished to see me.

**Parent :** Sir, I am so thankful to you. I cannot thank you enough for saving my daughter at the cost of your shoulder and leg.

**Principal :** Oh! You are Ninny's father. You were out of India when that accident occurred.

**Parent :** Yes Sir, Can you tell me exactly what happened?

**Principal :** I was returning to school from a meeting and I saw Ninny crossing the road. She was just two feet away from me. Suddenly a bike came rushing through the traffic. It was about to hit her. I was stunned, but I rushed forward and dragged her to safety.

**Parent :** Yes, sir and you got hit by a dumper. You broke your shoulder bone and hurt your knee. I can see for myself how badly you must have been hurt.

**Principal :** Look here my dear parent. I just did what I had to do. Hope the little girl is well.

**Parent :** Thank you sir, yes she is good now. Thank you once again.

#### **Topic 4.6 : Papa Panov's Special Christmas**

##### **Answer the following**

- Q.1. (1)** The best shoes that Papa Panov had made were a pair of child's shoes.
- (2)** Papa Panov gave coffee to the sweeper, a pair of baby shoes to the young mother and hot soup to the beggars.
- (3)** By afternoon, Papa Panov had not stopped looking out for Jesus.
- (4)** Papa Panov saw the sweeper, the young mother and the beggars he had helped once again when he woke from his sleep.

**(5)** Jesus had actually visited Papa Panov thrice on Christmas Day.

**Q.2.** Old Papa Panov missed his dead wife and his children who had gone away, especially during Christmas. He wished baby Jesus come to him, so he could make him warm and give him a special pair of shoes he had made specially for him. He was a kind and generous man. On Christmas Day, he saw a miserable, dirty sweeper and invited him in for coffee. Some time later he saw a girl with a child in her arms. The girl was too poor to afford a shawl and shoes for the baby. Papa invited her in, gave the baby some milk and the girl the pair of shoes that he had kept for Jesus.

Some time later, Papa saw some beggars. Again he felt sorry for them and gave them hot soup and a generous hunk of bread.

Papa Panov was waiting for Jesus and He did come to him in the forms of the sweeper, the girl with the child and the beggars.

**Q.3.** This is a story with a religious background. It is the festival of Christmas - the birth of Christ. We must all be kind, loving, helpful and generous if we wish to be rewarded. Here, Papa Panov proved that he was a very loving and generous man. Christ told him in his dream that He would visit him, and He did so. When Papa saw the miserable and dirty sweeper, he invited him home and gave him coffee to drink. Next, Papa invited a poor girl carrying a baby who was suffering from the cold weather, gave the child some milk and the mother the pair of shoes he had kept for baby Jesus.

Then when Papa saw beggars on the road, he felt sorry for them and gave them hot soup and a generous hunk of bread.

Jesus told Papa that when He was hungry, he fed him, when He

was naked, he clothed him and when He was cold he warmed him.

**Q.4.** I think the monsoon season is the most difficult to face in our locality because the poor and homeless have no shelter. They get wet and then fall sick. We must have some sort of shelter for such people. Free medicines and other treatments must be provided to them.

**Q.5.** **(1)** Though it was still afternoon, lights had begun to appear in the shops and houses. Excited children scurried indoors and sounds of chatter and laughter could be heard. There were sounds of happiness and bright lights everywhere and also faint but delicious smells of Christmas cooking.

**(2)** No, his shop was not away from his house.

**(3)** Yes, Papa Panov lived alone for the simple reason that his wife had died and his children had grown up and had gone away.

**(4)** The 'laughter wrinkles' tell us that Papa Panov is no longer young. He has seen a lot of life and now he has become old. It also tells us that by nature Papa was a cheerful man who laughed a lot.

**(5)** Papa says that if Mary and Joseph did not find a room at the inn, he would have given them his bed, he would have covered the baby with his patchwork quilt and kept him warm. This shows what a kind person Papa Panov was.

**(6)** The small box is dusty because Papa Panov has kept a pair of boots in the box and has not opened the box for, maybe, years.

**(7)** Papa Panov looked at the shoe box in which was a perfect pair of tiny leather shoes. Papa felt that since that pair was the best pair of shoes he had made, he should give it to baby Jesus.

(8) Yes, they were related to his dream.

(9) Yes, Papa believed that he would be visited by Christ, but he was not sure how he looked. He wondered if Jesus would come to him as a child or as an adult.

(10) He expected Jesus to visit him as a grown up man, carpenter or a great king.

(11) Yes, there are people who have to work on festivals. Let's start with the mother of the family. Others are the police and armed forces, the shopkeepers, sweepers, taxi, train and bus drivers, pilots, etc.

(12) The sweeper looked as miserable and dirty as ever and he was working in the raw, cold and bitter freezing mist of the Christmas morning. Papa felt sorry for the sweeper and gave him hot coffee.

(13) The sweeper noticed Papa Panov's eyes straying towards the window. He must have been expecting an important visitor. The sweeper asked him about it. This is the reason, Papa Panov told him about his dream.

(14) The sweeper told Papa that he had given him a bit of Christmas cheer by giving him hot coffee. Such a kind and generous man deserves to have his dream come true. This good wish made the sweeper actually smile.

(15) This suggests that the girl must have been unsteady on her feet. She must have been hungry, tired and weak. To add to it, she was carrying a baby. She was very poor and very weak, hence she had to walk slowly and quietly, hugging the walls of the shops and houses.

(16) (a) Papa Panov saw the weak, shaky girl without warm clothing and the baby wrapped in thin shawl and knew that he had to invite her and the baby inside his house to let her warm herself and her child near the fireplace.

(b) The young lady must not have been able to believe her eyes and ears. She must have been very thankful to Papa Panov for inviting her in. To show her respect, she told him to lead the way.

(17) Papa Panov could not bear to see the baby with no shoes on. He looked at its cold feet and decided to give the shoes he had kept for Jesus to the poor, cold baby.

(18) When Papa Panov could not make out the passers-by in the dusk, he slowly walked back into the room, put up the shutters and sat down wearily in the armchair. He was feeling bad that it was just a dream and Jesus had not visited him as He had promised.

(19) A great peace and happiness seemed to fill the room overflowing Papa's heart until he wanted to burst out singing and laughing and dancing with joy.

**Q.6.** When Papa Panov looked out of the window, he saw only the sweeper. There was no one stirring on the road. The sweeper looked terrible. He was as miserable and dirty as ever. There was a raw, cold and bitter freezing mist around that morning. Immediately, Papa Panov felt that he had to help the sweeper. He opened the shop door and called him in to have some hot coffee. The sweeper could not believe his ears. However, he was only too glad to get some shelter from the cold and have some hot coffee. The sweeper got hot coffee as well as some Christmas cheer from Papa Panov.

### Comprehension

#### Extract - 1

**Q.1.** (1) Papa Panov was the village shoemaker.

(2) Papa Panov heated up his coffee on the charcoal stove.

(3) Mary's little baby was born in the cowshed.

(4) The wise men who came to see baby Jesus bought splendid gifts.

**Q.2.** (1) Excited children scurried indoors and now only muffled sounds of escaped.

(2) Papa Panov went back indoors with a firm step.

(3) That night papa Panov read how Marry and Jospeh, tered by their journey to Bethlehem.

(4) With a sigh Papa Panov settled in his big armchair.

**Q.3.** (1) (a) little (b) firm (c) excited (d) bright  
(2) (a) heated (b) laughable (c) excited (d) cheerful

**Q.4.** (1) wise, splendid - Adjectives; men, gifts - nouns

(2) He settled in his armchair, didn't he?

**Q.5.** Though it was still afternoon, lights had begun to appear in the shops and houses. Excited children scurried indoors and sounds of chatter and laughter could be heard. There were sounds of happiness and bright lights everywhere and also faint but delicious smells of Christmas cooking.

#### Extract - 2

**Q.1.** (1) The baby (2) For Jesus  
(3) Gurgled with pleasure (4) A thin shawl

**Q.2.** (1) felt very sorry (2) holding tight  
(3) guide or lead (4) very small

**Q.3.** (1)-(c), (2)-(d), (3)-(a), (4)-(b).

**Q.4.** (1) (a) beauty (b) perfection (c) coldness (d) warmth  
(b) (a) sadden (b) comfort (c) think

**Q.5.** When Papa Panov saw the girl, he was shocked to see her walking slowly and quietly, hugging the walls of the shops and houses. She was very tired and was carrying a small baby. The

baby was wrapped in a thin shawl. Papa Panov could see sadness on the faces of the mother and the child. He invited them in the house and gave the baby some warm milk with help of a spoon and warmed her tiny feet by the stove. Papa Panov decided that since the baby needed shoes, and the mother could not afford to buy shoes, he would give her the pair he had specially made for Jesus. This is how Papa Panov helped the girl and her baby.

#### Grammar / Language study

**Q.1.** (1) know (2) deer (3) hear (4) pare (5) sole  
(6) new (7) threw (8) vent (9) hole

**Q.2.** (1) Cabbage soup was put on by Papa for his supper.  
(2) He saw no one, did he?  
(3) (a) misery (b) dirt (c) bitterness (d) cheer

	<b>Noun</b>	<b>Verb</b>	<b>Adjective</b>
(1)	<b>nakedness</b>	×	naked
(2)	joy	<b>enjoy</b>	<b>joyous</b>
(3)	<b>whisper</b>	whisper	<b>whispering</b>
(4)	welcome	<b>welcome</b>	<b>welcoming</b>

# मराठी सुलभभारती

## १२. रोजनिशी

### स्वाध्याय

प्र.१. (अ) वैष्णवीच्या शाळेत बालदिनाच्या निमित्ताने सांस्कृतिक कार्यक्रम घेण्यात आले. विद्यार्थ्यांची वेशभूषा स्पर्धा घेण्यात आली. कार्यक्रमप्रसंगी आलेल्या पाहुण्यांनी बालदिनानिमित्त विद्यार्थ्यांना शुभेच्छा दिल्या. कार्यक्रमाच्या शेवटी सर्वांना खाऊ देण्यात आला.

(आ) शिवारामध्ये गेल्यावर मुलांनी ज्वारी, तुरी, भुईमूग आणि कपाशी ही पिके तर पेरू, सीताफळ, आवळा, चिंच, बोर ही फळज्ञाडे पाहिली.

प्र.२. (अ) वैष्णवीच्या रोजनिशीतील १६ नोव्हेंबर या दिवसाचे पान मला सर्वांत जास्त आवडले. या दिवशी मित्रमैत्रिणींबरोबर बर्थडे पार्टी करण्यापेक्षा वैष्णवीने तिचा वाढदिवस आदिवासी दुर्गम भागातील वसतिगृहातील मुलांबरोबर साजरा केला.

(आ) वसतिगृहातील आदिवासी दुर्गम भागातील मुलंमुली शिक्षणासाठी आईवडिलांपासून दूर राहतात हे पाहून वैष्णवीला गहिवरून आले.

प्र.३. १७ नोव्हेंबर -

आजपासून आमची दिवाळीची सुट्टी सुरु झाली. सुट्टी असूनही मी लवकर उठली. आज आईची जरा घाई होती. तिने जवळजवळसर्वच फराळाचे डबे बनवून तयार ठेवले होते. आई, बाबा आणि मी 'आपले घर' या अनाथाश्रमात गेलो. आम्ही तिथल्या मुलांना दिवाळीचा फराळ व कपडे दिले. ते पाहून मुलांना खूप आनंद झाला. मी थोडा वेळ त्यांच्याबरोबर खेळले, गप्पा मारल्या, त्यांनी काढलेली सुंदर सुंदर चित्रे पाहिली. त्यांनी तयार केलेल्या पणत्या, भेटकार्ड व कंदील आम्ही विकत घेतले. संध्याकाळी आम्ही घरी आलो. पण माझ्या मनात त्या अनाथाश्रमातील मुलांचेच सारखे विचार येत होते.

### उत्तरा क्र. १

प्र.१. (अ) (१) (i) बालदिन

(ii) क्रांतिज्योती सावित्रीबाई फुले

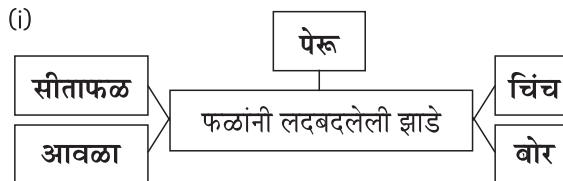
(२) (i) डॉ. रमेश कोठावळे

(ii) असत्य

(३) रोजनिशी म्हणजे रोजच्या घडामोडींची नोंद ठेवणे. रोजनिशी लिहावी कारण आपल्याला आपल्या कामांचा त्यांच्या आवश्यकतेप्रमाणे योग्य क्रम ठरवता येतो. लहान मोठ्या गोष्टींची नोंद ठेवल्याने कोणत्याही गोष्टीची गरज लागली तर त्याचा फायदा होतो. रोजनिशी लिहिल्याने स्वतःशी संवाद साधता येतो. दिवसभरात आपण ज्या गोष्टी करतो त्यातून अनेक गोष्टी शिकता येतात. स्वतःला समजून घेता येते. दिवसभरात आपल्याला भेटलेल्या व्यक्तींनाही समजून घेण्यास मदत होते. आपली आकलनशक्ती व स्मरणशक्ती वाढते. लिखाणामध्ये सुधारणा होऊन भाषेवर प्रभुत्व प्राप्त होते. आपण केलेल्या चुका सुधारण्याची संधी मिळते. रोजनिशी आपला चांगला मित्र/मैत्रीण होऊन आपण एकटे आहोत असे वाटत नाही. मनावरील ताण/चिंता कमी होतात. आपल्यातील सकारात्मकता वाढून अडचणींवर मात करण्याचे बळ मिळते. एखादी गोष्ट पूर्ण करण्यासाठी लागणाऱ्या कृती करण्याचा आपण विचार करू लागतो त्यामुळे आपला आत्मविश्वास वाढतो. असे रोजनिशी लिहिण्याचे अनेक फायदे आहेत. रोजनिशी लिहिणे ही एक चांगली सवय आहे.

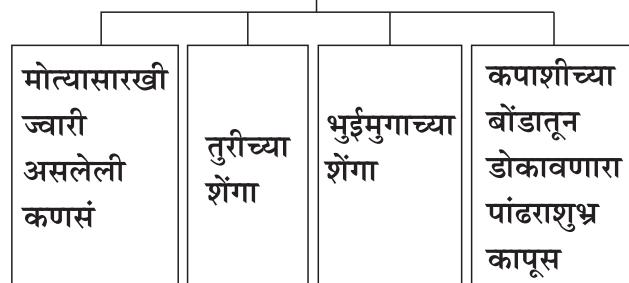
उतारा क्र. २

प्र.१. (अ) (१) (i)



(ii) श्री. पाटील सर

(२) (i) या गोष्टी बघून मुले आनंदी झाली



(ii) दगडांच्या मारानं भरपूर बोरं खाली पडली.

(३) मे महिन्याच्या सुट्टीत मी माझ्या कोकणातील गावी गेलो होतो. मे महिन्यात कोकणात खूप मजा असते कारण या हंगामात आंबे, फणस, काजू, करवंदे, जांभळे, रातांबे अशी खूप फळे असतात. एकदा संध्याकाळी मी, माझा भाऊ व गावातील बरीचशी मुले शेतात गेलो होतो. खाली घरे व उंचावर गेल्यावर गावातील बच्याच लोकांची शेते आहेत. आजूबाजूला दाट झाडी होती. शेतात पेरणी, नांगरणीची कामे चालू होती. अनेल लोक वर गुरांना चरण्यासाठी घेऊन आले होते. शेताच्या बाजूला असलेल्या झाडांमध्ये विविध अंब्यांची झाडे होती. हापूस, पायरी, रायवळ तसेच वावडिंग, निर्गुडी, कडुनिंब, रुईची छोटी झाडे होती. त्या बच्याच औषधी झाडांची माहिती भावाने

आम्हाला दिली. नागवेल दाखवली ज्यापासून विडा बनवतात. विविध रंगांची फुले बघून तर खूप प्रसन्न वाटत होते. झाडांवर अनेक पक्षी होते जे मुंबईत बघायला देखील मिळत नाहीत. आम्ही तेथे करवंदे, जांभळे खूप खाल्ली आणि काळोख पडण्यापूर्वी घरी यायला निघालो.

उतारा क्र. ३

प्र.१. (अ) (१) (i) खाऊ

(ii) १६ नोव्हेंबर

(२) (i) समाज कल्याण विभागाच्या वसतिगृहात असणारी मुले आदिवासी दुर्गम भागातील होती.

(ii) (अ) असत्य (ब) सत्य

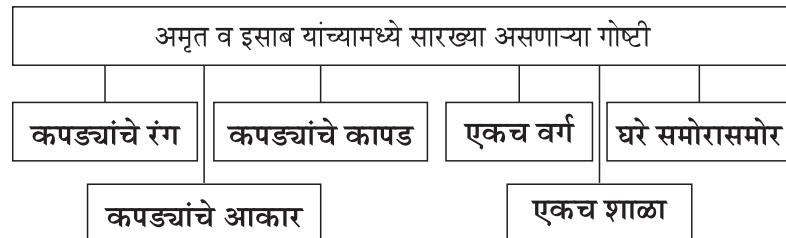
(३) वैष्णवीचा वाढदिवस १६ नोव्हेंबर या दिवशी होता. घरातील अनेक नातेवाईकांनी, मित्रमैत्रिणींनी सकाळपासूनच वैष्णवीला वाढदिवसाच्या शुभेच्छा दिल्या. वैष्णवी व वैष्णवीचे आईबाबा वैष्णवीचा वाढदिवस म्हणून आदिवासी समाज कल्याण विभागाच्या एका वसतिगृहात गेले. आदिवासी भागातील मुलेमुली शिक्षण घेण्यासाठी तेथे राहतात. त्या सर्व मुलांना वैष्णवीने खाऊ वाटला. आईबिलांपासून, आपल्या घरापासून लांब रहणाऱ्या मुलांना पाहून वैष्णवीला वाईट वाटले. वैष्णवीच्या आईबाबांनी तिला समजावले. त्या सर्व मुलांना भेटून वैष्णवीला शिकण्याची नवी उमेद मिळाली.

(अ) गर्वाचे घर खाली.	(आ) कामापुरता मामा.
(इ) पळसाला पाने तीनच	(ई) थेंबे थेंबे तळे साचे
(उ) आगीतून उटून फुफाट्यात पडणे	(ऊ) अति तेथे माती
(ए) नावडतीचे मीठ अळणी	

## १३. अदलाबदल

### स्वाध्याय

प्र.१.



प्र.२. (१) गावातील काही मुले निंबाच्या झाडाखाली जमली होती.

(२) एका ब्रात्य मुलाला एक खोडकर कल्पना सुचली.

(३) अमृत व इसाबने शर्टाची अदलाबदल केली.

(४) हसनभाई काय सांगत आहेत ते ऐकायला शेजारपाजारच्या बायकाही तेथे जमल्या.

(५) अमृत व इसाबच्या परस्परांवरील प्रेमाची गोष्ट ऐकून सर्वजण हेलावून गेले.

प्र.३. (अ) घरी आलेल्या पाहुण्यांना बाबांनी राहण्यासाठी गळ घातली.

(आ) बाळू नवीन छत्री कोठेतरी विसरून आला. हे पाहून आईचा प्रारुच चढला.

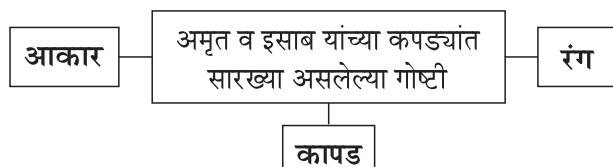
(इ) रस्त्यावर भांडणाऱ्या कुत्र्यांच्या आवाजाने नीताच्या पोटात गोळा आला.

(ई) त्याची करुण कहाणी ऐकून सर्वांची मने हेलावून गेली.

### कृतिपत्रिका - १

उतारा क्र. १

प्र.१. (१) (i)



(ii) (अ) होळी

(२) (i) गावातील मुले निंबाच्या झाडाखाली जमली.

(ii) (अ) सत्य (ब) असत्य

(३) तेजस हा माझा सर्वात आवडता मित्र आहे. तो माझ्याच वर्गात शिकतो. आम्ही एकाच सोसायटीत राहतो. त्यामुळे जवळजवळ दिवसभर आम्ही एकत्रच असतो. एकत्र विविध खेळ खेळतो. तेजस अभ्यासातही हुशार आहे. गणित हा त्याचा आवडता विषय. त्यात तो पैकीच्या पैकी गुण मिळवतो. कोडी सोडवण्याचीही त्याला आवड आहे. तो नेहमी सर्वाना मदत करतो. अभ्यासात कुणाला काही शंका असेल तर तो ती पटकन दूर करतो. शिक्षकांचाही तो आवडता विद्यार्थी आहे. त्याने कुठे काही वाचले, नवीन गोष्ट पाहिली की त्याविषयी तो मला माहिती सांगतो आणि मीही त्याला सांगतो. प्रत्येक गोष्ट करताना आम्ही एकमेकांना सांगून करतो. अशी आमची अतूट मैत्री आहे.

### अतिरिक्त कृती

प्र.१. अमृतला आईची भीती वाटत होती.

प्र.२. (अ) पाशी (ब) सोबत

### कृतिपत्रिका - २

उतारा क्र. २

प्र.१. (अ) (१) (i) (अ) केशवला (ब) अमृतला

(ii) सत्य

(२) (i) (अ) अमृतला जमिनीवर केशवने ढकलले.

(ब) शर्टासाठी इसाबच्या वडिलांनी सावकाराकडून पैसे कर्जाऊ घेतले होते.

(ii) केशवला

(३) सुट्टीच्या दिवशी मी मित्रांबरोबर क्रिकेट, फुटबॉल, बॅडमिंटन, लगोरी इत्यादी मैदानी खेळ खेळतो. तर दुपारच्या वेळी घरात बसून कॅरम, बुद्धिबळ इत्यादी बैठे खेळ खेळतो.

उत्तरांक. ३

प्र.१. (अ) (१) (i) 'महत्त्व कशाला आहे' हे हसनभाईना अमृतने शिकवले.

(ii) हसनभाईनी

(२) (i) (अ) अमृतची आई (ब) शेजारपाजारच्या बायका

(ii) हसनभाई

(३) माझ्या मित्राचे दुसऱ्याला मदत करणे, कोणती गोष्ट चांगली व कोणती गोष्ट वाईट हे सांगून वेळीच आपल्या मित्राला सावध करणे हे दोन गुण सर्वात जास्त आवडतात.

### खेळूया शब्दांशी

(अ) (१) नवा - शर्ट (२) सुई - दोरा

(३) होळी - सण (४) कुस्ती - खेळ

(आ) (अ) व्रात्य (आ) कल्पना (इ) गोष्ट

(इ)

शेतकरी  
कष्टकरी  
वारकरी  
कातकरी

	*		*
१	डो	३	
२	के	र	
	ज	५	
४	नी	र	
	य		
६	त	न	या

	*		
१	आ		
	ळ	३	
२	शी	त	ल
	हा		
४	न	वी	न
	का		
६	र	ड	णे

\* (१) माझ्या मित्राने / मैत्रिणीने आज डबा आणला नाही तर मी त्याला माझ्या डब्यातील पोळी भाजी देईन.

(२) शाळेत पिण्याच्या पाण्याचा नळ कोणीतरी विनाकारण सुरु ठेवला तर आम्ही तो बंद करू आणि वाहणारे पाणी वाचवू.

(३) वर्गातील एका विद्यार्थ्याने वर्गात कचरा केला आहे व तो आम्ही पाहिला तर त्या विद्यार्थ्याला कचरा न करण्याविषयी समजावू आणि त्याला कचरा एकत्र करून कचरापेटीत टाकायला सांगू. त्याने आमचे म्हणणे ऐकले नाही तर आम्ही स्वतः कचरा कचरापेटीत टाकू आणि वर्ग स्वच्छ ठेवू.

(४) सहलीत आमचा मित्र किल्ल्याच्या भिंतीवर नावे लिहित आहे तर आम्ही त्याला किल्ल्यांचे महत्त्व सांगून भिंतीवर नावे लिहिण्याची कृती करू नकोस असे समजावून सांगू.

## १४. संतवाणी

\* विद्यार्थ्यांनी स्वतः कृती करा.

### आम्ही कथा लिहितो.

एकदा जंगलात भटकता भटकता एक हरिण जंगलातून बाहेर आले. जंगलाच्या बाहेरून जाणारी एक प्रवासी रेल्वे त्याला दिसली. हे सापासारखे लांब काय बरं पळत आहे असा विचार करता करता हरिणही त्या प्रवासी रेल्वेबरोबर धावू लागले.

पुढे एका स्टेशनवर प्रवासी रेल्वे थांबली. हरिण मात्र पुढे धावतच राहिले. मागे वळून पाहते तर काय रेल्वे थांबलेली. हरणाला वाटले, ती प्रवासी रेल्वे दमली म्हणून थांबली व आपणच जिंकलो. ते हरिण विजयी झाल्याच्या थाटात जंगलात परतले. इतर सर्व प्राण्यांबरोबर ते फुशारक्या मारू लागले. घडलेला सर्व प्रसंग त्याने इतरांना सांगितला. 'आपण रेल्वेला हरवले. केवढे मोठे काम केले. आपणच सर्वात चपळ' अशा आविर्भावात ते फिरू लागले.

कोल्हा हुशार होता. त्याला शंका आली. तो हरणाला म्हणाला, "तू जिंकल्याचे कुणीही पाहिले नाही. चल पुन्हा धावून दाखव." ते दोघेजण पुन्हा जंगलाबाहेर आले. हरिण मोठ्या दिमाखातच येणाऱ्या एका रेल्वेबरोबर धावू लागले. कोल्हासुदधा त्या दोघांच्या मागे धावायला लागला.

हरणाच्या दुर्देवाने ती रेल्वेगाडी मालगाडी होती. त्यामुळे ती कुठेही न थांबता पुढे पुढे वेगाने निघून गेली. बिचारे हरिण मात्र तिच्यामागे धावून धावून दमले आणि मटकन खाली बसले. त्याच्यात पुढे धावण्याचे त्राणच उरले नव्हते. त्याने कोल्ह्याकडे आपण शर्यत हरल्याचे कबूल केले व म्हणाले, "खरोखरच तंत्रज्ञानाचा वापर करून मानवाने आपल्यापेक्षा वेगवान वस्तू बनवली आहे".

### शीर्षक - गर्वाचे घर खाली

(२) अनिकेत अभ्यासात सामान्य असा मुलगा होता. आईला तिच्या कामात तो नेहमी मदत करीत असल्यामुळे त्याला अभ्यास करावयास फारसा वेळ मिळत नसे. अखेर व्हायचे तेच झाले. अनिकेत आठवीत नापास झाला. त्याच्या आईला खूप मोठा धक्का बसला. तिने अनिकेतची समजूत काढली. परंतु अनिकेत मात्र अस्वस्थ होता. नापासाचा कलंक घेऊन जगण्यापेक्षा आत्महत्येचा मार्ग त्याला अधिक योग्य वाटत होता. आईला आणखी त्रास नको या भावनेनं तलावात उडी मारून स्वतःला संपवण्याचा त्याचा विचार पक्का झाला.

अनिकेत गावाबाहेर असलेल्या तळ्याकाठी आला. पोहता येत नसल्यामुळे पूर्ण भरलेल्या तलावाकडे बघून त्याला क्षणभर भीती वाटली. तेवढ्यात एक घटना घडली. तलावाच्या काठावर असणाऱ्या झाडांवर बरीच माकडे होती. त्या माकडांमधील एक माकडाचे लहान पिल्लू झाडावरून खाली पडले. पिल्लाने झाडाच्या खोडाजवळ जाऊन वर चढण्याचा प्रयत्न केला. पुन्हा ते खाली पडले. प्रत्येक वेळेस झाडावर जाण्याचा ते प्रयत्न करत होते. अनिकेत एकटक नजरेनं पिल्लाचा झाडावर जाण्याचा प्रयत्न पाहात होता. अनेक वेळा प्रयत्न केल्यावर अखेरीस ते माकडाचे पिल्लू झाडावर चढले व इतर माकडात पुन्हा खेळू लागले. अनिकेतला आनंद झाला. माकडाच्या पिल्लाप्रमाणे आपणही पुन्हा प्रयत्न करू. चांगल्या मार्कानी पास होऊ अशी नवी आशा त्याच्या मनात निर्माण झाली.

आत्महत्या करण्यासाठी तलावाकाठी आलेला अनिकेत घराकडे निघाला. अभ्यासाचा जोरदार प्रयत्न करून आपणही माकडाच्या पिल्लाप्रमाणे वरच्या वर्गात जाऊ असे त्याने ठरवले.

### शीर्षक - प्रयत्नांती परमेश्वर

# हिंदी सुलभभारती

## 5. बसंत गीत

प्र.1. (1)

	पद्यांश में उल्लेखित पंछी	बसंत के आगमन का परिणाम
(1)	कोयल	गीत गाती है।
(2)	मोर	नृत्य करता है।

(2) (i) (1) बन-बागों में हर तरफ क्या छाया है?

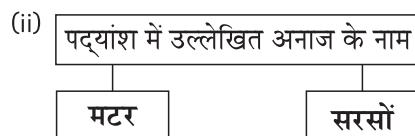
(2) कविता में किस ऋतु की बात हो रही है?

(ii) (1) मधुर (2) मकरंद

(3) फूलों की कलियाँ खिल गई हैं जिन्हें देखकर लगता है कि फूलों का मन अपनी मुस्कान बिखेर रहा है। भौंरों की गुनगुनाहट कानों को बड़ी मधुर लग रही है। इन भौंरों ने खिले हुए फूलों का मधुर रस चुराया है।

सज-धजकर बसंत ऋतु आई है, उसकी खुशी में हम बसंत गीत गाएँ। बन-बागों में हर तरफ यारी सी महक छाई है। मोर नृत्य कर रहा है, कोयल मीठे गीत गा रही है।

प्र.2. (अ) (1)



(2) (i) (1) आम पर बौर छाया है।

(2) खेतों में पीले रंग की सरसों खिली है।

(ii) (1) अमवा। (2) अरु।

(3) सज-धजकर बसंत ऋतु आई है। उसकी खुशी में बसंत गीत गाएँ। खेतों में पीले रंग की सरसों खिली है और आम पर बौर आया है। हरी-हरी धरती के बिछौने पर प्रकृति ने अनंत रंग बरसाए हैं। इस बसंत के गीत गाओ।

प्र.3. (1) चंद्रप्रकाश 'चंद्र'

(2) गीत।

(3) कलि-कलि करत कलोल कुसुम मन, मंद-मंद मुस्कायो।

गुन-गुन-गुन-गुन गूँजे मधुप गन मधु मकरंद चुरायो ॥

(4) कलिया खिल गई हैं। फूलों का मन अपनी मुस्कान बिखेर रहा है ऐसा लगता है। भौंरों ने गुन-गुन करते मधुर गुनगुनाहट शुरू की और वे फूलों का मधुर रस चुराने लगे। गुन-गुन-गुन-गुन, मंद-मंद जैसे लयात्मक और ध्वन्यात्मक शब्दों के कारण और इन पंक्तियों द्वारा कविने बसंत ऋतु में प्रकृति में होने वाले परिवर्तन को दर्शाया है इसलिए यह पंक्तियाँ मुझे पसंद हैं।

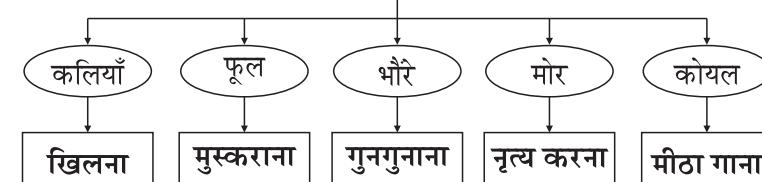
(5) बसंत ऋतु वृक्ष, फूल, पशु, पक्षी, मनुष्य सभी को मुग्ध कर देता है।

बसंत ऋतु में मेरा मन खुशी से झूम उठता है। बसंती हवा मन में नई सूर्ति और नई उमंग संचार करती है। बसंत ऋतु में ही होली का त्योहार आता है। हम धूमधाम से यह त्योहार मनाते हैं। इसी ऋतु में मीठे आम खाने मिलते हैं। बसंत ऋतु अपने साथ सुंदरता, उमंग, सुगंध लेकर आती है जिससे मेरा मन प्रसन्न होता है।

### स्वाध्याय

प्र.1.

बसंत के आगमन पर दिखने वाला परिवर्तन



प्र.2.

प्रकृति की गोद में बसे भारत देश में छह ऋतुएँ हैं और प्रत्येक ऋतु दो-दो महीने अपना जादु बिखेरते हुए देश की जलवायु में परिवर्तन लाती है। ग्रीष्म में देशवासियों को झुलसा देनेवाली गर्मी होती है तो वर्षा ऋतु की फुहार देश की धरती को हरी-भरी, मनमोहक बना देती है। शरद ऋतु आती है तो मौसम को खुशनुमा बना देती है। हेमंत ऋतु आती है तो उत्तर भारत में ठंड बढ़ने लगती है और पहाड़ियों पर बर्फ छा जाती है। शिशिर ऋतु में श्वेत वस्त्र पहनी पर्वत शृंखलाएँ अपनी सुंदरता बिखेरती हैं। फिर बसंत के आगमन पर धरती श्वेत वस्त्र फेंक देती है और अनेक रंग बिखेरती है। फूल और नए पत्तों के विविध रंग बहार

ले आते हैं। इस प्रकार ऋतुओं का यह चक्र मौसम में परिवर्तन लाता है, साथ ही हमारे जीवन पर भी अपना प्रभाव डालता है।

### व्याकरण

प्र.1. (1) (i) फूल, पुष्प (ii) भ्रमर, भौंरा  
 (2) (i) ऋतु (ii) कलियाँ  
 (3) (i) मकरंद (ii) ऋतु  
 (4) (i) मुस्कायो - चुरायो (ii) उड़ायो - गायो

### लेखन कौशल (Writing Skill)

वसंत ऋतु

★

पीत-पीत हुए पात

सिकुड़ी-सिकुड़ी सी रात

ठिठुरन का अंत आ गया

देखो वसंत आ गया।'

साहित्य में वसंत ऋतु ने अपनी ऐसी जगह बना ली है कि उसे 'ऋतुराज' संबोधित किया गया है। सभी बसंत के प्रशंसक रहे हैं। इसके पीछे कारण भी हैं। प्रकृति अपना मादक मोहक रूप चारों ओर बिखेरती है। खेतों में सरसों के फूलों की शोभा, तो जंगलों में पलाश के फूल अपनी शोभा बिखेरते हैं। पेड़-पौधों पर हरितिमा छाने लगती है। सुप्त कलियाँ खिल उठती हैं। फूल अपने विविध रंगों की छटाएँ बिखेरते हैं। शीतल, मंद पवन अपने साथ उनकी सुगंध लुटाता है। आम के वृक्ष पर बौर सुशोभित होता है।

विविध रंगों के इन फूलों पर भैरे गुनगुनाते हैं। तितलियाँ इन फूलों की गोद में बैठकर उनको और भी मोहक बना देती हैं। आम के वृक्ष पर बैठकर कोयल अपनी मधुर तान सुनाती है। मोर वन-उपवन में थिरकते हैं।

इस तरह प्रकृति अपने पूरे शावाब पर जादू बिखेरती है। मनुष्य, पशु-पक्षी सभी स्वस्थ, सुखी और सक्रिय दिखाई देते हैं। वसंत प्रकृति का एक अनोखा उपहार है, जो मनुष्य को हँसाता है, खिलाता है, प्रफुल्लित करता है। इसके स्वागत में कवि कहते हैं,

'जय वसंत रसवंत सकल सुख सदन सुहावन  
 मुनि मन मोहन भुवन जिय प्रेम गुहावन।'

### 6. चंदा मामा की जय

प्र.1. (1)

माँ का कहना  
 न मानना।

समय पर काम  
 न करना।

नींदपरी द्वारा सुनील  
 पर लगाए गए आरोप

बड़ों का आदर  
 न करना।

दूसरों को  
 पीटना।

(2) (i) (1) असत्य (2) सत्य

(ii) (1) हम तुम्हें कड़ी से कड़ी सजा देंगे।  
 (2) सजा दी जाएगी।

(3) (i) (1) बचपन (2) बड़पन

(ii) (1) माफी (2) निरादर

(4) जीवन का एक-एक पल कीमती होता है। खोया हुआ धन हम फिर-से पा सकते हैं लेकिन बिता हुआ समय लौटकर नहीं आता। दुनिया में ऐसी घड़ी बनी ही नहीं जो बीते हुए समय को फिर-से दिखा दें। अतः समय के सामने घूटने टेक देने चाहिए और उसका सदुपयोग करना चाहिए। समय पर पढ़ाई-लिखाई करनेवाला छात्र सफलता प्राप्त करता है। रोगी को समय पर इलाज मिले तो वह जल्दी स्वस्थ हो जाता है। समय पर बीज बोने पर किसान को अच्छी फसल मिलती है। इन सब बातों से स्पष्ट है कि समय बड़ा महत्वपूर्ण है। संत कबीर के शब्दों में, कल करे सो आज कर, आज करे सो अब। पल में परलै होएगी, बहुरी करेगा कब ॥

प्र.2. (1)

बड़ों का कहना  
 मानना।

बड़ों का आदर  
 करना।

चंदा मामा द्वारा बताए  
 गए बच्चों के गुण

बड़ों से प्यार  
 करना।

आपस में  
 न झगड़ना।

(2) (i) (1) क्योंकि बच्चों ने छोटी-बड़ी सभी बुरी आदतें छोड़ देने की प्रतिज्ञा की।

(2) क्योंकि उन्होंने बच्चों के गुण नहीं देखे और सजा देने से पहले रातरानी को बच्चों की अच्छाइयाँ भी ढूँढ़नी चाहिए, ऐसा चंदा मामा का मानना था।

(ii) (1) बच्चे प्रतिज्ञा करते हैं कि हम छोटी-बड़ी सभी बुरी आदतें छोड़ देंगे।  
 (2) नींदपरी ने बच्चों के गुण नहीं बताए।

(3) (i) (1) छोटी × बड़ी (2) बुराई × अच्छाई  
 (ii) (1) आदत (2) ताली

(4) बच्चे तो शरारती ही होते हैं लेकिन वह कभी हद पार कर देते हैं। माँ-बाप के दुलार का फायदा उठाते हैं। उनकी छोटी गलतियाँ तो सब भूल जाते हैं। बच्चों को प्यार से उनकी गलतियाँ बतानी चाहिए ताकि वो दोबारा उन गलतियों को दोहराएं नहीं। बच्चों की बुरी आदतें छोड़ने के लिए, उनके बुरे बर्ताव के लिए उन्हें समय पर ही डॉटना-फटकारना बहुत जरूरी होता है नहीं तो वह गलत रास्ते पर चले जाएँगे। बच्चों को बात-बात पर मारना-पीटना भी अच्छा नहीं क्योंकि वे सजा के आदी हो जाते हैं। उनपर किसी बात का असर नहीं होता। इसके दुष्परिणाम भी हो सकते हैं इस बात का ख्याल रखना चाहिए।

### स्वाध्याय

प्र.1. (अ) (1) यह वाक्य रातरानी ने सुनील से कहा क्योंकि नींदपरी ने सुनील पर कई आरोप लगाए थे और रातरानी को भी ऐसा लगा कि सुनील बड़ों का मजाक उड़ाता है, उनका आदर नहीं करता।  
 (2) यह वाक्य रातरानी ने सभी बच्चों से कहा क्योंकि बच्चों में बुराई के साथ-साथ अच्छाई भी थी। और बच्चों ने प्रतिज्ञा भी की कि वे छोटी-बड़ी सभी बुरी आदतें छोड़ देंगे।  
 (आ) (1) कप-प्लेटे (2) बताशे (3) शैतानी  
 (4) अन्याय (5) गुणवाले

प्र.2. यह एकांकी रातरानी की अदालत का दृश्य प्रस्तुत करती है। एकांकी में नींदपरी द्वारा रोने वाले बच्चों पर मुकदमा चलाया गया है। सुनील, अनिल और अन्य चार बच्चों को अदालत में पेश किया गया। अनिल हमेशा रोता रहता है और सुनील बहुत शैतानियाँ करता है। आज उसने घर में चाय की कप-प्लेटें तोड़कर माँ को परेशान कर दिया था। वह अपनी माँ का कहना नहीं मानता था। कोई भी काम समय पर नहीं करता था। मतलब खाने के समय खाना नहीं खाता था, खेलने के समय खेलता नहीं था और पढ़ने के समय पढ़ता नहीं था। वह बड़ों का आदर नहीं करता था और उनको 'तू' कहकर पुकारता था और दूसरों को पीटता भी था।

उसके इतने सारे अपराध सुनकर रातरानी क्रोधित हुई और सुनील ने जब 'नींदपरी झूठ-मूठ कहती है' कहा तो रातरानी को लगा कि सुनील तो बड़ों का मजाक भी उड़ाता है। इसलिए वह उसे कड़ी-से-कड़ी सजा देना चाहती थी। परंतु सारे बच्चे गला फाड़कर रोने लगे और सुनील को सजा न देने की विनति करने लगे। बच्चों के रोने का कारण यह भी था कि रोने पर उन्हें लड्डू और बताशे मिलते थे इसलिए वे रोते थे। सुनील भी रातरानी से माफी माँगकर शैतानी न करने की बात कहता है। सभी बच्चे भी कभी न रोने की बात कहते हैं।

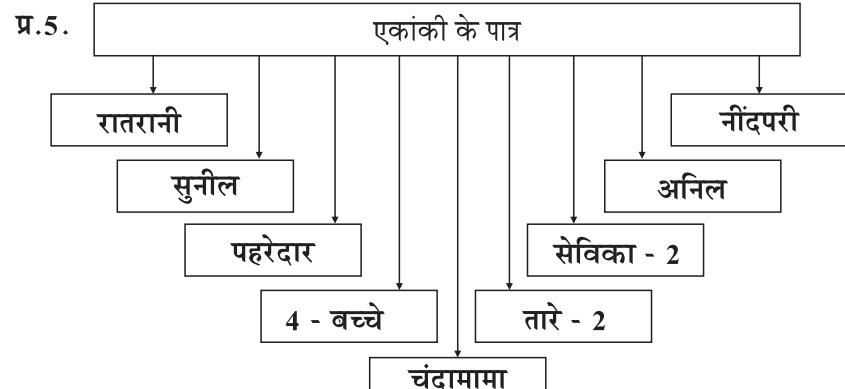
तभी चंदामामा आते हैं। चंदामामा ने बच्चों के अच्छे गुण रातरानी को बताएं और सुनील को सजा देकर अन्याय करने से रोका। उन्होंने बताया कि सुनील उससे छोटे बच्चों को कभी नहीं मारता, उनसे प्यार करता है। रोनेवाले सभी बच्चे बड़ों का कहना मानते हैं, उन्हें प्यार करते हैं, उनका आदर करते हैं, और आपस में कभी नहीं झगड़ते। ऐसे गुणी बच्चों को सजा नहीं दी जाती। रातरानी ने बच्चों को बुरी आदतें छोड़ने पर सजा नहीं देने का वचन दिया। बच्चों ने भी छोटी-बड़ी सभी बुरी आदतें छोड़ने की प्रतिज्ञा की। इसलिए रातरानी ने सभी बच्चों को माफ कर दिया।

इस तरह एकांकी द्वारा लेखक ने बुरी आदतों का त्याग करने की सलाह दी है। साथ ही बड़ों को सम्मान देने और छोटों से प्यार करने के लिए प्रेरित किया है। लेखक ने शांति-प्रियता के लिए भी प्रोत्साहित किया है।

प्र.3. इस एकांकी का पसंदीदा पात्र सुनील है। भले ही नींदपरी ने उसे रातरानी के सामने पेश किया है और उसपर कई आरोप भी लगाए गए हैं। फिर भी छोटे बच्चों ने रातरानी को सजा देने से रोकने की कोशिश की। ये सभी बच्चे रोते थे क्योंकि रोने पर उन्हें लड्डू और बताशे मिलते थे। लेकिन सुनील के लिए वे मिठाई को समर्पित करने के लिए तैयार हो गए थे। क्योंकि सुनील उनसे बहुत प्यार करता था। उन्हें कभी नहीं पीटता था। वह उन बच्चों का चहेता था। छोटे बच्चों से जो प्यार करता है, बच्चे उन्हें अपना मानते हैं। सुनील को बच्चे अपना भाई मानते थे। इतना अपनापन और प्यार पानेवाला सुनील मेरी नजर में बहुत ऊँचा है। इसलिए मुझे भी सुनील पसंद है।

प्र.4. हमारे जीवन में नैतिक मूल्यों का बहुत महत्व है। हमारे समाज और राष्ट्र की उन्नति इन्हीं मूल्यों पर निर्भर है। पाठशाला में पढ़ने वाले बच्चे देश का कल है। अतः उन्हें नैतिक मूल्यों की जानकारी और उनपर अमल करना नितांत जरूरी है। ये नैतिक मूल्य निम्नलिखित हैं।

(1) ईमानदारी (2) सत्यता (3) विवेक (4) शिष्टाचार (5) सदाचार (6) अनुशासन (7) त्याग (8) कृतज्ञता आदि। इनपर अमल करने के लिए मैं कभी झूठ नहीं बोलूँगा। अपनों से बड़ों के प्रति सम्मान की भावना रखूँगा। उम्र में जो मुझसे छोटे हैं उनके प्रति स्नेह की भावना रखूँगा। मेरे माता-पिता का कहना मानूँगा। अपने सभी काम समय पर करूँगा। सार्वजनिक जगहों पर शांति बनाए रखूँगा और शिष्टाचार का पालन करूँगा। घर हो या पाठशाला अनुशासन का पालन करूँगा। कोई शैतानी नहीं करूँगा।



### व्याकरण

(1) (1) में, (2) पर, (3) के, (4) की, (5) से,  
(6) का, (7) को, (8) ने, (9) री, (10) रे।

(2) गला फाड़कर रोना - अर्थ : जोर-जोर से रोना।

वाक्य : खिलौना टूट जाने के कारण बालक गला फाड़कर रो रहा था।

### लेखन कौशल (Writing Skill)

★ मंगल ग्रह की विज्ञान कथा को संचार माध्यमों द्वारा चित्रित किया गया है। उड़न तश्तरी से एलियनों के आने की खबरें भी कई बार अखबारों में आती हैं और ये एलियन मनुष्य से भी तेज दिमाग के होते हैं। अगर मेरा घर मंगल ग्रह पर होता तो इन एलियनों से मेरी दोस्ती होती और हम मनुष्य जो नहीं कर सकते ऐसे कारनामे मैं अपने दोस्तों की सहायता से करता। क्रिशा नाम की एक फिल्म में मैं इनके चमत्कार देख चुका हूँ।

यहाँ मुझे दो-दो चंदा मामा मिलते। एक का नाम फोबोस और दूसरे का डिमोज। ये चंदामामा भी धरती के चंदामामा से बिलकुल अलग। फोबोस तो पश्चिम में उदित होता है और हर 11 घंटे बाद उदित होता है और पूर्व में अस्त होता है। और डिमोज पूर्व में ही उदित होता है लेकिन इसका दोबार उदित होने का कालावधि लगभग 2 दिन सात घंटे हैं।

हमारा दिन 24 घंटे का होता है लेकिन मंगल का दिन पृथ्वी से थोड़ा बड़ा होता है। लगभग 40 मिनट बड़ा अर्थात् सोने खेलने के लिए 40 मिनट अधिक मिल जाते। यहाँ का वर्ष भी बहुत बड़ा होता है। 687 दिनों में एक वर्ष पूरा होता है। मतलब अगर मेरा घर मंगल पर होता तो मेरी उम्र लगभग आधी ही रहती।

ब्रह्मांड का सबसे ऊँचा पर्वत अलिंप मोंस मंगल पर है जो लगभग 24 कि.मी. ऊँचा है जिसे मैं अपनी आँखों से देख पाता। मैं खाने का और खास कर मीठा खाने का शौकीन हूँ, इसलिए मेरा वजन भी थोड़ा ज्यादा है। मुझे मिठाई खाने के लिए हरदम टोका जाता है। पर मंगल ग्रह पर मेरा वजन बहुत कम होता और मुझे मिठाई खाने से कोई नहीं टोकता। पृथ्वी पर 100 किलो वजन हो तो मंगल पर 37 किलो ही दिखाई देता है। है न मजे की बात!

छुटियों में मैं अपने दोस्तों को अपने घर बुलाता। उन्हें वहाँ ले आने के लिए उड़न तश्तरी भेजता। फिर जब मेरे मित्र मेरे घर आ जाते तो मैं उन्हें अपने घर के आस-पास की सैर कराता। हम बर्फ से खूब खेलते। और छुटियाँ खत्म होते ही मैं अपने दोस्तों को फिर से उड़न खटोले पर बिठाकर धरती पर छोड़ देता।

### स्वयं अध्ययन

(1) सौर मंडल में सूर्य, ग्रह, उपग्रह, क्षुद्रग्रह, उल्का, धूमकेतु और खगोलिय धूल से बना है। सौर मंडल में आठ ग्रह, उनके 166 उपग्रह (चंद्रमा) पाँच बैने ग्रह और अरबों छोटे पिंड शामिल हैं। इन छोटे पिंडों में क्षुद्र ग्रह, धूमकेतु, उल्काएँ आदि हैं।

सौर मंडल के चार छोटे आंतरिक ग्रह हैं बुध, शुक्र, पृथ्वी और मंगल। फिर बृहस्पति, शनि, अरुण या युरेनस और वरुण या नेपच्यून। आंतरिक ग्रह और बाह्य ग्रहों के बीच यानि मंगल और बृहस्पति के बीच क्षुद्रग्रहों का घेरा है जिसमें सीरीस नामक एक बैना ग्रह भी है। सौरमंडल के छोर पर बहुत ही छोटे-छोटे अरबों पिंड विद्यमान हैं, जो धूमकेतु या पुच्छल तारे कहलाते हैं।

सौर मंडल के ये सभी आकाशीय पिंड स्वयं की ओर सूर्य की परिक्रमा करते हैं। पृथ्वी स्वयं की परिक्रमा 24 घंटे में पूरा करती है। इसके लिए उसे 23 घंटे, 56 मिनट और 4 सेकंड लगते हैं। पृथ्वी की यह दैनिक गति है जिसकी वजह से पृथ्वी पर दिन और रात होते हैं। पृथ्वी की वार्षिक गति भी है। पृथ्वी को सूर्य की परिक्रमा पूरी करने के लिए 365 दिन, 6 घंटे, 48 मिनट और 45 सेकंड लगते हैं। पृथ्वी की इस गति की वजह से पृथ्वी पर अलग-अलग ऋतुएँ होती हैं।

(2) सुनीता विलियम अंतरिक्ष में जाने वाली भारतीय मूल की दूसरी महिला है। अंतरिक्ष में वे सात बार जा चुकी हैं और 50 घंटे 40 मिनट स्पेसवॉक करने वाली पहली महिला हैं। इनका जन्म 19 सितंबर 1965 में युक्तिल (ओहियो राज्य) में हुआ। विवाह पूर्व इनका नाम सुनीता दीपक पांड्या था। इनके पति का नाम माइकल विलियम है। उनके पिता डॉ. दीपक पांड्या एम.डी.हैं। उनके पति माइकल विलियम नौसेना पोत चालक, हेलिकॉप्टर पायलट, पेशेवर नौसैनिक एवं गोताखोर हैं।

सुनीता को कई देश-विदेश के पुरस्कारों से सम्मानित किया गया है। जैसे - भारत सरकार द्वारा पद्मभूषण, नासा स्पेसफ्लाइट मेडल, रशिया द्वारा स्पेस अभियान दल में मेरिट आने के लिए, नेवी एंड मैरिन क्रॉप अचिवमेंट मेडल आदि। सुनीता 'महिला एक व्यक्तित्व अनेक' की सच्ची कहानी है। वे एक ऐसी असाधारण महिला हैं जिनके नाम अनेक रिकॉर्ड दर्ज हुए हैं। उन्होंने अंतरिक्ष में 194 दिन, 18 घंटे रहकर विश्व रिकॉर्ड बनाया है। सुनीता में असाधारण इच्छाशक्ति, दृढ़ता, उत्साह और आत्मविश्वास जैसे गुण होने के कारण ही वे इस तरह प्रतिमान बना पाई। वे समुद्रों में तैराकी कर चुकी हैं, महासागरों में गोताखोरी कर चुकी हैं, युद्ध और मानव कल्याण के कार्य के लिए उड़ाने भर चुकी हैं, अंतरिक्ष तक पहुँच चुकी हैं और अब अंतरिक्ष से धरती पर आ चुकी हैं। सचमुच वे एक प्रेरणा बन चुकी हैं।

### अंतरिक्ष यात्रियों के नाम :

- (1) पहला अंतरिक्ष यात्री - यूरी गागरिन
- (2) पहली महिला अंतरिक्ष यात्री - वेलेन्टिना तरेश्कावा
- (3) पहला भारतीय अंतरिक्ष यात्री - राकेश शर्मा
- (4) चाँद पर कदम रखनेवाला - नील आर्मस्ट्रांग
- (5) सबसे अधिक उम्र का यात्री - कार्ल जी हैनिजे
- (6) सबसे कम उम्र का अंतरिक्ष यात्री - गेरेमान तितोब

### मेरी कलम से

★ माँ - (अपने-आप से) आज कुँजड़िन आएगी तो हरी सब्जी के लिए जरूर पूछँगी।

पड़ोसन - भाभी जी कुँजड़िन आएगी तो मुझे भी आवाज देना।

माँ - हाँ, जरूर।

कुँजड़िन - सब्जी लेलो, सब्जी।

माँ - आ जा, तुम्हारी ही राह देख रही थी। (पड़ोसन से) ये लो, आ गई कुँजड़िन।

कुँजड़िन - आज सब्जी बहुत बढ़िया लाई हूँ और बहनजी मुझे आपके हाथ की बोहनी चाहिए।

माँ - देख, ये पालक की एक गड्डी दे दें, थोड़ा-सा हरा धनिया और पुदिना भी चाहिए।

कुँजड़िन - साथ में अदरक और हरी मिर्च दूँ क्या?

माँ - हाँ, एक-दो नींबू भी देना, पर दाम सही लगाना।

कुँजड़िन - बहन जी आप से मैंने कभी दाम ज्यादा लिया है क्या?

माँ - अब मेरा मुँह मत खुलवाओ। मीठा-मीठा बोलकर मुझ से अच्छे खासे रुपए ऐंठ लेती हो।

कुँजड़िन - अरे, अरे, ऐसी नाराज मत हो बहन। आप लोग मोलभाव करते हों, इसलिए थोड़ा बोलना ही पड़ता है।

माँ - चल बहने मत बना। इनका मोल क्या हुआ।

कुँजड़िन - 50 रुपए बहनजी।

माँ - अच्छा ले, अब थोड़ा कढ़ी पत्ता भी डाल दें।

कुँजड़िन - कल क्या लाऊँ आपके लिए?

माँ - कल मुझे गलके और करेले ले आना। आलू और प्याज अभी पढ़े हैं।

कुँजड़िन - जी बहन जी (पैसे टोकरी की सब्जी को लगाकर बटवे में रखते हुए उठती है।) बहन जी थोड़ा हाथ लगाओ, उठाने में। (टोकरी सिर पर रखकर) सब्जी ले लो सब्जी, ताजी-ताजी सब्जी।

### उपक्रम (Activity)

(1) विद्यार्थी उपक्रम स्वयं करें।

### 7. रहस्य

प्र.1. (1) (iv) अगली सुबह उसने मामा जी से कैमरा माँग लिया।

(iii) मामी जी को साथ बैठाकर मामा जी का फोटो लिया।

(i) कनिष्ठा ने मामा-मामी के साथ आर्यन के भी फोटो खींचे।

(ii) आर्यन ने कैमरा अपने पास रख लिया।

(2) (i) **आर्यन** — **कैमरा पाकर खुश होने वाले व्यक्ति** — **कनिष्ठा**

(ii) (1) रात में मामूली रोशनी में यह तसवीर खींच लेता है।

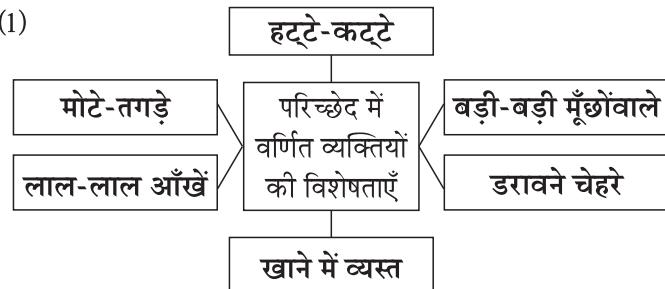
(2) रहस्य का पता लगाने का यह अच्छा अवसर था।

(3) (i) (1) **प्रतिक्षा** (2) **निशा**

(ii) (1) **अँधेरा** (2) **उदास**

(4) मेरा जन्मदिन 19 अगस्त को आता है। पिछले साल मैं ग्यारह साल का हुआ। उस वर्ष मेरे माता-पिता ने मेरा जन्मदिन बहुत धुमधाम से मनाया। सुबह हम सब मंदिर गए। माँ ने खाने में मेरी मनपसंद चीजें बनायी थीं। शाम को पूरा घर गुब्बारों और रंगीन परदों से सजाया। घर में बड़ी चहल-पहल और प्रसन्न वातावरण था। नजदीक के रिश्तेदार, मेरे दोस्त और हमारे पड़ोसी जन्मदिन की शुभकामनाएँ देने आये थे। घर में खुशी का माहौल था। अभी केक काटने का समय आया और उसी वक्त गाँव से मेरी दादी और बुआ जो पिछले कई साल मुंबई में नहीं आए थे वे मेरे जन्मदिन के अवसर पर घर आए। उन्हें देखकर मेरी खुशी का तो ठिकाना ही नहीं रहा। दादी माँ ने दौड़कर मुझे गले लगाया। खुशी से मेरे आँखों के आँसू रुक ही नहीं रहे थे। इसके बाद मैंने केक काटा। सभी ने मेरे दीर्घायु होने की कामना की। मेरी दादी और बुआ ने मुझे बहुत स्नेह से आशिर्वाद दिया। मेरी दादी और बुआ का मेरे जन्मदिन पर आना मेरे लिए 'सरप्राइज़ गिफ्ट' था। यह प्रसंग मैं मेरे जीवन में कभी नहीं भूलूँगा।

प्र.2. (1)



(2) (i) (1) नारायणपुर (2) सवेरे-सवेरे, शाम  
 (ii) (1) कैमरा निकाला (2) वे घर की ओर चल पड़े।

(3) (i) आँख - आँखों का तारा होना।  
 चेहरा - चेहरे पर हवाइयाँ उड़ना।  
 (ii) (1) बत्ती (2) दुकानें

(4) लक्ष्य प्राप्त करने की मन में इच्छा हो तो साहस अपने आप आता है। साहस हो तो रास्ते में आनेवाली सारी कठिनाईयाँ सहज दूर हो जाती है। दृढ़ निश्चय और साहस हो तो कोई भी कार्य नामुकीन नहीं है। निश्चय अगर दृढ़ हो तो प्रतिकूल परिस्थितियाँ भी अनुकूल बनाने का साहस मन में आता है। दृढ़ निश्चय साहस करने के लिए प्रेरित करता है और सबकुछ संभव करता है। मन में दृढ़ निश्चय हो तो साहस के बल पर हम संघर्ष करके सफलता प्राप्त कर सकते हैं। दृढ़ निश्चय हो तो व्यक्ति अथक परिश्रम से सारी बाधाओं का सामना करते हुए लक्ष्य प्राप्त करने की कोशिश करते हैं। जिसके पास दृढ़ निश्चय, आत्मविश्वास और साहस है उसे जीवन में आगे बढ़ने से कोई रोक नहीं सकता। दृढ़ निश्चयी व्यक्ति को निराश होने की जरूरत ही नहीं पड़ती। अपने साहस से वह उज्ज्वल भविष्य को निश्चित करता है।

### स्वाध्याय

प्र.1. (अ) (1) सन्नाटा (2) वैज्ञानिक  
 (3) कारतूसों (4) सावधानी  
 (आ) (क) - नारायणपुर, (ख) - कपोल कल्पना, (ग) - कहकहों की आवाज

प्र. 2. (4) अब जमींदार का परिवार खत्म हो गया है।

(3) आर्यन ने कनिष्ठा से कुछ सलाह-मशविरा किया।  
 (1) आर्यन और कनिष्ठा दबे पाँव हवेली में चले गए।  
 (2) सभी डाकुओं के आतंक से मुक्त हो गए।

### बताओ तो सही

प्र.3. घर में - मुझे याद है चलते समय किसी ने जुकाम के कारण भी छींक दिया तो मेरे दादाजी जाना स्थगित कर देते थे। क्योंकि उनका मानना था कि छींक के कारण उनके काम सिद्ध होने में बाधा आएगी।

विद्यालय में - विद्यालय में प्रतिभा प्रदर्शन प्रतियोगिता थी। तब मैंने जादू के छोटे-मोटे खेल किए। नारियल से फूल निकालकर मैंने सबको चौंका दिया। फिर सभी को बता भी दिया कि नारियल में छेद करके मैंने फूलों की कलियाँ कल ही नारियल में डाल दी थीं। आज वे कलियाँ नारियल में स्थित पानी के कारण खिल गई थीं। सबके सामने नारियल तोड़ने पर उसमें फूल इसलिए निकले। यह जादू नहीं बल्कि हाथ की सफाई है।

परिवेश में - अपने परिवेश में मैंने अपने साथियों के साथ मिलकर एक संघटना बनाई है। गणेश विसर्जन के समय पानी में मूर्तियाँ और निर्माल्य का विसर्जन होने से जल प्रदूषण होता है।

प्र.4. (1) आर्यन और कनिष्ठा हवेली का रहस्य जानने रात के अँधेरे में हवेली पहुँचे। हवेली में बीचोंबीच एक बड़ा कमरा था जिसका दरवाजा अंदर से बंद था। कमरे की खिड़कियाँ नीचे से बंद थीं लेकिन ऊपर से खुली थीं। खिड़की से अंदर झाँककर देखा तो हट्टे-कट्टे, मोटे-तगड़े, बड़ी-बड़ी मूँछोंवाले कई लोग पगड़ी बाँधे बैठे थे। कुछ लोगों ने कमीज़ और पैट भी पहनी थीं। सब खाने में मस्त थे लेकिन सबके चेहरे डरावने थे। उनके पास बंदूकें, तलवारें और कारतूस थे। अंदर गैस बत्ती की तेज रोशनी थी।

(2) जिस हवेली में भूतों का डेरा होने की बात गाँव में सब लोग कहते थे उस हवेली का रहस्य जानने के लिए आर्यन और कनिष्ठा मामा जी का कैमरा लेकर रात के अँधेरे में गए थे। उन्होंने हवेली में मौजूद लोगों के कई फोटो खींचे। फिर आर्यन ने नारायणपुर जाकर सारे फोटो तैयार करवाए और

मामा जी को दिखाए। फिर मामा जी को साथ लेकर वे थानेदार के पास गए। थानेदार ने फोटो देखते ही पहचान लिया कि ये वही लोग हैं जिनकी तलाश पुलिस को थी। हवेली में जो डाकू थे उनकी तलाश पिछले कई वर्षों से पुलिस कर रही थी। डाकुओं के इस गिरोह ने कई वर्षों से उत्पात मचा रखा था। डकैती और राहजनी इनका पेशा था। ऐसे खतरनाक लोगों का ठिकाना ढूँढ़कर आर्यन और कनिष्ठा ने बहादुरी का काम किया था। पुलिस की मदद से उन्हें पकड़वाकर दोनों ने गाँववालों को डाकुओं के आतंक से मुक्त किया था। क्योंकि पुलिस के छापे में कुछ डाकू पकड़े गए थे और कुछ मारे गए थे।

इसी बहादुरी के लिए आर्यन और कनिष्ठा को 'वीरता पुरस्कार' घोषित हुआ।

### व्याकरण

प्र.1.



- (1) मछुआरे ने जाल फेंका।
- (2) पायल ने मछलियों को चारा दिया।
- (3) नाविक ने पतवार से नाव चलाई।
- (4) रामू ने माला को नारियल तोड़कर दिए।
- (5) रामू ने पेड़ से नारियल तोड़े।
- (6) राजू का घर नदी के किनारे है।
- (7) रामू नारियल के पेड़ पर चढ़ा।
- (8) पानी में मछलियाँ तैर रही हैं।

प्र.2. (1) खाट पकड़ना - अर्थ : बीमार होना।

वाक्य : बारिश में भीगकर राहुल ने खाट पकड़ ली।

(2) करवटें बदलना - अर्थ : बेचैन रहना।

वाक्य : गरमी के कारण मैं रातभर करवटें बदलती रही।

(3) कमर कसना - अर्थ : दृढ़ संकल्प करना।

वाक्य : परीक्षा में अच्छे अंक पाने के लिए सभी छात्रों ने कमर कस ली है।

(4) तारीफ के पुल बाँधना - अर्थ : प्रशंसा करना।

वाक्य : राज तारीफ के पुल बाँधते हुए अपनी विदेश यात्रा का वर्णन कर रहा था।

(5) खून पसीना एक करना - अर्थ : कड़ी मेहनत करना।

वाक्य : पिता अपनी खून पसीना एक करके कमाई हुई दौलत बेटे को बरबाद नहीं करने देंगे।

प्र. 3. सामान्य भूतकाल - ठिकाना मैंने बताया।

सामान्य भविष्यत्काल - ठिकाना मैं बताऊँगा।

अपूर्ण वर्तमानकाल - ठिकाना मैं बता रहा हूँ।

अपूर्ण भूतकाल - ठिकाना मैं बता रहा था।

पूर्ण वर्तमानकाल - ठिकाना मैंने बताया है।

पूर्ण भूतकाल - ठिकाना मैंने बताया था।

### स्वयं अध्ययन



#### हिंदी

- (1) बंदर क्या जाने अदरक का स्वाद
- (2) एक पंथ दो काज
- (3) जो गरजते हैं वे बरसते नहीं
- (4) दूर के ढोल सुहावने
- (5) बगल में छोरा शहर में ढिंढोरा
- (6) बूँद बूँद से घट भरता है
- (7) साँच को आँच नहीं
- (8) डूबते को तिनके का सहारा
- (9) खोदा पहाड़ निकली चुहिया
- (10) ढाक के तीन पात

#### मराठी

- गाढ़वाला गुळाची चव काय?
- एका दगडात दोन पक्षी मारणे.
- गरजेल तो बरसेल काय?
- दुरुन डोंगर साजरे.
- काखेत कळसा नि गावाला वळसा.
- थेबे थेबे तळे साचे.
- सत्याला मरण नाही.
- बुडत्याला काढीचा आधार.
- डोंगर पोखरून उंदीर काढणे.
- पळसाला पाने तीनच.

सदैव ध्यान में रखो।

★ हम बचपन से सुनते और मानते आ रहे हैं कि अपने से बड़ों की आज्ञाओं का पालन करना चाहिए। ऐसा इसलिए कहा जाता है क्योंकि उनके अनुभव और ज्ञान से हमारा मार्गदर्शन होता है। उनका आशीर्वाद भी हमारा मनोबल बढ़ाने में मदद करता है। यह एक मनोवैज्ञानिक तथ्य है।

फिर भी बिना कोई सवाल किए आज्ञा मानना समाज और संस्कृति को पतन की ओर ले जाता है। आज्ञाकारी होने का मतलब है कि जो कुछ बड़ों ने कहा वह सत्य है। अगर उस सत्य को हम मान लेंगे तो हमारी बुद्धि नष्ट हो जाएगी। सत्य का प्रभुत्व होना ही चाहिए लेकिन वह विज्ञानिष्ठ और तरक्संगत हो। यह बंदिश नहीं होनी चाहिए कि चीजों को पुराने रीति रिवाजों के अनुसार ही करना है। हमें हर चीज को अपनी बुद्धि की कस्टौटी पर परखना चाहिए और बेहतर से बेहतर समाधान खोजना चाहिए। इस पाठ के आर्यन और कनिष्ठा ने बड़ों की आज्ञा का पालन नहीं किया क्योंकि भूत-वूत केवल काल्पनिक बातें हैं यह उनकी बुद्धि ने उन्हें बताया और तभी वे गाँव वालों को डाकुओं के आंतक से मुक्त कर पाए।

उपक्रम (Activity)

★ पात्र : आर्यन, कनिष्ठा, थानेदार, मामा जी

आर्यन : कनिष्ठा मैं सारे फोटो बनवाकर ले आया हूँ।

कनिष्ठा : आर्यन ये तसवीरें तो भूतों की नहीं लगती। चलो हम मामा जी को दिखाते हैं।

कनिष्ठा : (फोटो दिखाते हुए) आप कहते हो भूतों के पैर उलटे होते हैं, उनकी छाया नहीं होती, उनके फोटो नहीं ले सकते। देखिए ये भूतों के फोटो हमने कल रात हवेली जाकर लिए हैं।

मामा जी : (परेशान होकर) तो क्या भूत इनसानों जैसे होते हैं?

आर्यन : इनसानों जैसे नहीं, मामा जी इनसान ही भूत है। देखिए न, इनके पैर भी सीधे हैं, इनकी छाया भी है और इनके फोटो भी लिए गए हैं। असल में यह अफवाह मात्र है कि हवेली में भूत है।

कनिष्ठा : और नहीं तो क्या! इन लोगों का रहस्य न खुले इसलिए इन्होंने ही हवेली में भूत होने ही अफवाह फैलाई ताकि लोग उधर न जाएँ और ये अपने काम बिना रोक-टोक के करते रहें।

आर्यन : मुझे तो यह मामला गड़बड़ लगता है। मामा जी क्या आप मेरे साथ थाने चलेंगे?

मामा जी : तुम सही हो बच्चों, चलो ये तसवीरें थानेदार को दिखाएँगे। (मामा जी आर्यन और कनिष्ठा के साथ थाने जाते हैं।)

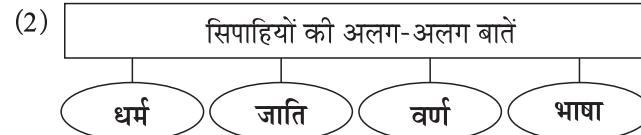
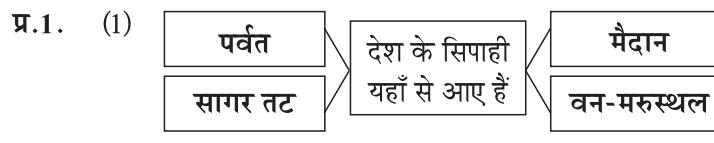
थानेदार : (तसवीरें देखकर) अरे ये तो बहुत बड़ा डाकुओं का गिरोह है। कई वर्षों से ये डकैती और राहजनी कर उत्पात मचा रहे हैं। पुलिस ने इनको पकड़ने के लिए खून-पसीना एक कर दिया था। शाबाश! तुम दोनों ने बहुत बहादुरी का काम किया है। कहाँ हैं ये लोग?

आर्यन : आप तैयारी कीजिए, ठिकाना मैं बताता हूँ। (और उसी रात पुलिस ने भूतों के डेरे पर छापा मारकर गाँववालों को डाकुओं के आंतक से मुक्त कराया।)

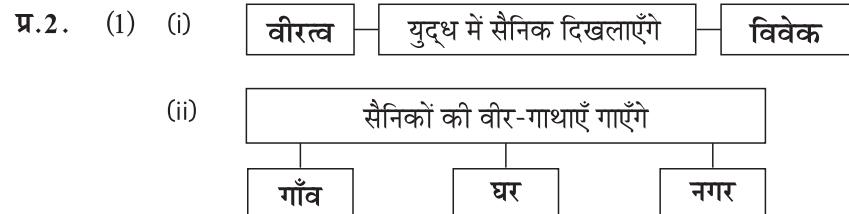
वाचन जगत से

★ विद्यार्थी स्वयं करें।

8. हम चलते सीना तान के



(3) देश के सिपाही अलग-अलग धर्म के हों या अलग-अलग जाति के हों, उनका वर्ण, उनकी भाषा चाहे अलग हो, लेकिन सबसे पहले वे हिंदुस्तानी हैं। भले ही वे देश के किसी भी कोने से क्यूँ न आए हों, जैसे कि पर्वतीय प्रदेश हो या सागर तट, हरे-भरे वन हों या उजड़ा रेगिस्तान या फिर मैदान, फौजी वर्दी पहनकर वे सबसे पहले बने हैं हिंदुस्तान के और बेटे बने हैं भारत माता के जो सीना तान कर गर्व से चले हैं।



(2) (i) (1) हम सबसे आगे रहते अवसर पर बलिदान के।  
(2) अनगिन कंठों में गूँजेंगे बोल हमारे गान के।

(ii) (1) युद्ध - समर (2) झंडा - निशान

(3) युद्ध में हम अपनी वीरता और विवेक का ऐसा परिचय देंगे कि उसकी कहानियाँ देश के गाँव, नगर और घर-घर में परिचित हो जाएँगी। हमारी वीर गाथाएँ गीत बनकर अनगिनत देशवासियों के कंठों से फूट पड़ेंगी। समर्पण के ये गीत गाते हुए हम सीना तानकर आगे बढ़ते हैं।

प्र.3. (1) डॉ. हरिवंशराय बच्चन  
(2) हम गिर जाएँ किंतु न गिरने देंगे देश निशान को, हम मिट जाएँ किंतु न मिटने देंगे हिंदुस्तान को, हम सबसे आगे रहते अवसर पर बलिदान के। भारतमाता के बेटे हम चलते सीना तान के।  
(3) भले ही हम गिर जाएँ लेकिन देश के झंडे को गिरने नहीं देंगे। हमेशा उसका सम्मान बनाए रखेंगे। देश का नाम हमें दुनिया में रोशन करना है। देश के लिए अपना तन-मन-धन न्योछावर करने के लिए और देश के लिए बलिदान करने में पीछे नहीं हटेंगे। देश की सेवा, देश का रक्षण करने के लिए यह पंक्तियाँ प्रेरित करती है और उसका सम्मान करने की सीख देती है।  
(4) हिंदुस्तान के कण-कण में समता, ममत्व और अपनापन है। देश की रक्षा करने के लिए और देश की मिट्टी का कर्ज उतारने के लिए समर्पण और त्याग करना चाहिए। आज के बालकों को देश के रक्षक, सिपाही बनकर आगे बढ़ना है। समता, बंधुत्व का पाठ हमें यह कविता सीखाती है। देश के झंडे का सम्मान करना चाहिए। देश में रहनेवाले लोग अलग जाति, अलग धर्म और अलग वर्ण के हो लेकिन सबसे पहले वह हिंदुस्तानी है यह बात हमेशा याद रखनी चाहिए।

स्वाध्याय		
(1) वन- मरुस्थल	(2) रजकण	(3) श्रम
(4) निशान	(5) वीरत्व-विवेक	
प्र.2. (अ) (1)	इस देश की मिट्टी में हम खेले हैं, खा-पीकर बड़े हुए हैं। देश की मिट्टी के कण-कण से हमें ममता और स्नेह मिला है। इस मिट्टी ने कभी हमारे बीच भेदभाव नहीं किया। इस मिट्टी के कण-कण का हम पर कर्ज है जो हमें चुकाना है। हम भारत माता की संतानें हैं और सीना तानकर आगे बढ़ते हैं।	
(2)	देश पर अगर शत्रुओं का आक्रमण हुआ तो हम अपनी वीरता और विवेक का ऐसा परिचय देंगे कि उसकी कहानियाँ भारत के गाँव, नगर और घर-घर में गाई-सुनाई जाएँगी। हमारी वीर गाथाएँ गीत बनकर अगणित देशवासियों के कंठों से फूट पड़ेंगी। समर्पण के ये गीत गाते हुए हम सीना तानकर आगे बढ़ते हैं।	
(आ)	प्रस्तुत कविता हरिवंशराय बच्चन द्वारा लिखा एक अभियान गीत है। इस रचना के माध्यम से कवि ने समता एवं बंधुता का महत्व प्रतिपादित किया है। प्रकृति ने भारत को भले ही मैदानों और पर्वतों में बाँट दिया हो परंतु स्थानभिन्नता से फर्क नहीं पड़ता, ना ही धर्म, जाति-पांति या भाषा देशवासियों को बाँट सकती है। इस देश के कण-कण में समता, ममत्व, अपनापन है। देश की रक्षा करने के लिए और देश की मिट्टी का कर्ज उतारने के लिए समर्पण और त्याग हमारा इतिहास रहा है। हम बच्चे भी उन्हीं के बंशज हैं। बलिदान का अवसर मिलने पर पीछे नहीं हटेंगे। मिट्टी जाएँगे लेकिन देश के झंडे को गिरने नहीं देंगे। इतना उत्कृष्ट देशभ्रेम देश के हर बालक में है। यही इस कविता का केंद्रीय भाव है।	
(इ)	राष्ट्रीय ध्वज - तिरंगा	राष्ट्रीय पुष्प - कमल
	राष्ट्रीय पक्षी - मोर	राष्ट्रीय गान - जन-गण-मन
	राष्ट्रीय नदी - गंगा	राष्ट्रीय जलचर - डॉलफिन
	राष्ट्रीय प्रतीक - अशोकस्तंभ	राष्ट्रीय पशु - बाघ
	राष्ट्रीय गीत - वंदे मातरम्	राष्ट्रीय फल - आम
	राष्ट्रीय मुद्रा - रुपया	राष्ट्रीय पेड़ - बरगद

(ई)

## ‘विविधता में एकता

### भारत की है विशेषता’

हमारे देश में अनेक धर्म और जाति के लोग प्रेमभाव से मिल-जुलकर रहते हैं। हमारा खान-पान, रहन-सहन एक-दूसरे से भिन्न है। हमारी खुशियाँ, हमारे त्योहार, उत्सव, पर्व सब अलग-अलग हैं। हमारी वेश-भूषा भी एक-दूसरे से मेल नहीं खाती परंतु हमारी आत्मा एक है।

हम भले ही अलग-अलग भाषा बोलते हैं परंतु एक-दूसरे के सुख-दुख साझा करते हैं। हमारे पुरुषों ने हमें मानवता का पाठ पढ़ाया है। हम सबका देश एक है। हम सब सबसे पहले भारतवासी हैं।

### खोजबीन :

राज्य	भाषा	राज्य	भाषा
जम्मू एवं कश्मीर	कश्मीरी	हिमाचल प्रदेश	हिंदी
पंजाब	पंजाबी	उत्तराखण्ड	हिंदी
उत्तर प्रदेश	हिंदी	राजस्थान	हिंदी
प. बंगाल	बंगाली	छत्तीसगढ़	छत्तीसगढ़ी
झारखण्ड	हिंदी	सिक्किम	नेपाली
नागालैंड	बंगाली	मिजोरम	बंगाली
असम	असमिया	त्रिपुरा	बंगाली
ओडिशा	ओरिया	महाराष्ट्र	मराठी
कर्नाटक	कन्नड	दमन और दीव	गुजराती
गोवा	कोंकणी	आंध्र प्रदेश	तेलगु
लक्ष्मीपुरी	मल्यालम	तमिलनाडु	तमिल
अंदमान निकोबार	बंगाली	तेलंगणा	तेलगु
हरियाणा	हिंदी	मेघालय	बंगाली
दिल्ली	हिंदी	गुजरात	गुजराती
मध्य प्रदेश	हिंदी	दादरा और	गुजराती
बिहार	हिंदी	नगर हवेली	
अरुणाचल प्रदेश	बंगाली	केरल	मल्यालम
मणिपुर	मणिपुरी	पुडुचेरी	तमिल

### व्याकरण

★ (1) विस्मयार्थक वाक्य – वाह! क्या बनावट है ताजमहल की !

(2) विधानार्थक वाक्य – बच्चे हँसते-हँसते खेल रहे थे।

(3) निषेधार्थक वाक्य – माला घर नहीं जाएगी।

(4) इच्छार्थक वाक्य – खूब पढ़ो, खूब बढ़ो।

(5) संकेतार्थक वाक्य – यदि बिजली आएगी तो रोशनी होगी।

(6) प्रश्नार्थक वाक्य – इसे हिमालय क्यों कहते हैं?

(7) आज्ञार्थक वाक्य – सदैव सत्य के पथ पर चलो।

(8) संभावनार्थक वाक्य – कश्मीर का सौंदर्य देखकर तुम्हें आश्चर्य होगा।

### अध्ययन कौशल

#### मुहावरे :

- अकल का पत्ता खोलना = तरकीब बताना।
- अनाप-शानाप बोलना = निरर्थक बातें करना।
- आँखें खुली की खुली रहना = चकित रह जाना।
- कमर कसना = दृढ़ संकल्प करना।
- करवटें बदलना = बेचैन रहना।
- खाट पकड़ना = बीमार होना।
- खून-पसीना एक करना = कड़ी मेहनत करना।
- गला फाड़कर रोना = जोर जोर से रोना।
- गले लगाना = प्यार से मिलना।
- चार चाँद लगाना = शोभा बढ़ाना।
- जी की कली खिलना = खुश होना।
- ठगा सा रह जाना = चकित होना।
- ठान लेना = निश्चय करना।

- (14) तारीफ के पुल बाँधना = प्रशंसा करना।
- (15) तुनककर बोलना = चिढ़कर बोलना।
- (16) दरार पड़ना = दूरी बढ़ना।
- (17) दाव पर लगाना = कुछ पाने के लिए बदले में कुछ लगाना।
- (18) दिन दूनी-रात चौगुनी उन्नति = तेज गति से विकास।
- (19) दुखड़ा रोना = दुख सुनाना।
- (20) मात देना = पराजित करना।
- (21) मुँह लटकाना = उदास होना।
- (22) सिर आँखों पर रखना = स्वीकार करना।
- (23) सीना तानकर चलना = गर्व से चलना।
- (24) हथियार डालना = आत्मसमर्पण करना।

#### कहावतें :

- (1) अंत भला तो सब भला = परिणाम अच्छा तो सब अच्छा।
- (2) एक और एक ग्यारह = एकता में बल।
- (3) चिराग तले अँधेरा = योग्य व्यक्ति के आसपास ही अयोग्यता।
- (4) जहाँ चाह, वहाँ राह = इच्छा होने पर मार्ग मिलता है।
- (5) दूध का दूध पानी का पानी करना = सही न्याय करना।

**मेरी कलम से**

★ विद्यार्थी स्वयं कृती करें।

**सुनो तो जरा**

- (1) 26/11 के आतंकी हमले को मुंबईवासी ही नहीं बल्कि दुनिया भी भुला नहीं सकती। इसी आतंकी हमले में शहीद हुए ब्लैक कमांडो के मेजर संदीप उन्नीकृष्णन। अपनी छोटी सी जिंदगी में उन्होंने ऐसी वीरता का परिचय दिया कि देशवासियों के दिलों में बस गए।

इनका जन्म 15 मार्च 1977 को बैंगलोर में स्थित नायर परिवार में हुआ। इनका मूल गाँव चेरुवनूर, केरल में स्थित है। परंतु इनके पिताजी सेवानिवृत्त होने के बाद बैंगलोर में बस गए। आई.एस.आर.ओ. अधिकारी के, उन्नीकृष्णन और धनलक्ष्मी उन्नीकृष्णन के संदीप इकलौते पुत्र थे।

इनकी शिक्षा फ्रैंक एंथोनी पब्लिक स्कूल, बैंगलोर में हुई। 1995 में उन्होंने विज्ञान की स्नातक उपाधि प्राप्त की और फिर वे एन.डी.ए. में शामिल हो गए। 12 जुलाई 1999 को उन्हें बिहार रेजिमेंट में लेफ्टिनेंट के पद पर नियुक्त किया गया। हमले और चुनौतियों का सफर वहाँ से शुरू हो गया। वे एक ऐसे लोकप्रिय अधिकारी थे जिन्हें उनके वरिष्ठ और कनिष्ठ दोनों पसंद करते थे। सेना के सबसे कठिन कोर्स 'धातक कोर्स' में वे अव्वल रहे। बहादुरी के उनके जजबे को देखकर ही उन्हें एन.एस.जी. कमांडो सेवा के लिए चुना गया। जुलाई 1999 में ऑपरेशन विजय के दौरान उन्होंने अपनी वीरता का परिचय दिया।

26 नवंबर 2008 की रात ताज होटल के ऑपरेशन में वे टीम कमांडर थे। 10 कमांडो के एक समूह के साथ उन्होंने होटल में प्रवेश किया और होटल की छठी मंजिल पर पहुँचे। तीसरी मंजिल पर आतंकवादियों को पाकर उन्होंने उनसे कड़ा मुकाबला किया। उनके प्रमुख सहयोगी सुनील यादव इस मुठभेड़ में घायल हुए। आतंकवादियों से भयंकर मुठभेड़ करते हुए उन्होंने सुनील यादव को इलाज के लिए बाहर निकालने की व्यवस्था की। अपनी सुरक्षा को ताक पर रखकर आतंकवादियों का पीछा किया। आतंकवादियों की एक गोली पीछे से लगी और वे गंभीर रूप से घायल हुए। अंत में 28 नवंबर 2008 को उनकी मृत्यु हो गई। पूरे सैनिक सम्मान के साथ बैंगलोर में उनके अंतिम संस्कार किए गए। उनकी बहादुरी के लिए 26 जनवरी 2009 को उन्हें मरणोपरांत 'अशोक चक्र' से सम्मानित किया गया।

- (2) विद्यार्थी स्वयं करें।

## अभ्यास - 2

### (1) ◆ यातायात सप्ताह

(अ)



(ब)

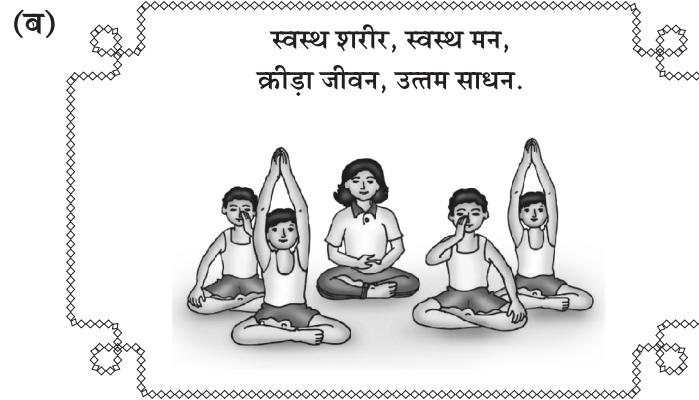
#### ‘सड़क सुरक्षा के नारे

- शॉर्ट कट का ना करो चुनाव क्योंकि इससे जीवन हो सकता है शॉर्ट।
- जन भली कि गाड़ी भली, सड़क कहती सुरक्षा भली।
- सुरक्षा के नियमों का करो सम्मान, न होगी दुर्घटना, न होंगे परेशान
- पहने हेल्मेट, रहे सुरक्षित पहने सीट बेल्ट, रहे सुरक्षित।

◆ छात्र इसी प्रकार से अन्य पोस्टर बना सकते हैं।

◆ क्रीड़ा सप्ताह

(अ)



(ब) (1) सरल वाक्य - बाई और दाई ओर सड़क है।

भारत देश राष्ट्रीय एकात्मता का उत्तम उदाहरण है। पानी का बरसना उत्तम है।

(2) मिश्र वाक्य - सड़क की बाई और घर है वहाँ दाई ओर कुआँ है।

घर की बाई और कुआँ है वहाँ दाई ओर सड़क है।

(3) संयुक्त वाक्य - यह रहा घर और यह रहा कुआँ।

घर की बाई ओर कुआँ है।

(3) (1) सामान्य वर्तमानकाल - रमेश पुस्तक पढ़ता है।

(2) अपूर्ण वर्तमानकाल - रमेश पुस्तक पढ़ रहा है।

(3) पूर्ण वर्तमानकाल - रमेश ने पुस्तक पढ़ी है।

(4) सामान्य भूतकाल - रमेश ने पुस्तक पढ़ी।

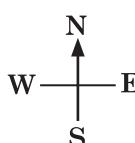
(5) अपूर्ण भूतकाल - रमेश पुस्तक पढ़ रहा था।

(6) पूर्ण भूतकाल - रमेश ने पुस्तक पढ़ी थी।

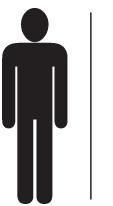
(7) सामान्य भविष्यकाल - रमेश पुस्तक पढ़ेगा।

(4)

			
पाठशाला	दवाई की दुकान	रुपया	डॉलर

			
जिब्रा क्रॉसिंग	यातायात का सिग्नल	पेय जल	दिशा दर्शक चिह्न

			
संगीत	न्यायालय	खुशी	अपाहिजों के लिए

		
प्रसाधनालय	वाय फाय	खतरा

### अभ्यास - 3

#### भालू ने दिया दोस्ती का सबक

अमित और सुमित नाम के दो मित्र थे। दोनों साथ में व्यवसाय करते थे। काम के सिलसिले में कई बार दोनों को साथ में यात्रा भी करनी पड़ती थी। एक बार वे दोनों रामगढ़ से सुजानगढ़ जा रहे थे। रास्ते में जंगल पड़ता था। दोषहर का समय था। बगल में पानी का झरना देखा तो दोनों पेड़ की छाया में रोटी खाने बैठ गए।

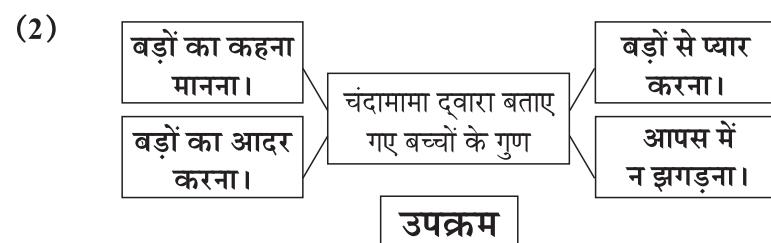
तभी अचानक उन्होंने एक भालू को अपनी तरफ आते देखा। अमित ने सुमित से कहा, “भाग जल्दी, भालू आया। सुमित भी दौड़ने लगा। लेकिन भालू से बचने के लिए इतना काफी नहीं था। अमित ने सुमित से कहा, ‘पेड़ पे चढ़ो। भालू पेड़ पर नहीं आएगा।’” पर सुमित को तो पेड़ पर चढ़ना ही नहीं आता था। अमित को वह कहता रहा, “पहले मुझे चढ़ाओ फिर तुम जल्दी से चढ़ जाना।” पर घबराहट में उसने मित्र की बात को अनसुना कर दिया।

सुमित ने सोचा, ‘अब मौत निश्चित है।’ डर के मारे उसके पैर भी जमीन से उठ नहीं रहे थे। वह वहीं जमीन पर लेट गया। भालू नजदीक आया तो उसने साँस रोक ली। भालू ने उसे सूँघा और मरा हुआ समझकर छोड़ दिया और आगे चला गया। अमित पेड़ पर छिपा यह तमाशा देख रहा था। उसकी समझ में कुछ भी नहीं आया। भालू दूर चला गया तब वह पेड़ से नीचे उतरा। उसने सुमित से पूछा, “भाई, भालू तुम्हारे कान में क्या कहकर गया?” सुमित ने कहा, “स्वार्थी मित्र से दूर रहो।” अमित बहुत लज्जित हुआ। उसने सुमित से माफी माँगी। पर सुमित ने उससे मित्रता तोड़ दी। सचमुच, मुसीबत के समय में ही सच्चे मित्र की पहचान होती है।

**सीख - स्वार्थी मित्रों से दूर रहना चाहिए।**

## पुनरावर्तन - 2

(1)	शब्द	पंचमाक्षर	उसी वर्ग के अन्य शब्द
	पंकज	ड	कंगन, संघ, लंका
	चंचल	ज्	झंझा, जंजाल, फ्रेंच
	ठंडा	ण्	डंडा, टंटा, छिंदोरा
	संत	न्	हिंदी, मंद, निबंध
	पेरांबूर	म्	परंपरा, संपादक, लंबा
	पंछी	ज्	पंचप्राण, संचय, संज्ञा
	बंदरगाह	न्	संतोष, पंथ, जंतर-मंतर
	उंग	ड	पंकज, मंगल, बंगाल



- (1) विद्यार्थी स्वयं कृती करें।
- (2) (अ) (1) किन लोगों को रक्तदान करना चाहिए?  
 (2) वैज्ञानिक युग में कौन सा दान श्रेष्ठ है?  
 (3) धर्म का पालन करने से किसकी प्राप्ति होती है?  
 (4) बीमार के प्राण बचाने के लिए हम क्या कर सकते हैं?
- (आ) (1) गाड़गे बाबा का पूरा नाम क्या था?  
 (2) गाड़गे बाबा कौन सा कार्य करते थे?  
 (3) गाँव के लोग गाड़गे बाबा को पैसे क्यों देते थे?  
 (4) गाड़गे बाबा ने पैसों का उपयोग किन कार्यों के लिए किया?

## (3) प्रथम सत्र : सौंदर्य प्रसाधन के प्रचार प्रसार हेतु विज्ञापन

चतुर्शतवर्ष!  
चतुर्शतवर्ष!!  
चतुर्शतवर्ष!!!

७ दिन में रंग निखारे  
झुर्रियाँ मिटाएँ

बालों को बनाए  
लंबे, घने, रेशमी, मुलायम

★ विश्वसनीय  
★ वाजीवी दाम

तो देर किस बात की

हमारा पता - ब्युटी पैलेस, सानपाड़ा, नवी मुंबई. दूरध्वनि - 40532323

## द्वितीय सत्र : क्रीड़ा महोत्सव

आंतरराष्ट्रीय

**KREEDA** महोत्सव

१०० मीटर, २०० मीटर दौड़  
एवं ४०० मीटर रिले दौड़ के लिए  
अपनी पाठशाला द्वारा आवेदन करें।



अंतिम तिथि - 15 जून, 2022

हमारा पता - अभिनय विद्यालय, पुणे।

- (4) सुभद्रा कुमारी चौहान को राष्ट्रीय वसंत की प्रथम कोकिला का बिरुद दिया गया था। क्योंकि झाँसी की रानी पर लिखी उनकी कविता जन-जन के कंठ का हार बनी थी। कविता के बोल हैं,

‘चमक उठी सन सत्तावन में  
वह तलवार पुरानी थी  
बुंदेले हर बोलें के मुँह  
हमने सुनी कहानी थी।



खूब लड़ी मरदानी वह तो  
झाँसी वाली रानी थी।

इनकी रचनाओं में ऐसी ऊर्जा है कि मरणासन व्यक्ति भी लड़ने को तैयार हो जाएगा। बीसवीं सदी की सर्वाधिक यशस्वी और प्रसिद्ध कवि-कवयित्रियों में वे अग्रणी हैं।

इनका जन्म 16 अगस्त 1904 को इलाहाबाद के निकट निहालपुर नामक गाँव में हुआ। उनकी प्रारंभिक शिक्षा गाँव में ही पिता की देख-रेख में हुई। 1919 में खंडवा के ठाकुर लक्ष्मण सिंह से विवाह हुआ और फिर वे जबलपुर आ गई। 1921 में गांधीजी के असहयोग आंदोलन में भाग लेने वाली वे पहली महिला थीं। आजादी की लड़ाई में दो बार वे जेल भी गईं। उनकी बेटी सुधा चौहान ने उनकी जीवनी तेज-से-तेज नामक पुस्तक में लिखी है। एक कार दुर्घटना में 15 फरवरी, 1948 को उनकी आकस्मिक मृत्यु हुई।

भारतीय तटरक्षक सेना ने 28 अप्रैल, 2006 में सुभद्राकुमारी जी की राष्ट्रीय भावना को सम्मानित करने के लिए अपने तटरक्षक जहाज को 'सुभद्राकुमारी चौहान, नाम दिया है। भारतीय डाकतार विभाग ने 6 अगस्त 1976 को सुभद्रा कुमारी चौहान के सम्मान में 25 पैसे का एक डाक-टिकट जारी किया।

कविता के साथ ही उनका कथा साहित्य भी समृद्ध है। 'बिखरे मोती' उनका पहला कथा संग्रह है इनकी कहानियों का मुख्य स्वर पारिवारिक, सामाजिक दृश्य ही है। 'उन्मादिनी' और 'सीधे साधे चित्र' उनके अन्य कहानी संग्रह हैं। उन्होंने कुल 46 कहानियाँ लिखीं। वे एक अत्यंत लोकप्रिय कथाकार के रूप में हिंदी साहित्य में प्रतिष्ठित हैं।

झाँसी की रानी, मेरा नया बचपन, यह कदंब का पेड़, तुकरा दो या घार करो, कोयल, पानी और धूप, बीरों का कैसा हो वसंत, झिलमिल तारे, मेरा जीवन, नीम, मुरझाया फूल, मेरे पथिक, समर्पण, अनोखा दान, व्याकुल चाह, आराधना, मेरा गीत, प्रतीक्षा, बिदाई, बालिका का परिचय, स्मृतियाँ आदि इनकी प्रसिद्ध कविताएँ हैं।

आज हम धर्मनिरपेक्ष समाज निर्माण का संकल्प लेते हैं लेकिन बहुत पहले सुभद्रा जी ने अपनी कविता में लिखा था,  
'मेरा मंदिर, मेरी मस्जिद, कावा काशी यह मेरी,  
पूजा-पाठ, ध्यान, जप-तप है, घट-घट वासी यह मेरी।  
प्रभु ईसा की क्षमा शीलता, नबी मुहम्मद का विश्वास,  
जीव दया जिन पर गौतम की, आओ देखे इसके पास।

इस तरह उन्होंने अपनी बालिका का परिचय दिया था। अपनी पाठशाला की पढ़ाई करते-करते ही उन्होंने कविता लिखना शुरू किया था। नौवीं कक्षा के बाद इनकी पढ़ाई भले ही छूट गई पर साहित्य सेवा नहीं छूटी। विवाहोपरांत पति ने भी उनकी प्रतिभा को पनपने के लिए उचित वातावरण देने का प्रयत्न किया।

उनकी मृत्यु के बाद जबलपुर वासियों ने नगरपालिका के प्रांगण में उनकी प्रतिमा लगवाई। उसके अनावरण के समय डॉ. रामकुमार वर्मा, कवि बच्चन, महादेवी वर्मा आदि उपस्थित थे। महादेवी जी ने कहा, 'नदियों का कोई स्मारक नहीं होता। दीपक की लौ को सोने से मढ़ दीजिए पर इससे क्या होगा? हम सुभद्रा के संदेश को दूर-दूर तक फैलाएँ और उसके महत्व को मानें; यही असली स्मारक है।

जय हिंद!

## General Science

### Topic 16 : Natural Resources

**Q.1. (A)** (1) Minerals that contain a high proportion of metal are called **ores**.  
(2) Magnetite is an ore of **iron**.  
(3) **Anthracite** is a type of coal of the highest grade.  
(4) **Bauxite** is the most important ore of aluminium.

**(B)** (1) The **silver** is classified in metal minerals which is a good conductor of electricity.  
(2) The main component of natural gas is **methane**.  
(3) Micro-organisms like **fungi** is used for production of antibiotics.  
(4) Shark and cod fish are used for producing edible oil rich in vitamin **A, D, E**.

**(C)** (1)-(d), (2)-(c), (3)-(b), (4)-(a).

**(D)** (1) Bauxite (others are non-metal minerals)  
(2) Diamond (others are metals)  
(3) Diamond (others are energy minerals)  
(4) Platinum (remaining are gems)  
(5) Mica (others are good conductors of electricity)

**(E)** (1) Bauxite      (2) Coal      (3)  $C_4H_{10}$   
(4) Cinchona      (5) Coal or mineral oil or natural gas

**(F)** (1) True      (2) True      (3) True  
(4) False      (5) True

**(G)** (1) Mineral oil      (2) Gangue      (3) Potash

**Q.2. (A)** (1) **Ores** : The minerals from which metals are extracted profitably and conveniently are called as ores.  
(2) **Iron ore** : Iron occurring in the impure state is called iron ore.

**(B)** (1) Millions of years ago, remains of plants and animals got buried into the earth. They were converted into fossil fuels due to the tremendous pressure of the earth's layers above them and the heat inside. As this process takes millions of years to occur, the deposits of fossil fuels are limited.

(2) The natural materials on the earth in which metal or its compounds occur are called minerals. The minerals from which metals may be extracted profitably are called ores. All materials cannot be ores as they contain unwanted substances other than metals. But, ores can be minerals as metals can be extracted commercially. Hence, all ores are minerals but all minerals are not ores.

(3) Natural gas can be easily transported from its main sources using pipes over long distances. It lights up quickly and its burning can be easily controlled. On burning, it does not leave any solid waste behind. Other pollutants are also not produced when natural gas is used. Hence, natural gas is an eco-friendly fuel.

(4) Millions of years ago, forests got buried underground as a result of certain natural events. Layers of soil kept getting deposited over them. The very high pressure from above and the heat from the earth's interior, slowly transformed the buried plants into fuel. Coal was thus formed from the remains of those plants. Hence, coal is said to be a fossil fuel.

**(C) (1)**

	<b>Minerals</b>		<b>Ores</b>
<b>(i)</b>	Naturally occurring substances of metal present in the earth's crust are called minerals.	<b>(i)</b>	Minerals that contain a high proportion of metal are called ores.
<b>(ii)</b>	All minerals are not ores.	<b>(ii)</b>	All ores are essentially minerals.
<b>(iii)</b>	E.g., clay is the mineral of aluminium.	<b>(iii)</b>	E.g., bauxite is the main ore of aluminium.

**(2)**

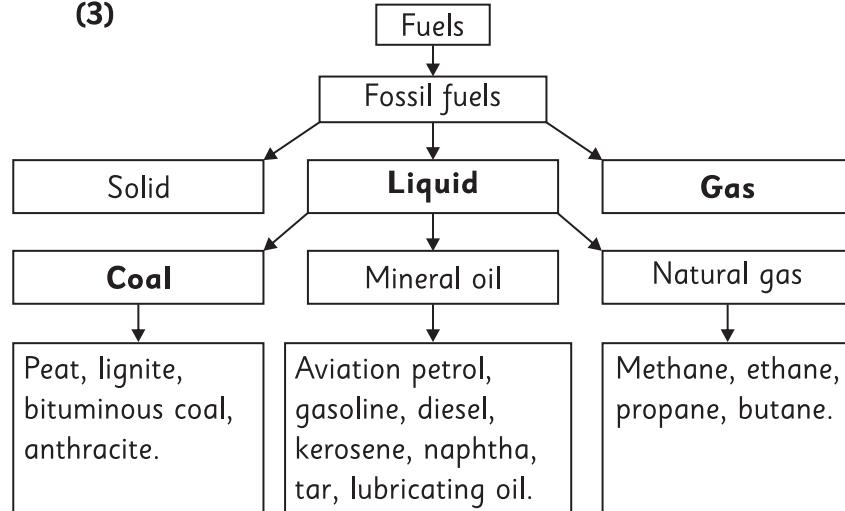
	<b>Compressed Natural Gas (CNG)</b>		<b>Liquified Petroleum Gas (LPG)</b>
<b>(i)</b>	Major component of CNG is methane.	<b>(i)</b>	It is composed of propane or butane and isobutane.
<b>(ii)</b>	It is lighter than air.	<b>(ii)</b>	It is heavier than air.
<b>(iii)</b>	It serves as an alternative to gasoline in automobiles.	<b>(iii)</b>	It is used for cooking and heating purpose in homes, industries and even as automobile fuel.
<b>(iv)</b>	It releases minimal greenhouse gas.	<b>(iv)</b>	It releases greenhouse gases like $\text{CO}_2$ .
<b>(v)</b>	It easily gets dispersed, causing minimal risk of ignition.	<b>(v)</b>	It is difficult to get dispersed, therefore causing risk of fire.

**(D) (1)** A fuel is a substance that produces or generates energy on burning. The natural resources we use as fuel are coal, mineral oil and natural gas.

The characteristics of CNG are :

- It catches fire easily.
- No solid waste remains after combustion.
- Carbon dioxide and water are formed in small quantities.
- Other pollutants are not produced.
- It can be transported easily.
- Combustion can be easily controlled.

**(3)**



- Large scale cutting of trees can lead to deforestation.
- Plants create oxygen and absorb greenhouse gases, the destruction of trees may lead to global warming.
- Cutting trees can result in the loss of habitat for animal species which can harm the ecosystem.
- Clearing of forests loosens the soil cover or loosens the ground and causes landslide or flood.
- Cutting down the trees will affect the rainfall and also create an unstable atmosphere.

(vi) The loss of trees and other vegetation can cause climate change, desertification, soil erosion, fewer crops, flooding, increased greenhouse gases in the atmosphere.

(5) The different types of coal are peat, lignite (brown coal), bituminous coal and anthracite (highest grade).

**Uses of coal:**

- (i) Coal is used as fuel.
- (ii) It is used in thermal power plants as well as to run boilers and railway engines.
- (iii) It is used as fuel for cooking and for baking bricks in kilns on a large scale.
- (iv) The gaseous fuels, producer gas and water gas, are obtained from coal.
- (v) Coal as an energy resource, contributes greatly to industrial development.

(6) Petroleum or mineral oil is called liquid gold because of its high price and value and its economic need by all the countries worldwide. Petroleum is present in abundant quantity in some regions. The people over there are engaged in petroleum factories and industries. It is mainly the source of income for most of the people. Hence, petroleum provides most of the economic wealth to the people of some regions. So, it is considered as liquid gold.

(7) Coal is called 'black gold' because of its large number of applications in different fields, especially in the generation of electricity and moreover it is also used as fuel. Hence, because of its high price and value, and its economic need by all the countries worldwide, coal is called 'black gold'.

(8) The reserves of fossil fuels, namely mineral resources are limited and the demand is increasing. There is a definite

amount of fossil fuels, i.e. minerals available on the earth. Owing to the tremendous increase in the consumption of these mineral resources, it is feared that they would be depleted in the near future causing an energy crisis.

(9) The resources which are obtained from nature are called natural resources. Examples of natural resources are coal, water, wood, cotton, minerals, soil, etc.

(10) Minerals oil and natural gas were formed in the course of millions of years over time, the marine organisms die and are decomposed by microbes. They fall at the bottom of the ocean and get deposited there. This puts pressure on the layers at the bottom to convert hydrocarbons into fossil fuels. With time, layers of rocks, soils and sand are created on top of them.

(11) The extensive area of land covered by a variety of plants is called a forest. Forests are a natural habitat of plants, animals, and microbes. Forests provide us with various useful things like firewood, honey, medicinal plants, biofertilizers, etc. They also protect the environment, reduce soil erosion, control floods, and help maintain ecological balance.

(12) If rubber is not available, we will have to live without rubber toys, footwear, erasers, rubber bands, and other items.

(13) Yes, the minerals that can be found inside the earth can also be found in seas and on seabeds. The seabed is rich in minerals such as chromium, copper, iron, manganese, sulphur, zinc, lead, etc.

(14) The two important stages in the process of obtaining metals from ores are extraction and purification.

(15) A metal mineral is a mineral that contains metallic elements in the chemical formula. e.g. Gold, iron, copper, etc.

A non-metal mineral is one that does not contain metallic elements in its formula. e.g. Diamond, mica, gypsum, etc.

**Q.3. (1) (a) Mineral resources :** Mineral resources are elements, chemical compounds, minerals or rocks, concentrated in such a form which can be extracted to obtain a usable commodity.

There are many types of mineral resources depending on their nature, uses, processing and production.

**(I) They can be classified according to their properties.**

(i) Metallic minerals (ii) Non-metallic minerals

(iii) Energy minerals.

(i) **Metallic minerals :** These minerals contain one or more metallic elements. They occur in rare, naturally formed concentrations known as mineral deposits. E.g., Iron, gold, silver, bauxite, manganese, platinum, etc.

(ii) **Non-metallic minerals :** The mineral reserves consist of stone quarries, clay and sand pits. They occur in the form of chemical and fertilizer mineral deposits, salt deposits, natural gemstones, etc. E.g., Mica, diamond, graphite, feldspar, sapphire, gypsum, etc.

(iii) **Energy minerals :** It includes coal, mineral oil, natural gas that are used to produce electricity, fuel for transportation, heating for homes and offices and in the manufacture of plastics.

**(II) Minerals on the basis of use.**

(i) **Iron :** The most commonly used iron bearing minerals contain iron compound such as hematite, magnetite, limonite and siderite. Iron ore is used to make variety of articles from pins to heavy machinery. E.g., farming implements, rails of railway track.

(ii) **Manganese :** Occurs in the form of carbonate, silicate and oxide. Compounds of manganese are used in the preparation of medicines and for giving a pink tinge to glass. It is also used in electrical appliances.

(iii) **Aluminium :** It is the most abundant metallic mineral in the earth's crust. Bauxite ore is the main source of aluminium. Aluminium is a very good conductor of electricity and heat. It is used in aeroplanes, transport vehicles and to make electric wires.

(iv) **Copper :** It is a metallic mineral found in impure state in the vicinity of iron and other minerals. It is a very good conductor of electricity and hence used to make electric wires as well as in radios, telephones, vehicles and for making kitchen utensils and statues.

(v) **Mica :** They are silicate minerals known as sheet silicates because they form in distinct layers. It is used in ayurvedic medicines, dyes, electric machines and equipments, etc.

**(III) Miscellaneous uses of minerals :**

Some important minerals like diamond, ruby, sapphire, emerald, jade, zircon are used as gems. Gems have a great demand.

**(b) Forest resources :**

“Forest resources” means the various types of vegetation normally growing on forest land, regions, the associated harvested products and the associated residue, including but not limited to bush, grass, logs, saplings, seedlings and trees.

**Protective functions of forest :**

(i) It reduces the velocity of water flowing over the land.

- (ii) To prevent soil erosion.
- (iii) To help percolation of water into the ground.
- (iv) To control flood.
- (v) To reduce the rate of evaporation.
- (vi) To protect wild life.
- (vii) To maintain the balance of atmospheric gases.

**Productive functions of forest :** Many products are extracted from forests. Medicinal plants for treatment of various diseases, wood for timber and fuel wood to cook food, etc. Forest wealth includes fibres, paper, rubber, gum and aromatic substances.

**Medicinal plants :** Medicinal plants include, adulsa, bel, neem, periwinkle, cinnamon, cinchona, ashwagandha, shatavari. They are used in the treatment of cough-cold, diarrhoea, fever, nausea, malaria and cancer.

**Wood :** Firewood trees like teak, mahogany, neem, acacia, subabul are strong and durable. Wood is used for making furniture, farming implements and various articles used in construction work.

**Forest wealth :** We get essential oil from lemon grass, vanilla, kewada, vetiver (Khus) and eucalyptus. Sandalwood oil and eucalyptus oil are used for making soaps, cosmetics and incense sticks. In addition we get various fruits, bulbs and roots, honey, sealing wax, catechu, dyes, etc., from forest.

**(c) Ocean resources :**

It is one of the earth's most valuable natural resources, it provides a treasured source of recreation of humans. It is mined for minerals. (e.g. sodium, potassium, thorium, etc.) and drilled for crude oil, such as mineral oil and natural gas. We get

many types of resources such as gems, conches, shells and pearls. Fishes like pomfret, shrimps and prawns are used as sea food.

**(I) Mineral resources from ocean :**

- (i) Thorium - used in the production of atomic energy.
- (ii) Magnesium - used in the flash bulb of camera.
- (iii) Potassium - The main ingredient in production of soap, glass, fertilizer.
- (iv) Sodium - used in the production of cloth and paper.
- (v) Sulphate - used in making artificial silk.

**(II) Bio-resources in ocean :**

- (i) Fishes like pomfret, starfish, shrimps, prawns are sources of proteins and vitamins mainly used as sea food.
- (ii) Dried shrimp, bombay duck powder-used as poultry food and as a good manure.
- (iii) Shells-used in the preparation of medicines, ornaments and decorative articles.
- (iv) Fungi - used for the production of antibiotics.
- (v) Shark and cod fish - used for producing edible oil rich in vitamin A, D and E.
- (vi) Sea cucumbers - used as medicine for treating cancer and tumours.

**(2)** Fossil fuels are sources of energy that are formed from the accumulated or preserved remains of living organisms that were buried millions of years ago. Pressure, heat, and time allow the organic matter to transform into one of the three major types of fossil fuel.

The major types of fossil fuels are coal, mineral oil and natural gas.

**(3)** Aviation petrol, gasoline, diesel, kerosene, naphtha, lubricating oil, tar, motor oil, asphalt, etc. are the components we obtain from mineral oil.

(4) (i) Fruits, vegetables, bulbs, roots, honey, sealing wax, catechu, dyes, etc.

(ii) Timber and firewood from trees like teak, mahogany, neem, acacia, subabul (wood for making furniture and other articles in construction work).

(iii) Turpentine, latex (used in manufacturing of rubber).

(iv) Spices, resin and gum, fibres, paper and aromatic substances.

(v) Essential oils from lemon grass, vanilla, kewada, vetiver (khus) and eucalyptus. Sandalwood and oil of eucalyptus used for making soaps, cosmetics and incense sticks.

(vi) Medicinal plants like adulsa, bel, neem, periwinkle, cinnamon, cinchona - used for treatment of cough, cold, diarrhoea, fever, nausea, malaria and cancer.

(5) (i) **Iron**

Magnetite, hematite, limonite and siderite are ores of iron which form the source of mineral iron. It is used to make a variety of articles from pins to heavy industry. For e.g., farming implements, rails of railway tracks, etc.

(ii) **Manganese**

It occurs in the form of carbonate, silicate and oxide. Compounds of manganese are used in the preparation of medicines and giving a pink tinge to glass.

(iii) **Bauxite**

It is an important ore of aluminium. It contains 55% aluminium. It is used mainly in aeroplanes, transport vehicles and to make electric wires.

(iv) **Copper**

It is found in the impure state in the vicinity of iron and other minerals. It is used to make electric wires

as well as in radios, telephones, vehicles and for making kitchen utensils and statues.

(v) **Mica**

Mica is found in the form of silicate available in the thickness of its layers. It is used in ayurvedic medicines, dyes, electric machines and equipment, wireless communication equipments, etc.

(6) The natural resources of a country or nation can contribute significantly to its economic development through increasing the production and manufacturing, securing energy supply, increasing export avenues and reducing the cost of local business and households.

Forests are important renewable natural resources that contribute substantially to economic development. They provide raw material to a number of important industries like paper, match box, newsprint, rayon, furniture, construction, tanning, etc.

A nation with large deposits of minerals is provided with a sound base for the development of a large number of industries like iron, steel, petrochemicals, cement, pottery etc. The discovery of varied mineral deposits provides employment to a large number of people living in that area. Hence, the economic condition of the country can be improved.

Minerals and bio-resources from oceans have a tremendous impact on the nation's economy. The ocean is also valued for the natural resources that lie beneath the ocean floor. These are large scale reserves of mineral oil and natural gas at the bottom of sea.

(7) The explosive rate at which population of our country is growing is the main reason for the decline in the biodiversity. This rising temperature of the earth is dangerous for some rare and endangered species of

plants and animals. Global warming produces large scale changes in the natural habitat of the forest. Environmental pollution increases the temperature of the earth. As a result, there is decline in the diversity of plants and animals. When deforestation occurs, animals lose their habitat due to which they have to adapt to new environment. If they cannot adapt, they become extinct. The housing and industrial development has caused more and more demand for land. This has resulted in clearing of the forests. Some animals are hunted and therefore this diversity is dwindling. All these factors cause decline in diversity of plants and animals in the forest.

(8) We use fuels such as petrol, diesel, gasoline, in running vehicles. These fuels are called fossil fuels. It takes millions of years for the formation of fossil fuels. There is a danger that excessive usage of fuel will lead to their early depletion. There is likelihood of these reserves getting exhausted leading to energy crisis. Usage of fuel in vehicles such as gasoline or diesel also contributes to a number of the environmental problems such as air pollution, global climate changes, etc. Hence, we should prevent the wastage of fuel used for vehicles.

(9) The various items included under ocean resources category can be categorized as :

#### **Bioresources**

(i) **Fishes and prawns** : Sources of proteins and vitamins.

(ii) **Shark and cod fish** : Used in the production of oil rich in vitamin A, D, and E.

#### **Mineral resources:**

(i) **Potassium** : Production of soap, fertilizers, and glass.

(ii) **Sulphur** : Vulcanization of rubber.

(iii) **Thorium** : Production of atomic energy.

(iv) **Sodium** : Production of paper and cloth.

(10) The following steps are taken for protection and conservation of natural resources :

Water	Forests	Minerals
Turn off the water when not in use. Practising rainwater, harvesting and drip irrigation. Washing machines should be used only when loaded with full capacity.	Prohibition on deforestation, discouraging excessive grazing in forests, prevention of forest fires.	Recycling of metals, using scrap metals, and substitute, using mineral resources in a planned and sustainable way.

#### **The various medicinal plants that can be grown in the school premises and near your house are :**

(i) Tulsi, Adulsa – For cough and cold

(ii) Bel – For diarrhoea

(iii) Cinnamon – Cold, digestion, diabetes

(iv) Eucalyptus – Eucalyptus oil is used in the treatment of blocked nose, and throat infections.

(v) Neem – Treatment of fever and cold.

These plants are easy to grow and maintain. They have natural ingredients used for treating ailments and diseases.

## Topic 17 : Effects of Light

**Q.1. (A)** (1) When the beams from the headlights of a car fall on an object in the night, the shadows called umbra and penumbra can be seen.  
(2) Earth appears to be bluish in colour from space.  
(3) Blue colour in the sun is scattered the most by fine particles.  
(4) Eclipse occurs when the sun, the moon and the earth come in a straight line.  
(5) The day on which the sun reaches exactly overhead is called the zero shadow day.  
(6) During a lunar eclipse, the shadow of the earth falls on the moon.  
(7) During a solar eclipse, the shadow of the moon falls on the earth.  
(8) Various shades of the colour are seen in the sky at sunrise and sunset due to scattering of light.

**(B)** (1) Zero shadow day occurs in summer.  
(2) If the shadow of earth falls on the entire moon, it is called total lunar eclipse.  
(3) The sky appears blue in colour because the blue light is scattered the most.  
(4) During solar eclipse the moon comes between the sun and the earth.

**(C)** (1) False (2) False (3) False

**Q.2.** (1) The colours in the band of light seen on the other side of the prism when sunrays pass through it are violet, indigo, blue, green, yellow, orange and red.  
(2) When a ray of light is incident on extremely small particles like dust particles and other tiny particles in the

air, the particles deflect the light in different directions. This phenomenon is called scattering of light.

(3) Yes. At noon on zero shadow day, the sun reaches exactly overhead. So, the shadow completely disappears on that day.  
(4) If there was no atmosphere, the sky would have appeared dark during the day and the sun would be directly seen.  
(5) Eclipses are examples of formation of shadow in nature. The moon revolves around the earth and the earth along with the moon revolves around the sun. When the sun, the moon and the earth come in a straight line, the light from the sun is obstructed by the moon or the earth and they cast their shadow. These shadows form eclipses.

**Q.3.** (1) (i) Sunlight is scattered by the molecules of gases like nitrogen, oxygen in the atmosphere.  
(ii) The blue colour in the sunlight is scattered the most, therefore the sky appears to be blue when observed from the earth.  
(2) (i) There is no atmosphere in space.  
(ii) So scattering of light does not take place there.  
(iii) Hence, space beyond the earth's atmosphere appears dark.  
(3) (i) When a shadow is cast by an extended source of light, two parts of the shadow are seen.  
(ii) The dark part is called the Umbra and the fainter part is called the Penumbra.  
(iii) Sun is an extended source of light.  
(iv) When we sit under the shade, the shade obstructs the light coming from the sun and forms a dark part called the Umbra.  
(v) But the Penumbra region of the shadow receives

some amount of light from the sun.

(vi) Hence, we are able to read while sitting in the shade.

**(4)** (i) During a solar eclipse, ultraviolet rays which are harmful to us reach the earth.

(ii) Also, the direct rays of the sun are very strong and they can cause damage to our eyes.

(iii) Hence, solar eclipse should never be watched with the naked eye.

**Q.4. (1)**

	<b>Point sources of light</b>	<b>Extended sources of light</b>
<b>(i)</b>	It is a source of light in which the rays of light emerge from a very small hole or a very small portion of the body.	<b>(i)</b> It is a source of light in which the rays of light come out from all the points on the surface of the source and not through a fine point.
<b>(ii)</b>	The shadow obtained by a point source of light has only umbra, the dark part of the shadow.	<b>(ii)</b> The shadow obtained by an extended source will have two parts, the dark part called the umbra and also the faint part called the penumbra.
<b>(iii)</b>	<b>For example :</b> If light from torch, bulb or sunlight is allowed to pass through a slit or tiny hole in a cardboard it acts as a point source of light.	<b>(iii)</b> <b>For example :</b> Sunlight, light from a bulb or from a torch act as extended sources of light.

**(2)**

	<b>Umbra</b>	<b>Penumbra</b>
<b>(i)</b>	Umbra is the dark part of the shadow which is formed by an object because the light is totally blocked by it.	<b>(i)</b> Penumbra is the faint part of the shadow which receives some light since the object only partially blocks the light falling on it.
<b>(ii)</b>	Umbra can be obtained by a point source as well as an extended source of light, incident on an opaque object.	<b>(ii)</b> Penumbra can be obtained only when an opaque object is placed in the path of an extended source of light.
<b>(iii)</b>	Umbra becomes smaller in size as the screen moves away from the object.	<b>(iii)</b> Penumbra increases in size and becomes fainter as the screen moves away from the object.

**Q.5. (A) (1)** Examples of scattering of light are :

- (i) Headlight beams are visible when we drive through a thick fog.
- (ii) The dust particles are seen in a beam of sunlight entering the house through a small window.
- (iii) We see a variety of shades of colours in the early morning and evening sky.
- (iv) Sky appears to be blue during the day.

**(2)**

- (i) If an opaque object is placed in the path of a light source, light does not reach the space behind the opaque object. This part remains dark and this dark part is called the shadow of the object.
- (ii) The shadow of an object is formed only when light does not pass through the object.

**(3)** (i) The nature of the shadow formed by an extended source is that it will have two parts.  
(ii) The faint part is called the penumbra and the dark part is called the umbra.

**(4)** (i) The laser beam will be scattered by the tiny particles of the gases released by the lighted incense stick.  
(ii) These scattered rays enter our eyes and hence the laser beam will be seen if it passes through a glass box which contains a lighted incense stick.

**(5)** (i) When a small object is placed between an extended source of light and screen, its shadow is cast on the screen, having umbra and penumbra.  
(ii) But as the screen moves away from the object, the umbra become smaller and smaller and at a certain point it disappears.  
(iii) When a bird flies high in the sky, the sun acts as an extended source of light, the earth as the screen, which is very far away from the object, that is the bird. So, the umbra region of the shadow becomes so small that it disappears.  
(iv) Therefore, the shadow of a bird flying high is not seen on the earth.

**(6)** (i) Light emerging from a fine point, such as a tiny hole, acts as a point source.  
(ii) When light from a point source falls on an opaque object, it is completely obstructed by the object to form a dark shadow or the umbra.  
(iii) Since no amount of light passes above or below the opaque object, the fainter part of

the shadow, the penumbra, is not obtained from a point source.

**(7)** An eclipse is a natural phenomenon and many superstitions are connected to eclipses which are still prevalent in the society. In order to remove misconceptions about eclipses, following measures can be taken :

(i) Making people aware of the fact that eclipses are natural phenomena, by explaining the science behind the occurrence of the eclipses.  
(ii) Making people actually observe the eclipse, by giving them proper instructions or precautions to be taken while observing eclipses, especially the solar eclipse.

**(8)** (i) The day on which the sun reaches exactly overhead is called the zero shadow day.  
(ii) On this day, at noon, the shadows completely disappear.  
(iii) This event can only be seen in the region between the Tropic of Cancer ( $23.5^{\circ}$  N) and Tropic of Capricorn ( $23.5^{\circ}$  S).  
(iv) It occurs in summer on different days in different places between the Tropic of Cancer and Tropic of Capricorn.

**(B)** Sun is an important source of energy for all living things. Plants prepare their own food in the presence of sunlight by a process called photosynthesis. If the sun did not rise, plants will not be able to carry out photosynthesis, which in turn will affect all the living things on earth, as all living things depend directly or indirectly on plants for food. We are able to see things around us during the daytime because of sunlight. If sun did not rise, there will be total darkness everywhere and it will become very difficult for us to carry out any of the activities and life will become miserable without sunlight.

**(C)** The moon revolves around the earth, and the earth along with the moon, revolves around the sun. When the sun, the moon and the earth come in a straight line, an eclipse is said to have taken place. There are two kinds of eclipses, solar eclipse and lunar eclipse.

**(i) Solar eclipse :**

When the moon comes between the sun and the earth, a shadow of the moon is cast on the earth and the sun cannot be seen from the part in the shadow. This is called a solar eclipse. A solar eclipse is seen only on a new moon day. Sometimes, the solar disc is completely covered by the moon. This is called the total solar eclipse. When the solar disc is not covered fully by the moon, then it is called partial solar eclipse.

**(ii) Lunar eclipse :**

When the earth comes between the sun and the moon, a shadow of the earth is cast on the moon and a part of the moon is covered. This is called the lunar eclipse. A lunar eclipse is seen only on a full moon night. If the whole moon comes in the shadow of the earth, it is a total lunar eclipse. When the shadow of the earth is cast only on a part of the moon, it is a partial lunar eclipse.

## Topic 18 : Sound : Production of Sound

**Q.1. (A)**

- (1) Sound is generated by the rhythmic **vibration** of any object.
- (2) Sound needs some **medium** to travel.
- (3) Sound from an object can be heard as long as it **vibrates**.
- (4) The frequency of sound is measured in **Hertz**.
- (5) **Frequency** is the number of oscillations occurring in one second.

**(6)** If **intensity** of sound is decreased, its loudness also decreases.

**(7)** A medium is necessary for **propagation** of sound.

**(8)** Frequency of infrasonic sound is less than **20 Hz**.

**(9)** The **decibel** is the unit for measuring sound level.

**(10)** SONAR stands for **Sound Navigation And Ranging**.

**(B) (1)** Sound can travel through **all of these**.

**(2)** The maximum distance that an oscillator moves from its original position is called **amplitude**.

**(3)** The time period of oscillations depends on the **length** of the pendulum.

**(4)** The intensity of the sound is proportional to the square of the **amplitude** of vibration.

**(5)** If the amplitude is doubled, the intensity of sound **becomes four times**.

**(C) (1)** False **(2)** True

**(D) (1)** Infrasonic sound **(2)** Hz **(3)** 130 dB  
**(4)** sec. **(5)** 70 dB

**(E)** (a)-(3), (b)-(4), (c)-(5), (d)-(2), (e)-(1).

**(F) (1)** Oscillatory motion **(2)** An oscillator  
**(3)** Ultrasonic sound

**Q.2. (1)** **Time period of oscillation** : The time required by an oscillator to complete one oscillation is called the time period of oscillation.

**(2)** **Frequency** : The number of oscillations occurring in one second is called frequency.

**(3)** **Frequency of oscillation** : The number of oscillations completed by an oscillation in one second is called the frequency of oscillation (n).

**(4) Periodic motion :** Motion that is repeated again and again at fixed intervals of time is called periodic motion.

**(5) Oscillatory motion :** The back and forth motion of an object on either side of the central position is called oscillatory motion.

**(6) Amplitude :** The maximum displacement or distance moved by the vibrating particles of a sound wave is called amplitude.

**Q.3. (1)**

	<b>Audible sound</b>	<b>Ultrasonic sound</b>
<b>(i)</b>	Frequency of the audible sound is between 20 Hz and 20,000 Hz.	<b>(i)</b> Frequency of ultrasonic sound is higher than 20,000 Hz.
<b>(ii)</b>	Human beings can only hear sound in the frequency range of audible sound.	<b>(ii)</b> Human beings cannot hear ultrasonic sound.

**(2)**

	<b>Infrasonic sound</b>	<b>Ultrasonic sound</b>
<b>(i)</b>	A sound with a frequency less than 20 Hz is called infrasonic sound.	<b>(i)</b> Frequency of ultrasonic sound is higher than 20,000 Hz.
<b>(ii)</b>	Animals like elephants, rhinoceros, whales can hear such sounds.	<b>(ii)</b> Ultrasonic sounds are heard by animals like bat, dolphin and dogs.

**Q.4. (1)** (i) Sound travels faster in solid than in gas and metal is an efficient conductor of sound.

(ii) By putting the ear to the rail of the track, sound of the train at a distance could be heard much before it was heard through the air.

(iii) Hence in earlier times, people used to listen for the arrival of a distant train by putting their ear to the rail.

**(2)** (i) Sound is produced by the vibration of an object.

(ii) Different objects vibrate with different frequencies and produce different types of sounds.

(iii) Sound in a tabla is produced due to the vibration of its diaphragm, whereas in sitar, sound is produced by the vibrating strings.

(iv) Since the diaphragm of the tabla and the strings of the sitar vibrate with different frequencies, sounds generated by the tabla and the sitar are different.

**(3)** (i) Sound requires a material medium for its propagation.

(ii) It cannot travel through vacuum.

(iii) On moon as there is no air, your friend will not be able to hear you call, if you were both on the moon.

**(4)** (i) If the frequency of vibration of an object is less than 20 per second, no sound is heard.

(ii) The movement of a mosquito's wings is so fast that its frequency of vibration is more than 20 per second, whereas that of the movement of our hands is much less than 20 per second.

(iii) So, we can hear the movement of a mosquito's wings but we cannot hear the movement of our hands.

**(5)** (i) Bats produce ultrasonic sound while flying in the dark.

(ii) This sound strikes the obstacles in their path and is reflected.

(iii) From the reflected sound, the bat comes to know about the obstacles in its surroundings and avoids collision with them.

(iv) Thus, bats can find their way in the dark.

**Q.6. (1)** Sound is produced by the rhythmic vibration of an object.  
**(2)** Intensity of the sound depends upon the amplitude of vibration. It is proportional to the square of the amplitude of vibration.  
For example, if the amplitude of vibration is doubled, the intensity of sound becomes four times.

**(3)** Roaring of a lion has low pitch, whereas the hum of a mosquito has higher pitch.  
**(4)** (i) When the length of the pendulum increases, the frequency of oscillation decreases, as the time period of oscillation of the pendulum increases with increase in the length of the pendulum.  
(ii) But if the amplitude of the oscillations made by the pendulum is increased or decreased, keeping its length constant, the frequency of the oscillating pendulum remains the same.

**(5) The uses of ultrasonic sound are :**

(i) To clean delicate ornaments and tiny parts of a watch.  
(ii) To observe internal organs of the body.  
(iii) To detect tumors in the brain.  
(iv) To detect faults in a metal.  
(v) In RADAR system.  
(vi) To kill certain microbes and insects.  
(vii) SONAR (Sound Navigation And Ranging) is used to locate the seabed or the position of a ship.  
**(6)** (i) When tension in the stretched string is increased, the frequency of vibrations of the string increases, so a shrill sound or a high pitch sound is produced.

(ii) When the tension in the stretched string is reduced, the frequency of vibrations of the string reduces and a less shrill sound or a low pitch sound is produced.

(iii) So, the pitch of the sound generated by a stretched string can be changed by either increasing or reducing the tension in the string.

**(7)** A sitar is a stringed musical instrument. The strings in the sitar help to produce higher or lower pitched sounds.  
**(8)** When two pupils in the class talk to each other, the sounds of two frequencies produced can be heard clearly. However, when all children talk to one another, the sound cannot be heard as there will be multiple frequencies generated.

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### Topic 19 : Properties of A Magnetic Field

**Q.1. (A)** (1) A freely suspended magnet comes to rest in north-south direction.  
(2) The alloys called nipermag and alnico are used for making industrial magnets.  
(3) A magnetic field can pass through solids and liquids.  
(4) The intensity of a magnetic field is indicated by the lines of force.  
(5) Like poles repel and unlike poles attract each other.  
(6) The real test of a magnetism is repulsion.  
**(B)** (1) Alnico is a magnetic alloy of aluminium, nickel and cobalt.

(2) **Aluminium** is not a magnetic substance.

(3) The scientist **William Gilbert** showed that earth itself is a gigantic magnet.

(4) Magnetic lines of forces **repel** each other.

(C) (a) 4, (b) 3, (c) 2, (d) -1

(D) (1) False (2) True (3) False (4) True

**Q.2. (A) (1) Magnetic field** : The region around a magnet where the magnetic force acts on an object is called a magnetic field.

**(2) Magnetic lines of force** : Imaginary connecting lines that run from the north pole to the south pole of a magnet and show the magnetic field around a magnet are called magnetic lines of force.

**(B) (1)**

	<b>Single touch method</b>	<b>Double touch method</b>
(i)	In this method, only one bar magnet is used to generate magnetism in a magnetic substance like a steel bar.	(i) In this method, two bar magnets are used to magnetise a steel bar.
(ii)	In single touch method the bar magnet is dragged over the steel bar from one end to the other end a number of times.	(ii) In double touch method the two bar magnets are dragged over the steel bar from the centre to either ends of the steel bar.
(iii)	The magnetism created by this method is of low strength and lasts for a short time.	(iii) The magnetism generated by this method lasts longer compared to that generated by the single touch method.

**(2)**

	<b>Gravitational force</b>	<b>Magnetic force</b>
(i)	The force with which earth attracts objects towards itself is called the gravitational force.	(i) The force with which a magnet attracts objects made up of iron, nickel and cobalt is called magnetic force.
(ii)	Gravitational force is always attractive.	(ii) Magnetic force is attractive as well as repulsive.

**(C) (1)** (i) A magnetic needle is mounted in a compass in such a way that it can rotate freely in the horizontal plane and it comes to rest in the north-south direction.

(ii) The north pole of the magnet points geographic north direction, whereas the south pole points to the geographic south direction.

(iii) Thus, a magnetic needle is used in a compass and helps to find the direction.

**(2)** (i) When a substance is brought near a magnet and if it gets attracted by the magnet, then either the substance is a magnetic substance or the unlike pole of another magnet.

(ii) So, by attraction it cannot be decided whether the substance is a magnet or a magnetic substance.

(iii) But when a substance brought near a magnet is repelled, it is certainly a magnet because a magnetic substance is not repelled by a magnet, only the like poles of magnets repel each other.

(iv) Thus, only by repulsion and not by attraction, it can be said that the substance is a magnet.

(v) Hence, repulsion is the real test for identifying a magnet.

**Q.3. (A)**

- (1) The materials to which objects made from iron, nickel and cobalt get attracted are called magnets.
- (2) Metals like iron, nickel and cobalt are used for making magnets.
- (3) A freely suspended magnet comes to rest in the north-south direction.
- (4) Magnetic force is a vector quantity.
- (5) The force with which a magnet attracts objects made up of iron, nickel and cobalt is called magnetic force.
- (6) The magnetic needle will show the north direction on the geographic north pole.
- (7) An electromagnet is a temporary magnet that behaves as a magnet when electric current is used to produce a magnetic field.
- (8) The substances used for making electromagnets are an iron nail, copper wire (about 1 metre), a battery and pins.

**(B) (1) Magnets are used in our houses and our surroundings in the following ways :**

- (i) Magnets are used in pin holders, magnetic door closers, refrigerators.
- (ii) In a pin holder, a thin round magnet is fitted in its mouth. When the pinholder is turned, the pins at its bottom stick to the inside of the mouth of the holder and the pins are easily picked out.
- (iii) Magnetic door closers, fitted in the shutters of cupboards, click shut tightly as they are brought close to the frame because the bottom of the shutter is fitted with a magnet and the

point exactly opposite to it on the frame is fitted with an iron strip.

- (iv) Doors of the refrigerators are fitted with magnet, which gets attracted to the metal on the refrigerators.
- (v) Magnets are also used for separating magnetic and non-magnetic substances from the scrap.
- (vi) A freely pivoted magnetic needle is used in magnetic compass to find geographical directions.

**(2) The characteristics of magnets are as follows :**

- (i) A freely suspended magnet comes to rest in the north-south direction.
- (ii) The magnetic force is concentrated at the two ends or poles of a magnet.
- (iii) The two poles of the magnet cannot be separated.
- (iv) A magnet can induce magnetism in a magnetic material.
- (v) Like poles of magnets repel each other and unlike poles of the magnets attract each other.

**(3)**

- (i) The earth itself is a gigantic magnet.
- (ii) The magnetic south pole of the earth is situated near its geographic north pole, and its magnetic north pole is situated near its geographic south pole.
- (iii) As unlike poles attract each other, when a magnet is freely suspended, the north pole of the magnet is attracted towards the earth's magnetic south pole and the south pole of the magnet get attracted towards the earth's magnetic north pole.

(iv) Therefore, a freely suspended magnet always settles in the north-south direction when it is freely suspended.

**(4)** (i) The earth itself is a gigantic magnet.  
(ii) The shape of the earth's magnetic field resembles that of a bar magnet.  
(iii) But the axis of earth's magnetic pole and geographical axis do not coincide.  
(iv) The axis of the earth's magnetic field is inclined at an angle of about  $15^\circ$  with the geographical axis.  
(v) Due to this, a freely suspended magnet makes an angle of about  $15^\circ$  with the geographical axis and points only approximately in the north-south direction at a place and does not settle parallel to the ground.

**(5)** (i) Magnetic force is effective around a magnet upto a certain distance.  
(ii) The region around the magnet where the magnetic force acts on an object is called the magnetic field.  
(iii) Due to the magnetic field of the magnet, the magnetic force acts on objects without direct contact.

**(6)** (i) Take an iron nail (10 cm long). Wind an insulated copper wire of 1 metre length over the iron nail.  
(ii) Connect the two ends of the wire to a source of electricity, that is, a cell or battery through a key.  
(iii) When the key is pressed, current flows through

the wire and the system starts behaving like a magnet.  
(iv) Here, the iron nail behaves like a magnet. If pins are brought near the iron nail, they get attracted to it.  
(v) When the key is opened, the flow of current stops through the coil and the iron nail loses its magnetism and the pins get detached from the iron nail.

**(7) The strength of an electromagnet depends on :**

(i) The number of turns in its coil: A stronger electromagnet can be obtained if the number of turns in the coils of an electromagnet is increased.  
(ii) The amount of current passed through the coil: If the amount of current in the coil is increased, a stronger electromagnet can be obtained.

**(8) Electromagnets are used at different places :**

(i) In electrical appliances such as electric bell, electric fan, electric motors etc.  
(ii) In lifting heavy loads of iron scrap, i.e. in a crane.  
(iii) To remove tiny particles of iron from wound.  
(iv) In the separation of iron ores (magnetic substances) from impurities (non-magnetic substances).  
(v) Electromagnets are also used in medical science to cure certain ailments.  
(vi) They are used for making strong permanent magnets.

**(9)** (i) When the property of the magnet of coming to

rest in the north-south direction was discovered, a magnet came to be used in the compass to find the directions.

- (ii) Chinese and Greek sailors were the first to make a mariner's compass using a magnet.
- (iii) At that time, a magnetic needle supported on a wooden block would be floated on water.
- (iv) As the needle was free to turn, it would come to rest in the north-south direction.

**(10)** (i) Place articles like iron, pins near the given articles. If they get attracted to any of the given articles, then that article will be a magnet.

(ii) We can also identify a magnet among the various articles by bringing a magnet near the given articles, if any of the given articles shows repulsion then that article will surely be a magnet as, only like poles of magnets show repulsion.

**(C) Magnetic field :** The region around a magnet where the magnetic force acts on an object is called magnetic field. The magnetic field around a magnet can be shown by means of magnetic lines of force. It was named by the British researcher, Michael Faraday. The intensity of magnetic field at a place can be determined by the number of lines of force that pass through a unit area at the place, perpendicular to that area. The intensity of a magnetic field is low where the lines of force are sparse, and the intensity is high where the lines of force are concentrated.

**Q.4.** (i) Take a small cardboard. Place a bar magnet at its centre.

(ii) Sprinkle iron filings on the cardboard around the magnet.

(iii) Gently tap the cardboard.

(iv) When the cardboard is gently tapped, the iron filings

arrange around the magnet in definite curved lines forming a symmetric pattern, going from one end of the bar magnet to the other.

(v) These curved lines are close to each other near the poles, whereas they are less crowded in the middle region around the magnet.

(vi) These lines are called the magnetic lines of force.

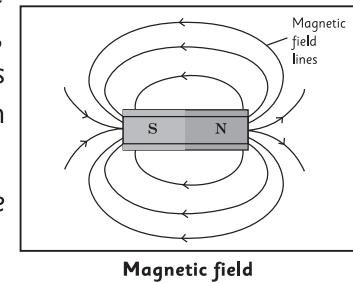
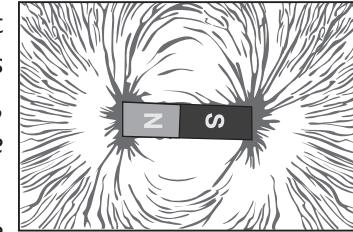
(vii) The magnetic field around a magnet can be shown by means of these magnetic lines of force.

(viii) The magnetic lines of force run from the north pole to the south pole, so the tangent at any point on a magnetic line of force gives the direction of the magnetic field at that point.

(ix) The intensity of the magnetic field at a place can be gauged by the number of lines of force that pass through a unit area at that place, perpendicular to that area.

(x) So, the intensity of a magnetic field will be low where the lines of force are sparse and the intensity will be high where the lines of force are concentrated.

(xi) Thus, with the help of magnetic lines of force, we can determine the direction and the strength of the magnetic field of a bar magnet.



## Topic 20 : In the World of Stars

**Q.1. (A)** (1) Stars are born out of nebulae.  
(2) Nebulae are clouds made up mainly of hydrogen gas and dirt particles.  
(3) Solar system is a tiny part of a galaxy called the Milky Way.  
(4) The continuous empty space between the spheres in the sky is called space.  
(5) The portion traversed by the moon in one day is called the Nakshatra.

**(B)** (1) When seen from a great distance, the sky seems to be touching the ground along a circle. This circle is called the horizon.  
(2) The ecliptic is used while defining the zodiac signs.  
(3) Classified according to seasons, one season will have nine nakshatras.  
(4) The rising of the sun in the east and its setting in the west is the apparent motion of the sun.

**(C)** (1)-(c), (2)-(d), (3)-(b), (4)-(a).  
**(D)** (1) False (2) True (3) True  
**(E)** (1) Binoculars and telescope  
(2) Saptarshi and Sharmishtha (3) Capricorn  
(4) Sirius (5) Saptarshi

**Q.2. (1)** **Meridian** : In astronomy, the great circle which passes through both the celestial poles and the observer's zenith and nadir is called a meridian.  
**(2)** **Nakshatra** : The portion transversed by the moon in one day is called a nakshatra.  
**(3)** **Raashi or Zodiac sign** : The ecliptic has been imagined

to be divided into 12 equal parts. Thus, each part subtends 30 degrees angle at the centre of the celestial sphere. Each of these parts is called a raashi or zodiac sign.

**(4)** **Space** : The continuous empty space between the spheres (planets, stars etc.) in the sky is called space.  
**(5)** **Sky** : The portion of the earth's atmosphere and the portion beyond that which can be seen in the form of a roof by our eyes while standing on the earth is called sky.

**Q.3. (1)** The earth rotates about its axis from west to east. Hence, the sun, the moon and the stars are seen to rise in the east and set in the west.  
(2) In reality, the sun does not move, but we perceive it as moving due to the motion of the earth around it. This motion of the sun is called its apparent motion. Thus the rising of the sun in the east and its setting in the west is called apparent motion.

**Q.4. (1)** On a clear, moonless night we can see thousands of stars in the sky. Some of these stars form beautiful patterns. A group of stars occupying a small portion of the celestial sphere is called constellation.  
(2) The following points should be considered before a sky watch.  
(i) The place selected for sky watching should be away from the city.  
(ii) The night chosen for sky watching should be a new moon light.  
(iii) Binoculars or telescopes should be used for sky watching.  
(iv) Pole star should be used as a reference point for sky watch.

(v) Sky watching should begin with stars in the west.

(3) Yes, it is wrong to say that the planets, stars and nakshatras affect human life, because astrology is not accepted by science. Science has proved that constituents of the solar system. e.g. planets, satellites and comets as also distant stars and constellations do not have any influence on human life. Man stepped on the moon in the twentieth (20<sup>th</sup>) century. He is expected to conquer Mars in the twenty first century. Hence, in this age of science, holding on to beliefs which are superstitious, has been proved to be wrong through numerous scientific tests. It is an unnecessary waste of one's time, energy and money. Hence, such issues should be approached with a scientific frame of mind.

(4) As observed from the northern hemisphere, the pole star is nearest to the north celestial pole of the sky and appears practically stationary from the earth. It lies almost along the axis of rotation of the earth. It can be used to find the direction. Hence, pole star should be used as reference point for sky watch.

(5) The constellations of Saptarshi and Sharmishtha are useful in locating the Pole star. Sharmishtha is made up of five bright stars which are distributed along the figure of letter M. The perpendicular bisector of the line joining the third and fourth stars goes towards the Pole star. The Pole star has Saptarshi on one side and Sharmishtha on the other. As Sharmishtha sets, Saptarshi rises. Thus, we can always use either one or the other as reference point on any given night.

(6) A galaxy is a huge collection of gas, dust and billions of stars and their solar systems. A galaxy is held together by gravity. Our galaxy, the Milky Way, also has a super - massive black hole in the middle.

It also includes many other celestial (heavenly) bodies such as clusters of stars, nebulae, clouds of gases, clouds of dust, dead stars, new born stars, etc.

(7) The different types of stars are - (i) Sun-like Stars e.g., stars like Alpha Centauri, Sirius (ii) Red Giant star (iii) Super Nova (iv) Binary (Twin Stars) (v) Variable Stars e.g., Polaris (Pole Star).

**Q.5. (1)** The sun, the moon and the stars are seen to rise in the east and set in the west because the earth rotates from west to east. The stars rise and set 4 minutes earlier every day. That is, if a star rises at 8 p.m. tonight, it will rise at 7:56 pm tomorrow. In one month the earth revolves  $1/12^{\text{th}}$  of the way around the sun. The same star will rise at 8 pm at the same time each year. The rotational period of the earth is 23 hours 56 minutes (approximately 24 hours).  $1/12^{\text{th}}$  of 24 is 2. Therefore, the star will rise 2 hours earlier after one month. The star will rise at 6 pm.

(2) (i) A constellation (nakshatra) is located behind the sun. However, it cannot be seen due to the bright sunlight.

(ii) The observer looking at the sun sees not only the sun but also a constellation behind the sun.

(iii) As the earth changes its position, a different constellation or zodiac sign or raashi appears behind the sun.

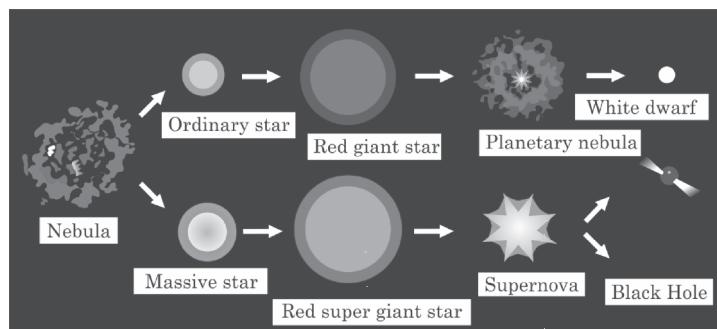
(iv) However, to the observer, it appears that the sun has moved from its position and is entering a new constellation (nakshatra).

(v) The sun entering the Mrug nakshatra means that the nakshatra is behind the sun.

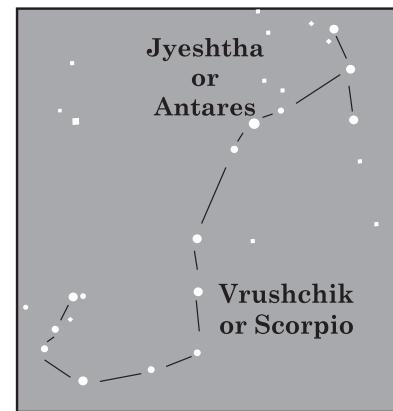
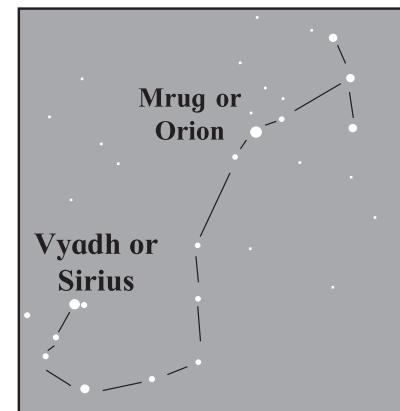
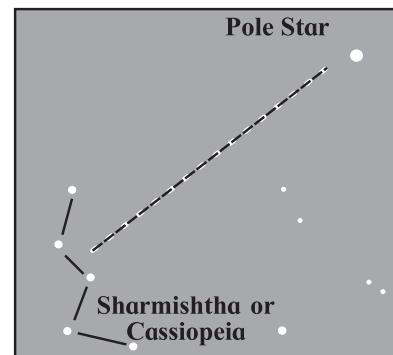
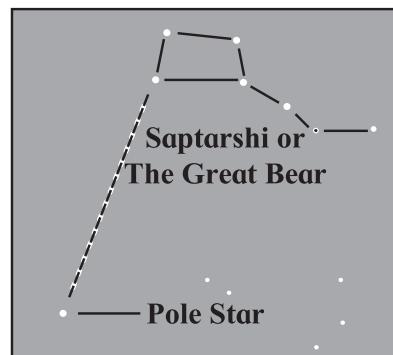
For example, on Makarsankranti we say that the sun enters Makar Raashi (Capricorn zodiac sign or Nakshatra).

**(3)** Stars are born out of nebulae. Nebulae are clouds made up mainly of hydrogen gas, helium and dust particles. The particles in these clouds are attracted towards one another due to the force of gravity. As a result, the clouds contract and become dense and spherical in shape. At the same time, the pressure of the gas at the core of the cloud increases causing the temperature to rise tremendously and energy generation. Such a spherical cloud of hydrogen is called a 'star'.

Later, processes such as contraction, expansion, rise in temperature, etc., bring about changes in the nature of the star. These changes occur over a very long period of time and constitute the life-cycle of stars. The different forms of the stars at various stages during the life-cycle are identified as different types of stars.



**Q.6.**



# History

## Topic 10 : The Expansion of the Maratha Power

**Q.1.** (A) (1) Shahu Maharaj (2) Bundelkhand  
(3) Satara (4) Balaji Vishwanath  
(5) Palkhed (6) Sanad

(B) (1)-(c), (2)-(a), (3)-(b).

(C) (1) Nemaji Jadhav

(D) (1) Shrivardhan (2) Raja Chhatrasal  
(3) Raverkhedi (4) Chimajiappa  
(5) Sayyid brothers

(E) (1) True (2) True (3) False (4) False (5) True

**Q.2. (1)** There was a struggle among the sons of Aurangzeb for the throne of Delhi.

(2) Prince Azamshah marched towards Delhi to seize the imperial throne, after his father's death.  
(3) Maharani Tarabai did not accept Shahu's claim to the throne of Delhi.  
(4) Balaji Vishwanath convinced many Sardars that Shahu Maharaj was the real heir of the Maratha empire and so they should join hands with Shahu Maharaj.

**Q.3. (1)** Balaji got the rights from the Mughal Emperor for the Marathas to collect chauthai and sardeshmukhi from the Mughal territory in the Deccan.

(2) Nizam opposed the right of the Marathas to collect chauthai and Sardeshmukhi in the Mughal territory in the Deccan.

(3) Azamshah was one of the sons of Aurangzeb. There ensued a struggle among his sons for the throne of Delhi. At that time Azamshah was in the South. He marched towards Delhi to seize the imperial throne.

(4) Shahu Maharaj was released by Azamshah. Immediately after his release, he marched towards Maharashtra. He was joined with some Maratha Sardars, but Maharani Tarabai did not accept his claim to the throne. So Shahu Maharaj fought a battle at Khed with Maharani Tarabai on the bank of Bhima.

### Q.4. Sanad : Grants.

**Chauthai** : The right to collect one fourth part of the revenue.  
(From the Mughal territory in the Deccan)

**Sardeshmukhi** : The right to collect one tenth part of the revenue.  
(From the Mughal territory in the Deccan.)

**Q.5. (1)** The battle between Maharani Tarabai and Shahu Maharaj was fought at Khed because Maharani Tarabai did not accept Shahu Maharaj's claim to the Maratha throne. In the battle, Shahu Maharaj captured Satara and got himself crowned. Satara became the capital of Maratha Kingdom. For a while, the opposition between Maharani Tarabai and Shahu Maharaj continued. Maharani Tarabai proclaimed her minor son Shivaji II as the Chhatrapati of Panhala. In this way, two separate Maratha states were formed. They were the Satara Kingdom and the Kolhapur Kingdom.

(2) Azamshah believed that if Shahu Maharaj was released, there would arise a conflict between him and Maharani Tarabai for the throne of the Maratha Chhatrapati. Azamshah felt that this would end the Maratha power. Therefore, Azamshah released Chhatrapati Shahu Maharaj from his custody.

(3) The Mughal power faced the threat of the Irani and Afghani invaders from the North-West. They also had a threat of local Pathans, Rajputs, Jats and Rohilla rulers. The internal competition and tussle in the court

weakened the Mughal power. Due to all these, the Delhi court needed help from the Marathas.

**Q.6. (1) *Balaji Vishwanath*** : Balaji Vishwanath was a prominent supporter of Shahu Maharaj. He was from Shrivardhan, in Konkan. He was a capable and experienced Peshwa. He convinced the Sardars that Shahu Maharaj was the real heir of the Maratha throne and won them over to the side of Shahu Maharaj. He obtained grants to collect chauthai and sardeshmukhi from the Mughal territory in the Deccan.

**(2) *Kanhoji Angre*** : Kanhoji Angre was the chief of the Maratha Navy. He chose to side with Maharani Tarabai and attacked the territories of Shahu Maharaj. This gave rise to a difficult situation. Under these circumstances, Shahu Maharaj sent Balaji Vishwanath to fight against Kanhoji Angre. Balaji was competent and experienced. He avoided war and convinced Kanhoji Angre to come to the side of Shahu Maharaj.

**(3) *The Battle of Palkhed*** : The Battle of Palkhed was fought between Nizam-ul-Mulk and Bajirao I. The Mughal Emperor Farukhsear appointed the Nizam, the Subhedar of the Deccan. In 1713 C.E. the Nizam tried to establish a separate existence at Hyderabad. The Emperor had given the Marathas the rights to recover chauthai-sardeshmukhi from Mughal areas. The Nizam did not like it so he was against it. He captured some part of the Pune Pargana. Bajirao decided to checkmate the Nizam and defeated the Nizam at Palkhed near Aurangabad. The Nizam accepted the Maratha right to collect chauthai-sardeshmukhi.

**(4) *Peshwa Bajirao I*** : After the death of Balaji Vishwanath, his son was appointed as a Peshwa in 1720 C.E. He was a great General. With his valour, he established the Maratha supremacy in the North. He extended the Maratha power in Malwa and Bundelkhand. He won status for the Maratha power as a formidable power in the whole of India.

### Topic 11 : Marathas - The Protectors of the Nation

**Q.1. (A)** (1) Tipu (2) Ayodhya  
(3) Mahadji (4) Third (5) Delhi

**(B)** (1) At Buradi Ghat (on the banks of the river Yamuna)  
(2) Marathas (3) Ahmadshah Abdali  
(4) Chauthai

**(C)** (1) Ahmadshah Abdali (2) Raghunathrao  
(3) Pathans (4) Madhavrao  
(5) Rohillas (6) Surajmal

**(D)** (1)-(b), (2)-(a), (3)-(e), (4)-(c), (5)-(d).

**(E)** (1) Mavlas (2) Goa  
(3) Pakistan (4) Nawab

**(F)** (1) False (2) True (3) False (4) True  
(5) False (6) False

**(G)** (I) (1) The battle of Rakshasbhuvan  
(2) The death of Tipu Sultan  
(3) The death of Madhavrao Peshwa  
(4) The battle of Panipat  
(5) The battle of Buradi Ghat

(H) (1) Nanasaheb      (2) Dattaji      (3) Najibkhan  
 (4) Madhavrao      (5) Abdali

**Q.2.** (1) Abdali posed a challenge to the Marathas at Panipat.  
 (2) Abdali captured Delhi and returned to Afghanistan with a huge booty.  
 (3) The Marathas fought at Panipat with the perspective that "India is for Indians".  
 (4) The Peshwa sent the Shinde-Holkar armies for the protection of Delhi on behalf of the Chhatrapati.  
 (5) The subhas included for Chauthai were Kabul, Kandahar and Peshawar.  
 (6) To get a firm hold over the Punjab and to crush Najibkhan, the Peshwa sent Dattaji Shinde and Janakoji Shinde to the North.  
 (7) The Rohillas had created a havoc in the Doab region of the Ganga and Yamuna rivers. To subdue the Rohillas, Nawab of Ayodhya invited the Marathas to Ayodhya.

**Q.3.** (1) The orthodox sects in the North saw the Marathas as people belonging to another religion. With a view to reducing the Maratha might in the North, some orthodox sects persuaded Abdali to invade India.  
 (2) In this battle of Panipat, Vishwasrao, the eldest son of Nanasaheb, fell victim to an enemy bullet. When Sadashivraobhau learnt this, he fiercely attacked the enemy in a frenzy. He disappeared in the battle fray. Seeing that their leader had disappeared, the Maratha soldiers lost courage. At that very moment, the reserve contingents of Abdali launched an attack on the

Marathas with fresh vigour and so the Marathas were defeated in the battle of Panipat.

(3) As per the treaty, the Emperor gave the Marathas the chauthai rights of the subhas of Kabul, Kandahar and Peshawar. These subhas were under the Emperor previously but now they were a part of Abdali's Afghanistan. If the Marathas had to collect chauthai from those subhas, they had to annex them to the Mughal empire. Abdali wanted those subhas under the Afghan control. So, a conflict between the Marathas and Abdali was imminent and inevitable.

**Q.4.** (1) After capturing Delhi, Abdali returned to Afghanistan with a huge booty. By the time, Raghunathrao and Malharrao Holkar captured Delhi and drove out Abdali's officers. They also captured Punjab and pursued Abdali's soldiers right upto Attock in 1758 C.E. This raised the Maratha standard at Attock.  
 (2) The Afghans had created havoc in the Doab region of the Ganga and Yamuna rivers. The region belonged to the Nawab of Ayodhya. The chief of Afghans was Ahmadshah Abdali. He had heard about the riches of India. So there was a threat of his invasion to the Mughal Emperor. Both the Nawab and the Mughal Emperor sought the help of the Marathas to protect them and subdue the Afghans. The Marathas took the responsibility of the protection of the Nawab and the Mughals in return of chauthai from their subhas. This way, the Nawab, the Emperor and the Marathas had a common enemy and that was Abdali. The Marathas had strength and integrity. The Sardars like Raghunathrao, Malharrao Holkar, Sadashivraobhau, Vishwasrao, Janakoji Shinde, Dattaji Shinde, etc., had shown their

courage to defeat Abdali. But unfortunately, in the battle of Panipat the Marathas were defeated and had to suffer a great loss. The Afghans also suffered huge losses. After this battle, the descendants of Afghans gave all the responsibility of North politics to the Marathas as it was not possible for them to look after those territories.

**(3)** The battle of Panipat was fought between the Marathas and the Afghan chief Abdali in 1761 C.E. It was the third battle of Panipat.

The effects of the battle of Panipat were as follows :

- (i) A whole generation of young men in Maharashtra were killed.
- (ii) Many brave Sardars fell on the battlefield.
- (iii) Due to the war, the Maratha treasury became empty.
- (iv) Taking advantage of the Maratha defeat, the Nizam once again started his anti-Maratha activities but he was defeated at Rakshasbhuvan near Paithan. Secondly, Hyder Ali attacked the Maratha territory in Karnataka, but he was also defeated at Moti Talav near Srirangapattan.

### Topic 12 : Progression of the Empire

**Q.1. (A)** (1) Vadodara (2) Umabai (3) 1818  
(4) Chauthai (5) Ranoji Shinde (6) Wanawadi  
(7) Yashwantrao (8) Delhi (9) Ahilyabai

**(B)** (1) Ahilyabai Holkar (2) Raghuji Bhosale  
(3) Mahadji Shinde (4) Nana Phadnavis  
(5) Parasoji (6) Peshwa Madhavrao

**(C)** (1) Rajputana (2) Raghuji  
(3) British (4) Nana Phadnavis

**(D)** (1)-(c), (2)-(d), (3)-(a), (4)-(b).

**(E)** (1) The battle of Ashti.  
(2) Maratha dominance over Odisha.  
(3) The British flew the Union Jack in Pune.

**(F)** (1) True (2) False (3) False (4) True

**Q.2. (1)** Emperor honoured Mahadji with the title of Vakil - i - Mutlak (Chief agent of the Emperor).  
**(2)** The Jagir of Varhad and Gondawan was given to Parasoji during the reign of Shahu Maharaj.  
**(3)** Shahu Maharaj assigned the chauthai rights of Bihar, Bengal and Odisha to Raghuji Bhosale.  
**(4)** The Maratha Sardars were valorous and capable. They had leadership qualities.  
**(5)** In 1818 C.E. the British defeated the Marathas in the battle of Ashti.

**Q.3. (1)** The areas surrounding Tirucherapalli and Arcot in the South, Bengal, Bihar and Odisha were the areas Raghuji Bhosale brought under his control. He had been assigned the rights to collect chauthai from Bengal, Bihar and Odisha by Shahu Maharaj.  
**(2)** After the death of Peshwa Madhavrao, the Maratha state was in disarray. Nana Phadnavis was a famous administrator and statesman. With the help of Mahadji Shinde, he set up the affairs of the state. Nana managed the affairs of the South. He was helped by the Patwardhans, Haripant Phadke, the Rastes and other Sardars. He established supremacy in the South.

**(3)** Punyashloka Ahilyabai was the wife of Khanderao Holkar. After the death of Malharrao Holkar, (the father-in-law of Ahilyabai) she assumed the reins of the Indore administration. Her work was as follows :

- (i) She strove to bring more land under cultivation, digging wells for farmers, promoting trade and industry, building lakes and tanks.
- (ii) She built temples, Ghats, Maths, Dharamshalas, drinking water facilities at all important places of pilgrimage.
- (iii) She looked into judicial matters personally and dispensed justice.
- (iv) She made laws for agricultural cess and revenue collection.

She ruled ably for twenty-eight years and enhanced the Maratha prestige in the North.

**(4)** Mahadji was a brave General and astute statesman. He gave modernised training to the Maratha army. For this he appointed a French military expert de Boigne. He subdued the Rohillas, the Jats, the Rajputs and the Bundelas. He defeated the British when they tried to capture the Emperor of Delhi. He even saved the Emperor from Ghulam Kadir, when he had looted the treasure of Delhi. He confiscated the wealth from Ghulam Kadir and reinstated the Emperor. The Maratha army defeated the British at Wadgaon under the leadership of Mahadji Shinde. The Marathas used guerilla tactics and blocked the supply of foodgrains to the British. Mahadji restored the Maratha supremacy in the North. After the death of Mahadji Shinde and Nana Phadnavis, the Maratha power began to wane.

**(5)** Khanderao Dabhade and his son Trimbakrao Dabhade

laid the foundation of the Maratha power in Gujarat. After the death of Khanderao Dabhade, his wife Umabai Dabhade routed the Mughal Sardar of Ahmedabad. She conquered the fort there. Later, the Gaikwads made Vadodara in Gujarat a seat of their power.

**(6)** The reasons behind the end of the Maratha power were as follows.

- (i) Bajirao II, the son of Raghunathrao was the Peshwa. He did not have leadership qualities.
- (ii) There were many vices in his rule.
- (iii) He was unable to unite the Maratha Sardars.
- (iv) There were internal conflicts between the Sardars.

**Q.4. (1)** Ghulam Kadir, the grandson of Najib Khan, captured the Red fort and tortured the Emperor and his begums for their wealth. He gouged out the Emperor's eyes and took hold of the Royal Treasury. In these circumstances, Mahadji fought against Ghulam Kadir to resist him in the North.

**(2)** Mahadji Shinde was a brave general and an astute statesman. Mahadji was instrumental in re-establishing the Maratha supremacy and prestige in North India after the Maratha defeat in Panipat. He trained and modernised his army under the French military expert de Boigne. So Peshwa Madhavrao conferred the family title on Mahadji Shinde.

## Topic 13 : Life of the People in Maharashtra

**Q.1. (A)** (1) Chhatrapati Shivaji Maharaj  
 (2) Maratha      (3) Patil      (4) revenue  
 (5) village      (6) salt      (7) liberal

**(B)** (1) God Ganesha      (2) Apta  
 (3) The Bhavani Devi temple at Pratapgad and Saptkoteshwar temple at Goa  
 (4) Veermata Jijabai, Maharani Tarabai, Ahilyabai Holkar

**(C)** (1) Land  
 (2) Balipratipada and Bhau-beej  
 (3) Messengers and camel riders  
 (4) Hiroji Indulkar  
 (5) At Diveghat in Hadapsar near Pune

**(D)** (1) (1)-(c), (2)-(f), (3)-(a), (4)-(e), (5)-(d).

**(E)** (1) Dandpatta      (2) Blouse  
 (3) Painting      (4) Drama

**(F)** (1) False      (2) False      (3) True      (4) False      (5) False

**Q.2. (1)** Agriculture and occupations based on agriculture were the major sources of production at the village level.

**(2)** The farmers grew jowar, bajra, wheat, ragi, maize, rice and other grains in their fields.

**(3)** The daily diet of the rich people in the cities was rice, dal, chapati, vegetables, salads, milk and dahi products.

**(4)** The people performed anusthans to avoid the wrath of Gods and the planets.

**(5)** Songs, music and dance were the prominent parts of the plays.

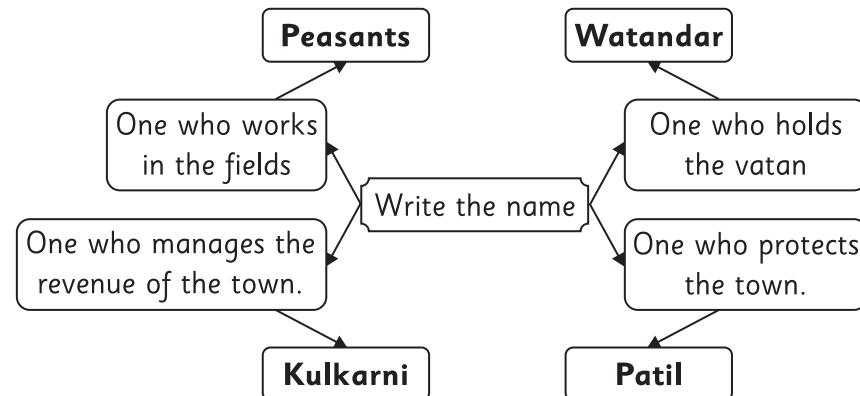
**Q.3. (1)** The village occupations were divided into Kali and Pandhari. Peasants who worked in their fields in the Kali (soil, earth or land) while others in Pandhari means other occupations within the village precinct.

**(2)** Chhatrapati Shivaji Maharaj formed the Hindawi Swaraj with the noble intention of the welfare of common people, removal of oppression and the protection of Maharashtra Dharma.

**(3)** The themes of those paintings were Dashavatara, Ganapati, Shankar, Ram Panchayatana, mythological stories, Ramayana, Mahabharata, festivals and so on.

**(4)** The important forms of literature includes the composition of Sants, mythological narratives, 'teeka' literature, owl, abhang, treatises, narrative poems, biographies, aaratis of deities, powadas, bakhars, historical letters, etc.

## Q.4.



**Q.5.**

<b>Sr. No.</b>	<b>Points</b>	<b>At the time of Chhatrapati Shivaji Maharaj</b>	<b>Today</b>
(1)	Transactions	<b>in kind - in the form of objects, foodgrains, etc. Barter system was used.</b>	(1) <b>Cash - (Rupees and Paise)</b> (2) <b>Cheques -</b> (3) <b>Demand draft</b>
(2)	Houses	<b>Simple mud and brick construction in villages. Wadas with one or two storeys in cities, made with baked, unbaked bricks, titles, etc. Permanent.</b>	Permanent well constructed, cement concrete multi-storied houses.
(3)	Transportation	<b>By road, by water, bullocks, camels, donkeys, boats.</b>	Bus, Railway, Aeroplane.
(4)	Entertainment	<b>Plays, Songs, Music, Dance, Tamasha, Bhajan, Bharud, Powadas, Games, Indoor and Outdoor sports.</b>	<b>Cinema, dramas, orchestra, T.V., radio, mobile, songs, dance, music, games, wrestling, swimming, etc.</b>
(5)	Script	<b>Modi script</b>	<b>Devnagari, Urdu, English</b>

**Q.6.** The undesirable customs prevalent in today's society are :

- (1) Negligence of the girls
- (2) Dowry system
- (3) Black magic
- (4) Denying rights to widows
- (5) Child labour.

**Measures.**

- (1) Measures for the girl's safety should be given importance. They should be educated and made self-dependent. They should be treated equal to boys.
- (2) Dowry system has already been eradicated by law. Even then many people still harass their daughters-in-law and victimise them. In this case people should take the help of the police, social institutions, NGO's, etc.
- (3) Many people believe in black magic in our country. We should educate the people to develop a scientific attitude. To believe in reasoning and rationalism.
- (4) Widows should get the right to education, wealth and live with dignity in society. They should be made independent by giving education, training in some work. Awareness of widow remarriages should be allowed as per the law. People in the society should be aware of this.
- (5) Children below the age of fourteen years should be sent to school and they should not be employed in factories or hotels or in household work as a servant. If anybody finds such children, the child should be rescued with the help of NGO's, police and social institutions, etc.

In this way, we should bring awareness in the society and develop a scientific attitude to avoid the undesirable things in the society.

**Q.7.** The festivals celebrated in our area are Gudi Padwa, Dasara and Ganeshotsava. Flag hoisting on Independence Day and on Republic Day are also celebrated as the National Festivals of India.

On the day of Gudi Padwa with a saffron coloured flag, people organise a big procession. Men are dressed in kurta, pajama and pheta (turban). Women wear nine-yard sarees and blouses. They wear ornaments and ride on two-wheelers in the procession.

Dasara is celebrated by starting new things. People give 'apta' leaves to each other and greet each other. It is one of the auspicious 'Muhurtas' or the day among the three and half muhurta.

Diwali is celebrated by bursting the crackers and offering sweets and gifts to the relatives, friends and neighbours.

In many areas, Ganeshotsava is celebrated publicly. A very huge idol of Ganesha is worshipped by the people. People from different areas come to take 'Darshana' and give offerings in the form of cash, gold ornaments, gold, silver, etc. Many families also bring the Ganesh idol at their home and the family, friends, relatives, neighbours visit their homes. People go for Aarti in the evening and morning to them.

By hoisting the flag people from the areas celebrate Independence Day and Republic day. They organise some programmes. People sing patriotic songs, which shows devotion to the nation, pray for long life of the soldiers. i.e., for the army, navy and airforce.

## Civics

### Topic 5 : Fundamental Rights - Part II

**Q.1.** (A) (1) court (2) Religious (3) Judicial  
(4) taxes (5) cultural (6) courts  
(7) writs

(B) (1) Habeas Corpus (2) Quo Warranto  
(3) Mandamus (4) Prohibition  
(5) Certiorari (6) Writs

(C) (1) False (2) True (3) False (4) True

**Q.2.** (1) The Constitutional duty of the court is to protect the rights of the people.  
(2) In case of infringement, the court gives appropriate verdict.  
(3) Protection of the fundamental rights given by the Constitution allows the citizens to exercise their rights.  
(4) The citizens have to fulfill their roles as alert, responsible and active citizens.  
(5) Currently there are 22 scheduled languages listed in the Constitution of India. They are - Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.  
(6) Institutions established by the Maharashtra State Government for further development of Marathi language are: Akhil Bharatiya Marathi Nathya Parishad, Maharashtra Sahitya Parishad – Pune, Rajya Marathi Vikas Sanstha and Akhil Bharatiya Marathi Sahitya Mahamandal.

**Q.3. (1)** The State cannot impose any religious taxes that might be used to encourage a particular religion. Therefore the Constitution prevents (forbids) the imposition of religious taxes.

**(2)** Right to Constitutional Remedies means the Constitution itself has provided for legal remedies incase people's rights are violated.

**(3)** In order to widen the scope of the Right to Freedom of Religion, two things are not permitted by the Indian Constitution.

- Religious education cannot be made compulsory in educational institutions that receive aid from the State.
- The State cannot impose religious taxes that might be used to encourage a particular religion.

**Q.4. (1)** All citizens are conferred upon with the Right to Freedom of Religion. According to it, each Indian is free to practice any religion or can establish a religious institution. Celebration of festivals is also included in the Right to Freedom of Religion.

**(2)** According to the Right to Education, each citizen has the right to preserve and propagate his /her language, its script and literature.

**(3)** The imposition of religious taxes might be used to encourage a particular religion. Therefore, our Constitution forbids religious taxes.

**(4)** Incase people's rights get violated, it becomes a Constitutional duty of the courts to protect the rights of

the people. This is because the Constitution itself has provided for legal remedies.

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### Topic 6 : Directive Principles of State Policy and Fundamental Duties

**Q.1. (A)** (1) Government (2) equality (3) life (4) religious (5) instructions (6) livelihood (7) equal (8) Fundamental

**(B)** (1) Yes (2) No (3) Yes (4) Yes (5) Yes (6) No (7) Yes (8) Yes

**(C)** (1) **Right**, (2) **Right**, (3) **Wrong** : It is a duty of each citizen to protect all monuments of historic interest and national importance. So, it is our duty to protect the historic places and not carve or paint our names on their walls. (4) **Wrong** : The State has secured adequate means of livelihood to both men and women. It has also secured equal pay for equal work. Accordingly, the women should get equal wages as the men for the same work. (5) **Right**.

**(D)** (1) Fundamental Rights (2) Religious taxes (3) Poverty, Backwardness and Illiteracy (4) The State (5) Liberty

**Q.2. (1)** Fundamental rights put restrictions on the power of the Government. The restrictions are as follows :

- State shall not discriminate between and among citizens on the basis of caste, religion, race, language or sex.

- (b) State shall not deny anybody equality before the law and equal protection of the law.
- (c) No person shall be deprived of his life.
- (d) State shall not impose any religious taxes.

**(2)** The Constitution has given express instructions to the State about what policies it should undertake. This is in the nature of given directives or guidelines about how to achieve the goals expressed in the Preamble. Hence, they are called as Directive Principles of the State Policy.

**(3)** When India won Independence, it faced a great challenge of establishing order and carrying out smooth administration. Eradication of poverty, backwardness and illiteracy, class and caste discrimination, etc., were some of the other challenges India faced after getting independence.

**Q.3. (1)** The Directive Principles of the Constitution enumerated (in the text book) are as follows :

- (a) The State should secure adequate means of livelihood to all citizens without any gender discrimination.
- (b) The State should secure equal pay for equal work for both men and women.
- (c) The State should secure the improvement of public health.
- (d) The State shall endeavour to protect and improve the environment and safeguard the forests and wild life of the country.

- (e) The State shall protect all monuments of historic interest and national importance.
- (f) The State shall promote with special care the educational and economic interests of the weaker sections of the people, especially the Scheduled Castes and Tribes.
- (g) The State shall offer public assistance to citizens in cases of employment, old age, sickness, etc.
- (h) The State shall secure a uniform civil code applicable to the entire country.

**(2)** The Directive Principles of the Indian Constitution have provided for a uniform civil code for the citizen's welfare and development. Through this provision, the State secures gender equality, equal pay for equal work for both men and women. Uniform civil code also provides educational rights to all. The State promotes this with special care; the educational and economic interests of weaker sections of the people, especially the Scheduled Castes and Tribes. It also offers public assistance for the problem of unemployment.

**(3)** Due to Fundamental Rights, citizens get the most needed liberty, while Directive Principles of State Policy create an atmosphere conducive to the growth of democracy. Even though we cannot go to the court if a Directive is not implemented by the Government, we can put pressure on the Government in various ways to make a policy in order to meet these goals. Therefore it is said that the Directive Principles and Fundamental Rights are two sides of the same coin.

**Q.4.** Citizens can conserve the environment by the following ways :

- (i) **Wild Life :** (1) It can be given protection by setting up the National Parks and Sanctuaries with the assistance of the Government.  
(2) Hunting must be restricted and prohibited in the forest.  
(3) Rehabilitation of endangered and threatened species should be done with the help of NGO's.  
(4) Deforestation should be checked and afforestation of non-forest areas should be encouraged.  
(5) Cultivation of tea, coffee, rubber, medicinal plants, etc., in non-forest areas can be conducted. It will maintain maximum balance in ecology.
- (ii) **Prevention of Water Pollution :** (1) Keep the surroundings of the water bodies i.e., rivers, streams, wells, oceans, seas clean.  
(2) Prohibit and restrict the location of industries near the settlements. They should be shifted away from the cities.  
(3) Precaution should be taken in case of waste water from industries. It should not be allowed to pollute water of the streams, rivers or seas.  
(4) Pet animals, utensils or clothes should not be washed in the streams or on the banks of the rivers or near the wells.  
(5) People should not throw their waste or garbage in the water bodies, or even around its surrounding areas.
- (iii) **Prevention of Air Pollution :**  
(1) We must stop air pollution to preserve the quality of the air. The presence of certain liquid and gaseous substances in the atmosphere is injurious and harmful to the environment, animals, plants and human beings.  
(2) To stop and reduce the air pollution; chimneys, ducts or any other outlets in the premises should be inspected

regularly for the analysis of the pollution.

- (3) Industries should be set up away from the human settlements and cities.
- (4) Automobile or vehicle companies should be asked for the standard emission of the smoke, otherwise they should be fined along with imprisonment. Even those who are emitting smoke and polluting air should be fined.
- (5) People should make maximum use of bicycles.
- (6) Avoid throwing garbage on the road which emits foul smell.

**Q.5. (1)** All monuments of historic interest are of national importance. They preserve the rich heritage of our composite culture. So the State shall protect all monuments of historic interest.

- (2) Pension scheme enables the old people to live an independent and happy life. They can manage their expenses in that pension.
- (3) Free and compulsory education promotes the educational and economical interest of the weaker sections of the people, especially the Scheduled Castes and Tribes. Children cannot be employed or made to work in factories and mines. The whole society will thus become literate.

# Geography

## Topic 10 : Human Settlements

**Q.1.** (A) (1) metropolitan cities (2) human settlements  
(3) tribal hamlets (4) stability  
(5) facilities, services (6) pollution  
(7) social services (8) linear settlements

(B) (1)-(c), (2)-(a), (3)-(d), (4)-(b).

**Q.2. (1)** The various types of human settlements are :

(a) Scattered settlements (b) Nucleated settlements and  
(c) Linear settlements.

**(a) Scattered Settlements :**

(i) Houses are found in areas of high-relief, dense forests, grasslands, hot deserts, etc.  
(ii) Houses are far apart with limited population.  
(iii) Since these settlements are closer to nature, they are free from pollution.  
(iv) Facilities and services are not available here.

**(b) Nucleated Settlements :**

(i) Close to water resources.  
(ii) Fertile plains, transport hubs, mining and commercial centres help in the development of these settlements.  
(iii) Social services are available here.  
(iv) People of different castes, religions, races and ideologies live together, so they have better social life.

**(c) Linear Settlements :**

(i) Developed along rivers, seacoasts, etc.  
(ii) Houses in a single line growing into multiple lines.  
(iii) Roads are parallel to each other.

**(2)** In scattered settlements, houses are few and far from each other. Generally, such settlements are found in the areas of high relief, dense forests, grasslands, hot deserts, and extensive agricultural lands. In nucleated settlements, houses are close to each other. These settlements are generally close to water sources like brooks, rivulets, rivers, lakes, reservoirs etc. Scattered settlements have limited populations as in small hamlets like pada, wadi, etc. Facilities and services in these settlements are not adequate. Nucleated settlements develop in certain places over certain periods of time they attain particular shapes. Social services are available in these settlements. Scattered settlements are closer to nature, hence, they are free from pollution. They depend on the centrally located villages for their day-to-day requirements. In nucleated settlements, people from different castes, religions, races and ideologies live together, hence, they have a better social life.

**(3)** In order to flourish, human settlements need favourable geographical conditions such as availability of water, conducive climate, fertile land, etc. People along the sea coast are engaged in fishing. Their settlements become fishing hamlets. Forest dwellers or tribal people use forest produce for their livelihood, they live in 'tribal hamlets'. Where the land is fertile and rainfall is good, cultivation of crops can be done. On dry arid land, houses are situated very far from each other and here people have to be occupied with occupations such as mining.

**(4)** The factors influencing the location of human settlements are —

**(a)** Physical - Physiography, soil, climate, water supply and river banks.  
**(b)** Cultural - Defence, health, education, tourism, and historical significance.

**(C)** Economic - Irrigation, occupation, transport and communication, industries, trade and government offices.

**(5)**

- (i) Using resources from the surroundings, man started his settlements. Human settlements flourished in places with favourable conditions such as availability of water, fertile land, etc.
- (ii) In the early settlements, the occupations of the people were dependent on the locally available natural resources. This gave rise to separate settlements of people engaged in a particular occupation e.g., people living near the sea coasts became fishermen.
- (iii) Agriculture is practiced in fertile areas. Here settlements sprang up near the fields and slowly grew. Agriculture, fishery, etc., are some of the occupations of people in rural settlements.
- (iv) With the passage of time other associated occupations developed gradually. As a result, people from surrounding areas migrated and settled in these areas leading to increase in rural population.
- (v) Importance of secondary and tertiary occupations led to the transformation of rural settlements into urban settlements.

**(6)** People who are engaged in a particular occupation live in hamlets. Eg., people along the seacoast engaged in fishing will live in their fishing hamlets while forest dwellers will live in forest areas in tribal hamlets (Adivasi Padas).

Villages are much bigger than hamlets. People with different occupations live in the village.

Hamlets are small and have people following the same occupation.

People of other associated occupations settle down and the size of the village grows.

**Q.3.** (1) Farmers in scattered settlements.

(2) Nucleated settlements. (3) Linear settlements.

(4) Linear settlements. (5) Scattered settlement.

(6) Nucleated settlements. (7) Scattered settlement.

(8) Nucleated settlements.

**Q.4.** (A) Scattered settlement (B) Nucleated settlement

(C) Linear settlements (D) Linear settlements

★ This is an example of linear settlement. Such settlements are near roads, rivers, sea coasts, railways. One reason is transport facilities will be available quickly. Another reason is such settlements can quickly grow into villages with shops and road or railway or river facilities.

### Intext Question

#### Can you tell ?

1. (1) We can see a school, skyscrapers, monorail train, lonely cottage, busy street with traffic and a vendor.  
 (2) The familiar features are skyscrapers, traffic on the roads, vendors.  
 (3) Fig. 10.2 c (4) Fig. 10.2 a  
 (5) Fig. 10.2 d (6) Fig. 10.2 b  
 (7) Rural settlement – a  
 Tribal settlement or hamlet – c  
 Town – d City – b  
 (8) Sequence in which the pictures need to be arranged as per their level of development is as follows : (c), (a), (d), (b)
2. (1) 'A' is nucleated settlement near water reserve.  
 'B' is linear settlement along the road.  
 (2) 'B' is linear settlement with houses in line along the road.

'C' is a scattered settlement. Houses are far away from each other.

(3) In 'C'-scattered settlement.

(4) Nucleated settlement that has turned into a well-developed city.

3. (1) Settlements shown here are (a) Linear (b) Nucleated (c) Scattered

(2) Pukran, Dumba

(3) In a linear way. On either side of the road.

(4) In nucleated settlements as well as linear settlements the houses are close together.

In nucleated settlements it is so to carry on in an effective manner since, this settlement has transport hubs, commercial centres, mining centres, markets, etc.

Linear settlements are together but not in a crowd in a line parallel to roadways, railways, etc., for quick transport.

(5) (a) Faraway houses - Scattered settlements.  
 (b) Along roads, railways or rivers - Linear settlements.  
 (c) In groups, close to each other near water resources - Nucleated settlements.

## Topic 11 : Contour Maps and Landforms

Q.1. (1) Distribution of the heights and landforms in a region can be shown by contours. The lines determine the slope and the intervisibility between any two points on the map.

(2) These maps are of immense use to trekkers, mountaineers, soldiers, defence officers, etc.

(3) Contour lines are drawn by joining places of equal altitudes or heights. Contour lines help us to understand the landform, determine the amount of slope and observe the distance between two points on the map.

(4) In agricultural work, contour maps are useful as guide lines in planning land improvement projects. The tile drainage system can be conveniently planned with a contour map.

Q.2. (1) steep (2) heights (3) contour (4) slope

### Intext Question

Q.1 (1) Hills.

(2) Royal blue, sea blue, yellow, brown and red are the colours used on them.

(3) Hills with their peaks and hill ranges, rivers, settlements.

(4) The general direction of the ranges shown in the map is from east to west.

(5) The flat land is located towards the east.

(6) Maximum - 800m and minimum - 600m.

(7) They indicate the heights of the peaks of hills.

(8) The extra shadow shows where the lines are coming close to each other. Where there is no shadow we find the land quite even. Lines coming close to each other show the depth or height of the area.

(9) The Text book figure 11.1 (b) gives us more information, that is the height of the peaks, the direction of the ranges, the way the ranges are moving.

(10) Yes, the lines that move near each other show steep slope, the lines that are a little distant from each other show gentle slope.

Q.2 (1) In the south. (2) From west to east.

(3) In the Eastern part.

(4) The Karha river basin and the direction of flow of the river, shown in the map are not seen in the model. The model shows only landforms of different heights and not about water bodies.

(5) In the Eastern direction. (6) In the Southern direction.