

Key to Navjeevan Practice Book

Standard
5

Teacher's Copy

Environmental Studies : Part 1


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Topic 1 : Our Earth and Our Solar System

Exercises

- Q.1.** (1) planets (2) sun (3) orbit
(4) Pluto (5) Rakesh Sharma
- Q.2.** (1) - (b), (2) - (a), (3) - (d), (4) - (c)
- Q.3.** (1) Mercury (2) at third position (3) Venus
(4) Jupiter, Saturn, Uranus, Neptune
(5) Planet Neptune
- Q.4.** (1) Heavenly bodies that do not twinkle are known as planets.
(2) The earth's movement around the sun is called revolution of the earth.
(3) The planets in the solar system Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
(4) The name of the dwarf planet is Pluto.
(5) The path that the planet takes to revolve around the sun is known as the orbit of the planet.
(6) Heavenly bodies revolving around planets are known as satellites.
(7) The asteroids found in between the planets Mars and Jupiter.
(8) The moon is closest to the earth. Hence, it appears to be big but it is actually smaller than the sun.
- Q.5.** Send a very powerful space rocket into space. The rocket and the asteroid will clash and the asteroid will be smashed to pieces and our earth will be safe.
- Q.6.** (1) The sun is the source of light to all planets. Without the sun, there will not be any light for any planet, hence there will be darkness everywhere and it will be very cold.

- (2) I will write the blue planet earth filled with greenery. Third from the sun next to Venus with a satellite called the moon.

- Q.7.** The sequence should be the sun in the centre. To the left should be Mercury, Venus, Earth with the moon and Mars.

To the right will be Jupiter, Saturn, Uranus, Neptune and lastly Pluto the dwarf planet.

- Q.8.** (1) Moon (2) Sun (3) Moon
(4) Earth (5) Earth (6) Sun
- Q.9.** (1) Rockets are used to send a spacecraft into space. They burn a tremendous quantity of fuel in order to lift spacecrafts weighing thousands of tons into space.
(2) Man-made satellites provide useful information for agriculture, environment, weather forecasting, making maps, searching for water and mineral wealth on earth and also for telecommunication.

Q.10.

	Planets		Stars
(i)	Planets do not twinkle in the sky.	(i)	Stars twinkle at night in the sky.
(ii)	Planets do not have their own light.	(ii)	Stars have their own light.
(iii)	Eg. Earth, Jupiter	(iii)	Eg. Sun

Topic 2 : Motions of the Earth

Exercises

- Q.1.** (1) rotation (2) revolution (3) day and night
(4) earth's axis (5) inclined

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

Q.3. (1) Phases of the moon

(2) Round moon – Full moon day, No moon at all – New moon day.

Q.4. (1) The equator is an imaginary circle dividing the earth into two equal parts. This imaginary circle is drawn around the surface of the earth exactly in between the north and south poles.

(2) The two parts of the earth made by the equator are Northern hemisphere and the Southern hemisphere.

(3) N refers to North pole and S refers to South pole.

(4) A leap year has 366 days.

Q.5. (1) Full moon is when we can see the entire side of the moon that faces the earth.

(2) New moon is when we cannot see any part of the moon from the earth.

(3) The period from one new moon to the next is of 28 - 30 days. This is called the Lunar month.

(4) Everyday of the lunar month is called a 'tithi'.

Q.6. Amit should make this trip anytime between end of September and end of March since days are longer during these months and Southern hemisphere receives more heat.

Q.7. (1) 365 rotations.

(2) Kolkata, Bhopal, Nagpur, Mumbai.

Topic 3 : The Earth and its Living World

Exercises

Q.1. (1) land (2) Two-third (3) waterfalls
(4) atmosphere (5) troposphere

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

Q.3. (1) We get water from rivers, ponds, creeks, wells, rain, snow, ice, straits, bays, etc.

(2) Since the buildings have to stand firm and not collapse, the foundation has to be very strong. Hence, we lay foundations of building on firm land that does not collapse easily.

(3) Breathing helps us to take in fresh air and give out impure air. Breathing keeps us alive.

(4) The earth gets light and heat from the sun.

Q.4. (1) Clouds are made up of water that has turned into water vapour due to the heat of the sun. It contains small drops of water after the vapour has condensed.

(2) Living things and all the parts they occupy, i.e. lithosphere, atmosphere, and hydrosphere are together called the biosphere.

(3) The different landforms that one can see around are grassy plains, hills and mountains, plateaus and jungle and forest areas too.

The grassy plains are lovely to behold. There are animals running around since this is a sanctuary for wild animals. Everything is green and clean. There are hills at a distance. These hills are quite high. The hills are bare. We see some people trekking up the hills. There are several monkeys who have made these hills their home.

- (4) The seven continents are : Asia, Europe, Africa, North America, South America, Antarctica and Australia.
- (5) The five oceans are : The Atlantic Ocean, Pacific Ocean, Arctic Ocean, Southern Ocean and Indian Ocean.
- (6) Aeroplanes fly in the higher parts of the troposphere. The air is very rare in the troposphere. Hence, arrangements have to be made in aeroplanes to ensure that passengers get enough air for breathing.

Q.5. The dark patches that appear on the skin are called sunspots. The solution for dark patches that have appeared on the skin after exposure to the sun are :

- (i) Have a bath with cold water after coming from outside.
- (ii) Apply aloe vera gel.
- (iii) Apply fresh lemon slices.
- (iv) Wear a cap, carry an umbrella and use sunscreen as preventive measures.

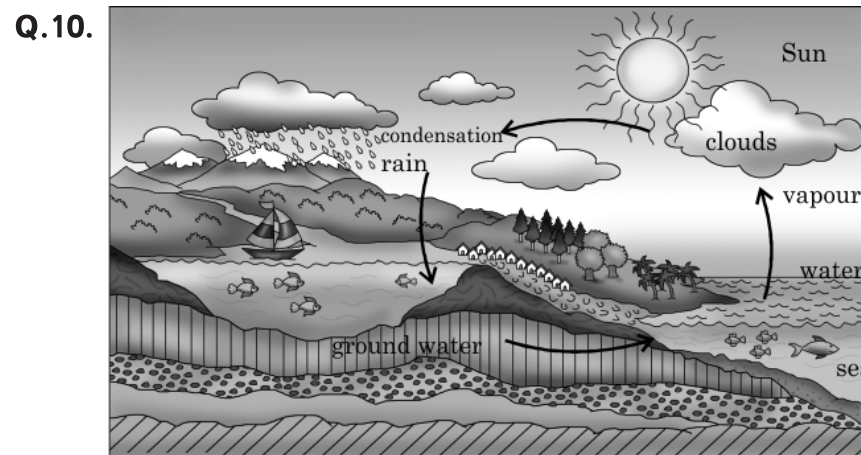
- Q.6.** (1) We see the rainbow in the troposphere.
 (2) As we go higher and higher, the air becomes rarer and rarer. The amount oxygen gas that is needed to stay alive becomes less, hence oxygen cylinders are necessary.
 (3) Micro-organisms living in the soil helps the process of decomposition of plant residue, dead animals, excreta, etc. As a result, substances that help in the growth of plants are formed. These substances get added to the soil. Plants use them for their growth.

Q.7. (1) Hill (2) Plateau

Q.8. (1) fog, storms, floods (2) Oceans, seas, lakes, rivers

Q.9. (1) Evaporation is the process by which water on the earth's surface evaporates continually due to the sun's heat. The evaporated water enters the atmosphere. Evaporation of water leads to the formation of clouds, rain and, fog.

- (2) When water gets evaporated due to heat, it forms vapour. Water vapour is lighter than air and hence it rises high up into the atmosphere. As it goes higher and higher, it cools and forms fine droplets of water. This is called condensation.
- (3) The process of evaporation, when the water from the seas, lakes, ponds, etc., becomes vapour due to heat and rises in the air and the process of condensation, when the vapour cools and forms small drops of water and the process of these small drops of water falling down as rain together makes up the water cycle.



The Water Cycle

Topic 4 : Environmental Balance

Exercises

- Q.1.** (1) biodiversity (2) environment
 (3) Environmental Science (4) Micro-organisms
 (5) water cycle
- Q.2.** (1) True (2) True (3) False

Q.3. (1) A food chain is a chain that has several links in it. Each member of the food chain is an individual by itself and yet, is connected to the other. Every component in the chain is food for the next component.

Example : Let's take the components – sun, plants, a worm, a grasshopper and a sparrow.

Plants grow with the help of the sun, worms feed on plants, grasshoppers eat worms and sparrows eat grasshoppers.

(2) There are many food chains in our environment. This is what enables every living thing to get the food it needs. There is interaction amongst living things and between living and non-living things in nature. The water cycle gives us continuous water supply. The air cycle enables us to get oxygen. When various cycles in the environment go on uninterrupted, environmental balance gets maintained.

(3) The variety we see in all living things that belong to a particular area, is called biodiversity of that area.

(4) The surroundings and conditions that affect the life of the organisms living in that surrounding, are together known as environment.

(5) The components of the environment are sunlight, water, soil, plants, animals, etc.

(6) (i) Plants make their own food in presence of sunlight using water from soil and carbon dioxide from the air.

(ii) Many animals in the environment eat only plants.

Hence, plants are the main support of every food chain.

Q.4. To remove insects from the grain without using insecticides, the following natural methods can be used :

(i) Place the grains in sunlight.

(ii) Make use of neem or bay leaves that act as insect repellants.

(iii) You can also apply citronella oil or canola oil to the grains since they act as insect repellants.

Q.5. (1) grass → worm → frog → snake → kite.

Q.6. The substances in the soil useful for growth of plants are:

(i) Nutrients such as nitrogen, phosphorus, etc.

(ii) Water, minerals, organic matter, etc. are also useful for plant growth.

Q.7. (1) Weasels, snakes, foxes and birds like hawks, owls, etc.

(2) Sugar (glucose)

(3) Grass, leaves, herbs, shrubs, etc.

(4) Tigers eat any animal it can catch. They include deer, wild bear, etc.

Q.8. Fruit → Worm → Mouse → Bird

Grass → Worm → Cricket → Mouse → Owl

[**Note :** One living thing can be a part of number of food chains. This gives rise to a food web in nature.]

Topic 5 : Family Values

Exercises

Q.1. (1) strength

(2) co-operation

(3) Tolerance

(4) learn and make progress

(5) human beings

(6) opportunities of progress

Q.2. (1) Everyone living in our surrounding has a role in making decisions about changes in our environment.

(2) Respecting opinions which are different from our own is called tolerance or broadmindedness.

(3) Considering boys and girls to be equal without discrimination is called gender equality.

(4) Food, clothing, shelter, health and education are the common needs of men and women.

- Q.3.** (1) (i) In the family, we must see to it that all members voice their opinions and their opinions are thoroughly discussed.
(ii) Each person is encouraged to say what he or she thinks about the subject.
(iii) Everyone's opinion is valued.
(iv) We talk to each other and consult with each other before the final decision.
- (2) When there are differences of opinions or disagreements we must not insist that we are correct, but we must try to understand the point of view of others and listen carefully to what the other person wants to say. In this way we learn to be tolerant. Respecting the opinions which are different from our own, is called tolerance or broadmindedness.
- (3) Honesty can increase efficiency in public life. Honesty is the best way to increase discipline and efficiency in public life.
- Q.4.** (1) Afreen is honest since she returned the pencil.
(2) Neha is dishonest. She is not only lying to her mother but also accusing her friend who is innocent.
(3) Mary showed honest behaviour.
- Q.5.** (1) Ask him to tell you where he wants to go. Direct him properly. If he cannot understand you, take him to the place he wants to go to.
(2) Tell him / her not to get worried. You and your friends will decide to share your tiffin with him / her.
(3) We will ask the people inside the lift to press the bell cyren, while we go and call the watchman and others to try their best and rescue the people stuck in the lift.

Topic 6 : Rules are for Everyone

Exercises

- Q.1.** (1) rules (2) customs of untouchability
(3) neglect (4) 1988
- Q.2.** (1) Rules are made to specify each person's duties and responsibilities.
(2) Values of non-violence and peace have been a part of our social life, since ancient times.
(3) Wrong customs and traditions, poverty and lack of education are the big obstacles in our country.
(4) In India, after independence, the voting age was 21 years.
- Q.3.** (1) The unjust customs that have been banned by law are :
Sati and child marriage, the use of magic to cheat people, receiving dowry, child labour and believing in superstitions.
(2) We are dependent on nature for most of our needs. Natural resources should be available in enough quantities for the future generations. Therefore, we must conserve these natural resources by using them carefully.
- Q.4.** (1) I think this is a good law because people have to go to bed early to wake up the next morning for their regular duties. Children have to study and some have to go to school.
(2) This is a must, since we have many families who cannot afford paying fees. If all children will be sent to school. The girl child also can get education.
(3) This is a good law as dumping garbage in the river pollutes the water and causes harm to sea animals and plants. It also causes harmful impacts on humans and land animals.

Topic 7 : Let us Solve our own Problems

Exercises

- Q.1.** (1) worse (2) issues (3) Hiware Bazaar
(4) efforts, co-operation
- Q.2.** (1) Problems faced by people in cities and villages are called problems or issues in civic life.
(2) These problems can be solved through everyone's efforts and co-operation.
(3) Sant Gadgebaba and Rashtrasant Tukdoji Maharaj were two of the great personalities who stressed on cleanliness.
(4) 21st September is celebrated as 'International Peace Day'.
- Q.3.** (1) 'Shramdaan' means, voluntary contribution of labour by the villagers to clean the village. It involves disposal of waste water and making of manure from garbage using vermiculture. This concept was successfully implemented in Khudawadi village in Osmanabad district.
(2) To create a peaceful society, the basic needs of all its sections need to be met. Each person must get the necessary security. All exploitation in society must be stopped and inequality must decrease.
Everyone must have the right to participate in public life. By learning the importance of peace and using peaceful methods, we can create a peaceful environment everywhere.
- Q.4.** (1) I will decide to maintain silence in the classroom in absence of the teacher and explain my classmates the need to co-operate with the class teacher.

- (2) I will help my classmates to revise the new topic taught the previous day and solve their queries if any.
(3) I will ask someone to go and call the sports master and the coach to solve the problem and in the mean time, I will try to keep the crowd under control.

- Q.5.** (1) There is water shortage.
(2) The garbage thrown on the road is giving out a foul stench. It is unbearable.
(3) The girl is riding her cycle on the main road. This is dangerous. It can lead to an accident since there is no special bicycle track.
(4) The boy is worried because there are problems in the village. There are land disputes and his father has to visit the taluka to get his problems solved.
- Q.6.** (1) Yes, there should.
(2) The head students of the four houses of the higher standards can be selected as peacekeepers.
(3) First of all the peacekeepers must be honest. They must not be biased and decision must not be taken by just a few of the peacekeepers.

Topic 8 : Public Facilities and My School

Exercises

- Q.1.** (1) responsibly (2) world (3) community
(4) unique, identity (5) home
- Q.2.** (1) Important public services are water supply, electricity supply, health services, education and transport, gas supply, telephone service, etc.
(2) Each child has the right to go to school and learn.
- Q.3.** (1) We use several public services and facilities such as water supply, electricity supply, education, transport, gas supply, telephone service, banks, etc.
(2) These two bodies are very important since they bring about a conversational interaction between parents and teachers. Parents can help in various activities of the school.
- Q.4.** (1) Boys will think they are superior. Girls will have no education or less education. This will make them feel inferior and they will be made to do the manual work at home. We must remember that education is the fundamental right of every child.
(2) School will not get help for its set up. School will not get help from community for its growth. School will not have assistance in the construction of classrooms, libraries, laboratories and procurement of sports equipments.
(3) The services will not be able to work well for the community. We as citizens will be responsible if the services do not work well.
- Q.5.** (1) Public facilities available inside the home are water supply, electricity, telephone.
Public facilities available outside the home are health



services, education, transport, postal service, fire brigade, police, bank, park, etc.

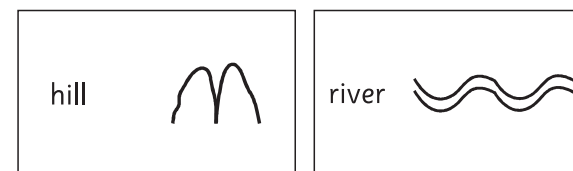
- (2) The facilities we use are water supply, electricity, education, transport, park.

- Q.6.** (Student are expected to answer this question with the help of their teacher.)

Topic 9 : Maps – Our Companions

Exercises

- Q.1.** Hill, plateau, plain. (Student can do map B of geography textbook page no. 39.)
- Q.2.** (a) Mount -  Symbol. (b) Island -  Symbol.
- Q.3.**



Q.4. Blue colour. Blue colour is used for water and water bodies. Moderate should have been darker and low should have been a lighter shade of brown.

Q.5. (To be done by students.)

Q.6. (1) In map A, the height of the land is been shown by contour lines.

(2) Colours have been used in the map B, to show the difference in the heights of landforms.

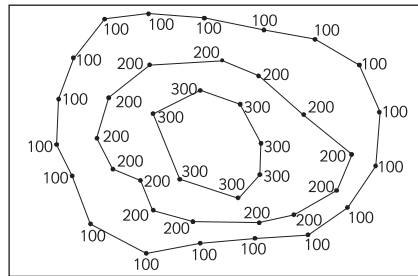
(3) Map C, is different from the other two maps because in this map the difference in the height of landforms can be directly observed.

(4) The highest point in map A, B, and C is in the south direction.



(5) The landforms can be seen most clearly in the map C.





- Q.7. (a)** Sarva Shiksha Abhiyan **(b)** Doordarshan
(c) Toilet **(d)** Hospital
(e) School **(f)** Balbharati

Q.8. (1) Contour line method.



(2) The required map is India – Physical map on textbook Pg. 45.

- (3) (1)**  lighthouse (symbol)
(2)  fort (sign)

- (3)**  battlefield (symbol)
(4)  railway (symbol)
(5)  well (sign)
(6)  spring (sign)

Q.9. (1) They are (a) Contour line method, (b) Layer tinting method, (c) Digital elevation model.

(2) It is measured from sea-level.

(3) Each colour indicates a specific height.

(4) Physical maps are used in military operations, tourism, drawing up mountaineering routes, making regional development plans, etc.

(5) The use of signs and symbols in a map helps the reader to get exact information about the places on the map.

Topic 10 : Getting to Know India

Exercises

- Q.1. (1)** There are coffee plantations in Kerala.
(2) Konkan lies in the western part of India.
(3) Goa is the smallest State in India.
(4) The Sabarmati river flows through Gujarat.
(5) The Sahyadri mountains are located in Maharashtra and Karnataka.

Q.2.

Rivers	States
Ganga	Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal.
Beas	Himachal Pradesh and Punjab

Narmada	Madhya Pradesh, Maharashtra, Goa
Godavari	Maharashtra, Telengana, Chhattisgarh and Andhra Pradesh.
Krishna	Maharashtra and Karnataka.
Kaveri	Maharashtra and Tamil Nadu.
Brahmaputra	Assam and Arunachal Pradesh.
Sabarmati	Rajasthan and Gujarat

- Q.3. (1) (a)** The mountains are the Himalayan Range, Shiwalik range, Karakoram range, Zaskar mountains, Ladakh range, Aravalli range, Vindhya mountains, Satpura range, Ajanta range, Eastern Ghats, Western Ghats and Harishchandra range.
- (b)** Garo, Khasi and Jaintia hills, Nallamalai hills, Rajmahal hills, Dajfla hills, Mizo hills, Naga hills, Abu hills.
- (c)** Telengana plateau, Deccan plateau, Malwa plateau, Chota Nagpur plateau, Bastar plateau.
- (d)** The rivers Gilgit, Shyok, Jhelam, Ravi, Satluj, Ghaggar, Beas and Chenab originate in the Himalayas and join the Indus. The height is over 6000 m. and they flow towards the east.
- (e)** Rivers Kaveri, Krishna.
- (f)** Lake Chilka, Pulicut lake, Vembanad lake, Rakas lake, Pangang lake, Kolleru lake.
- (g)** Gulf of Khambhat and Gulf of Kachchh on the western coast of India, Gulf of Mannar between India and Sri Lanka to the south.
- (i)** To the east is the Bay of Bengal. To the west is the Arabian Sea and to the south is the Indian Ocean.

(j) River Ganga flows towards the east, River Narmada flows towards the west, Vainganga flows towards the south and Godavari and Kaveri flows towards the east.

(k) Chettlon, Andron, Kalpeni and tree island lie in the Lakshadweep. Car Nicobar, South Andaman, cocoisland North Andaman and middle Andaman lie in the Andaman and Nicobar islands.

- (2) (a)** Our State - Maharashtra. Capital - Mumbai.
- (b)** Jammu and Kashmir.
- (c)** Tamil Nadu.
- (d)** Arunachal Pradesh – Itanagar, Meghalaya – Shillong, Nagaland – Kohima, Manipur – Imphal, Mizoram – Aizwal, Tripura – Agartala, Assam – Dispur.
- (e)** Rajasthan – Jaipur.
- (f)** The names in red letters show union Territories.
- (3) (a)** We will get saffron from Jammu and Kashmir. The most convenient route is the National highway.
- (b)** Tea is grown in Assam and Sikkim.
- (c)** Cloves have to be brought from Kerala to Maharashtra. We can use the highway along the coast line passing through Karnataka and Goa.
- (d)** Apples are grown in Jammu and Kashmir and Himachal Pradesh.
- (e)** First take the east west corridor that connects the National Highway right to Bikaner in Rajasthan. The path moves in the North West direction.
- (f) Coffee** - from Kerala by the help of N. South corridor (orange line) up to Nagpur and then the National Highway up to W. Bengal.

Mangoes - Using the Golden Quadrilateral (green line) or part of the Golden Quadrilateral and then the National Highway (Black line).

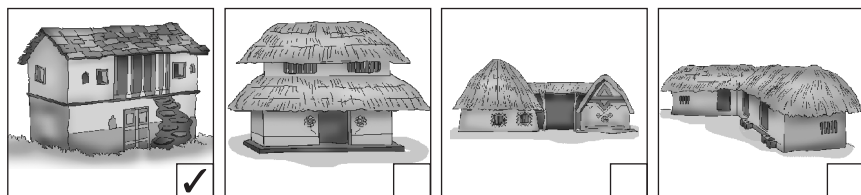
(g) With the help of National Highway up to West Bengal and then with the help of East West corridor.

- Q.4.** (1) Telangana.
 (2) We had 29 states and 7 union territories, but now i.e. after 2019, we have 28 state and 8 union territories.
 *Teacher please note this.
 (3) Rajasthan.

Topic 11 : Our Home and Environment

Exercises

★Q.1. (a)



The house is a small one. It will be able to stand against the force of the strong wind. It is made of mud and stone that is available in mountainous areas.

(b) (c) Iron / cement / mortar / bricks.

Q.2. (3) Climate (2) Structure (1) Luxury.

- Q.3.** (1) Water filter, balcony where there is sunlight, plants in the garden, wooden structure, wooden steps.
 (2) The water heater, the washing machine, the grinder.
 (3) (a) Digging up hills for quarrying. (b) Extracting sand

from seashores and riverbeds (c) Extracting stone and earth from the ground. (d) Drawing out excessive amounts of groundwater. (e) Felling trees to clear land (f) Filling up ponds, lakes, streams, rivers, creeks and low lying areas to reclaim land.

Q.4. Air, water, noise and environmental pollution takes place at a construction site due to cement mixing machines chugging on non-stop and cement dust, mud and sand flying around.

Q.5.

Sr. No.	Region	Type	Shape / Construction	Building material	
				Roof	Walls
(1)	Plains	Flat-roofed houses	Rectangular	Wood, earth	Stone, earth
(2)	Plateau	Sloping roofs	Rectangular	Wood, hay	Stone, earth
(3)	Heavy rainfall	Sloping roofs	Rectangular	Wood, tiles	Bricks, cement
(4)	Mountains	Sloping roofs	Rectangular	Wood, tiles	Bricks, cement
(5)	Desert	Flat-roofed house	Rectangular	Cement	Stone, earth

Q.6. (1) Ajit and his family will have to close their window during the daytime for some days and keep dusting their house everyday till the dust and noise reduces.

(2) We must use natural resources. We must use energy from solar power or wind power to make our bricks and cut wood. We must not cut trees but use wood from trees that have uprooted. Our homes must be eco-friendly. We must use recycled water and recycled garbage.

Q.7. They use their nests as homes to protect themselves from the sun, wind, storm, rain and to lay and hatch their eggs.

Topic 12 : Food for All

Exercises

- Q.1.** (1) 60 (2) Fertilizers
(3) nectar, honeycomb (4) Dr. M.S. Swaminathan
(5) organic farming
- Q.2.** (1) - (c), (2) - (a), (3) - (b)
- Q.3.** (1) Improved seeds are developed through research. These seeds have higher yield and can resist pest attacks. Some varieties become ripe for harvesting in a shorter period of time, while some give a higher yield even with low water supply.
- (2) Drip irrigation and sprinkle irrigation are two modern methods of irrigation. The drip irrigation makes use of pipes with holes. This ensures that the required amount of water drips only near the plants, thus full use is made of the available water.
- Sprinkle irrigation makes use of sprinklers of different sizes that spray water directly on plants.
- (3) The drip irrigation makes use of pipes with holes. This ensures that required amount of water drips only near the plants, making full use of the available water.
- (4) Excessive fertilizers may have harmful effects on crops. The accumulation of excessive chemicals in the soil lowers the fertility of the soil and crops get affected.
- Overwatering makes the land saline and fallow. Hence, it is better to avoid excessive use of fertilizers and water.
- (5) Diseases and pests damage crops. As a remedy, insecticides and pesticides are sprayed on crops, or certain chemicals are rubbed on the seeds before sowing.

- (6) (a) If the same crops are grown frequently in a field, the fertility of the soil decreases. (b) Overuse of chemical fertilizers leads to accumulation of excessive chemicals in the soil and reduces its productivity. (c) Overwatering makes the land saline and fallow and reduces the soil fertility.
- (7) (a) Now-a-days improved seeds are developed through research. They can resist pest attacks, take shorter time for harvesting and give higher yield with low water supply. (b) Drip irrigation and sprinkle irrigation make full use of the available water. (c) Today, chemical fertilizers are used for quicker growth and higher yields.
- (8) (a) The foodgrains are dried well and filled in sacks and stocked. (b) To prevent damage, protective chemicals are mixed with the grains and neem leaves too are mixed. (c) Storage places are kept dry and airy to prevent fungus formation.
- (9) Water from rivers, lakes and wells is used for irrigation in addition to rainwater. Greater quantities of water are stored by building dams and bunds on rivers to obstruct the flow of water in the downward direction.
- Drip irrigation and sprinkle irrigation are the two new methods of irrigation used. They make full use of the available water.
- (10) The farming that relies on natural (organic) materials is called organic farming. It is a form of traditional agriculture. In this method, nutritive substances present in the soil are retained. Food grains grown by this method are nutritious and have good taste.

- Q.4. (1) Incorrect.** Today, there are modern improved methods of agriculture, viz. drip irrigation, sprinkle irrigation, etc.
- (2) Correct.**
- (3) Incorrect.** Use of improved seeds gives a high yield even with a low water supply.
- Q.5.** (i) The water holding capacity of soil in a pot at home is less than garden soil. Hence, it is important to provide sufficient amount of water by watering it twice daily.
- (ii) The plant should be kept in sufficient sunlight.
- (iii) Care should be taken that insects or pests do not harm the plant.
- (iv) Add manure to the soil in the pot.
- Q.6. (1)** (i) Wattle and daub baskets have holes on their surface.
- (ii) The presence of holes ensures continuous air flow and circulation.
- (iii) The food grains do not become moist and are kept dry.
- (iv) Lack of moisture and humidity means less chances of fungus growing on the food grains.
- (v) The dry and airy conditions also mean less chances of insect attack on grains.
- (vi) Wattle and baub baskets help preserve food grains for a long time.
- (2)** (i) We store food grains in the house so that we have sufficient quantity of them. This helps save valuable time and we do not need to go to the grocery store.
- (ii) Also, foodgrains are stored for emergencies and disasters. For example, floods, earthquake, etc.
- Q.7.** Chemical fertilizers are also known as artificial fertilizers. They are mixtures of different chemical substances in specific proportion, useful for agriculture. Chemical fertilizers are used for quicker growth and higher yields. However, excessive use of chemical fertilizers leads to its accumulation in soil. This reduces the soil fertility and productivity.

Topic 13 : Methods of Preserving Food

Exercises

- Q.1. (1)** expiry **(2)** masalas **(3)** fungus
- (4)** micro-organism **(5)** Grains
- Q.2. (1)** Drying, cooling, boiling, placing in airtight containers, as also adding preservatives to them are the different methods of preserving food.
- (2)** If we eat spoiled food, the micro-organisms in the food will act on us and we will suffer from stomach pain, food poisoning, dysentery, diarrhoea, vomiting, etc. The poisoning may even prove fatal.
- (3)** Fruits do not remain fresh for a long time. If the fruits are preserved in the form of jams, we can still savour the taste of the fruit at home.
- (4)** Preservatives are certain substances added to food in order to prevent them from getting spoilt or from decomposing. They make the food last longer.
- (5)** garlic - is a bulb of the plant ginger - is the root
 cardamom - seed clove - fruit of the tree
 pepper - fruit
 fenugreek - seeds of the plant
 cinnamon - is obtained from the bark of the tree
 saffron - stigmas of the flower
- Q.3. (1) Correct**
- (2) Wrong** - Our food gets spoiled when micro-organisms begin to grow in it.
- (3) Wrong** - Fruits dried in summer can be used for the rest of the year.
- (4) Wrong** - When placed in a fridge, food becomes cold and micro-organisms do not grow.

- Q.4. (1)** Put the papad to dry in the open air, under the sun.
These can be used throughout the year in the form of jelly, sauce, mixture preserved in vinegar or as jam.
Peas can be frozen and conveniently used throughout the year.
- Q.5.** Semolina (shevaya) has low moisture content. Hence, it can be stored for a long time as it remains unaffected by micro-organisms. However, making kheer involves mixing semolina with milk. Due to the high moisture content, micro-organisms grow leading to its spoilage.
- Q.6. (1)** We say that foodstuff is spoiled when it emits a foul smell or it has an unpleasant taste. The taste and colour of spoiled food changes completely.
- (2)** Yes, the time in which foodstuffs get spoiled is different in different seasons. Foods get spoiled quickly when the temperature is high and humidity is more. Hence, foodstuffs gets spoiled quickly in summer and monsoon than they do in winter.
- (3)** Milk and milk products, vegetables, fruits, meat, fish are foodstuffs that get spoiled more quickly.
- (4)** Salting, freezing, cold storage, drying, and canning are some of the measures taken to keep the foodstuffs in the house in good condition.
- Q.7. (1)** Storing food in the refrigerator is a method of food preservation. When food is placed in a refrigerator, micro-organisms do not get the warmth they need for growth.
- (2)** The chapati kept in a box creates favourable conditions for the growth of fungus. Spores of the fungus are present in air and water. The cotton wool-like fibrous growth seen on the chapati is the growth of fungi due to the availability of food, water, air and warmth.

Topic 14 : Transport

Exercises

- Q.1. (1)** air, noise **(2)** trade **(3)** Air pollution
(4) scorched **(5)** LPG, CNG
- Q.2. (1)** An excess of the poisonous gases in the air lowers the quality of air in the environment. This is air pollution.
(2) CNG : Compressed Natural Gas, LPG : Liquefied Petroleum Gas.
- Q.3.** Transport facilities helps us to save time and effort that we would have spent walking. Our work gets done faster. Transportation of goods gets done smoothly. Tourism has increased facilities of health and education has improved.
- Q.4. (a)** Imported goods are available at our local markets.
(b) Quick transport facilities have made it possible to visit malls and markets.
(c) Basic necessities are supplied on time.
(d) Transportation to commute to nearby places have become easier.
- Q.5. (a)** Visit nearby markets and schools walking.
(b) People working in the same area must share a vehicle or a cab.
(c) Leaving early for work or school can help since we can leisurely walk the distance.
- Q.6. Mahalaxmi race course area**
The race course is huge. There is road only on one side. The other side is surrounded by trees and the Arabian Sea. Cars are allowed only in the parking section. There is no noise, no smoke and no honking. Hence, it is least polluted.
- Q.7. (a)** The bus is causing pollution.
(b) Check the different parts of the engine. Stop using petrol or diesel and use CNG or LPG.

Q.8. The remedies for pollution due to transportation are :

- (1) Using fuels that cause less pollution eg. LPG or CNG.
- (2) Timely maintenance and repair of vehicles.
- (3) Using public transport as far as possible.
- (4) Using private vehicles only when necessary.
- (5) Planting trees.

Q.9. The advantages of transportation are :

- (1) Work gets done sooner.
- (2) Time and effort are saved.
- (3) Trade is facilitated.
- (4) Different parts of the world are now connected due to transport facilities.
- (5) The transport of goods even on a global level has become simple and easy.
- (6) The facilities of tourism, health, education, etc. have become speedier.

The disadvantages/harmful effects of transportation are :

Transportation pollutes the air and environment drastically :

- (1) Trachea, lung and eye disorders, e.g. burning of the eyes.
- (2) The growth and development of plants is affected adversely .
- (3) Constant traffic harms the habitat of plants and animals living there.
- (4) Sound pollution due to transportation causes restlessness, irritability, headaches, lack of concentration, psychology disorders etc.

Q.10. Bicycle gives us physical exercise, it does not cause pollution. It saves money, it can be kept in a small place. It does not lead to crowding on roads. It does not hinder traffic.

- Q.11. (1) (a)** The children have stopped on the divider.
(b) The children have stopped on the divider because they are unable to cross the road due to constant moving traffic.
(c) The children are rubbing their eyes and covering their ears because of dust and noise.
(d) The smoke from the vehicles and the honking sound is troubling the children.
- (2) (a)** The leaves close to the road have lost their freshness and appear dull.
(b) The colour of the leaves have turned brown due to layers of dust being settled because of continuous moving vehicles.
(c) The plants on the roadside have fewer leaves as their growth is being affected due to pollution.
- (3) (i)** **(ii)** **(iii)** **(iv)**

Q.12. (2) ✓ (3) ✓

Topic 15 : Communication and Mass Media

Exercises

- Q.1. (1)** Artificial satellites **(2)** communication
(3) feelings **(4)** forewarned
(5) peace, order

Q.2. (a) We get information, meanings, answers to tricky problems with the flick of a button instead of turning pages of books.

- (b) We can save a lot of time and effort when exchanging information.
- (c) Students can become aware about matters relating to food, clothing, shelter, education and health.
- (d) We can be made aware of health, educational facilities and all the good things happening in society.

Q.3. Before the telephone, we had to use the post and this took awfully long. Communication was done by means of post cards or letters posted in envelopes.

Q.4. The difference is so great that it is unbelievable. Formally we had to turn pages to find out a meaning or a map or some information. Today this can be done with a touch on the screen or just a small jab with your finger. Long notes can be either recorded or typed. Things have really become very easy today. Communication with my friends and relatives abroad has also become very easy.

Q.5. (1)



Happy

Angry

Sad

Fearful

- (2) (a) The means of communication that are being used are video camera, artificial satellite, dish antenna, television, newspaper and radio.
- (b) The different kinds of information we can obtain from a newspaper are educational, political, cultural, social, economic and entertainment.

- Q.6. (a)** Amod's mother will feel better when -
 - Amod gets engaged in other outdoor sports like swimming, jogging, cycling etc.
 - he follows a proper diet.
 - he keeps himself busy in activities like watering the plants, helping his mother, etc.

Q.7. The four advantages of telecommunication and mass media are :

- (1) We can easily contact people living far away from us.
- (2) People can be forewarned about natural disasters like storms, tsunami, floods, etc.
- (3) Awareness can be raised about matters related to food, clothes, shelter, education and health. This improves people's way of life.
- (4) Mass media helps in the expansion of trade and industry.

Q.8. Few disadvantages of telecommunication are :

- (1) Disorder of the eyes, ears and back due to excessive use of television, computer, mobile phones, etc.
- (2) People can go through psychological disorders and isolation.
- (3) Information provided through television channels can be misused to disturb the peace and order in society.
- (4) Negligence of outdoor sports which may adversely affect the physical health.

Topic 16 : Water

Exercises

- Q.1.** (1) Sewage, diseases (2) evaporates
(3) natural (4) Water
- Q.2.** (a) **False.** We get rainwater only during the rainy season.
(b) **True**
- Q.3.** (1) Humans and animals suffer from scarcity of water. There is no water for agriculture. The water level in rivers, wells, lakes, bunds and dams fall. There is no water for drinking and agriculture. Grain and fodder becomes scarce. People suffer lots of hardships. Animals and plants also suffer.
- (2) Rain water must be allowed to percolate into the soil. This will help trees to get water and will help fill the wells too. Dams can be built. The government and the people, together build reservoirs, do contour bunding and construct bunds or bandharas, etc. Rainwater falling on roofs is collected in large tanks, etc.
- (3) It is necessary to stop rainwater because this water has to be collected to meet the entire year's need. When the rainwater is stopped, only then the water will percolate into the soil and fill up the wells.
- (4) In order to meet the whole year's needs, rainwater must be stored. Taking steps to ensure that rainwater will be available even in the period after the rainy season is called 'water management'.
- Q.4.** (1) The sugar will dissolve, the sawdust and part of the soil will be at the bottom of the glass as sediment and the water will get a brownish colour.
- (2) The three states of water are liquid, solid and vapour.
- (3) Drinking water must be treated well so that the impurities and micro-organisms die. Water must be purified and filtered so that it becomes clean for drinking. At home level, we must filter and boil the water before using it for drinking.
- Q.5.** (1) Bottled water has to be carried in the vehicles for the trip, and distributed with caution or water has to be boiled over wood fire.
- (2) Soil in a garden gets washed away with the water due to the slope of the land. When this happens, it means the fertile soil is getting drained away. This must be stopped. A bund has to be built so that the soil does not get carried down but remains in the same place.
- Q.6.** The entire road and complete footpath must not be paved and tared. There must be some portion of earth and mud that will enable the water to seep down into the earth. If these areas are at a slant, the rainwater will come down the inclined roads and slowly seep down the muddy path into the ground.
- Q.7.** (1) Soap, shampoo, washing detergents, left over food materials (particles), dirt from soiled clothes, urine, excreta, and other contaminants, are mixed in the waste water drained out of the kitchen and bathroom in your house.
- (2) If it did not rain for a very long period of time, the following effects could be seen on the life of people staying there:
There will be droughts like conditions and animals and humans will die. Plants will wither away with no water, hence there will be no food. This will lead to famine.

Q.8. The water in rivers and lakes gets polluted due to discharge of effluents and waste water, mining activities, industrial wastes, pesticides and chemicals, etc.

Topic 17 : Clothes – Our Necessity

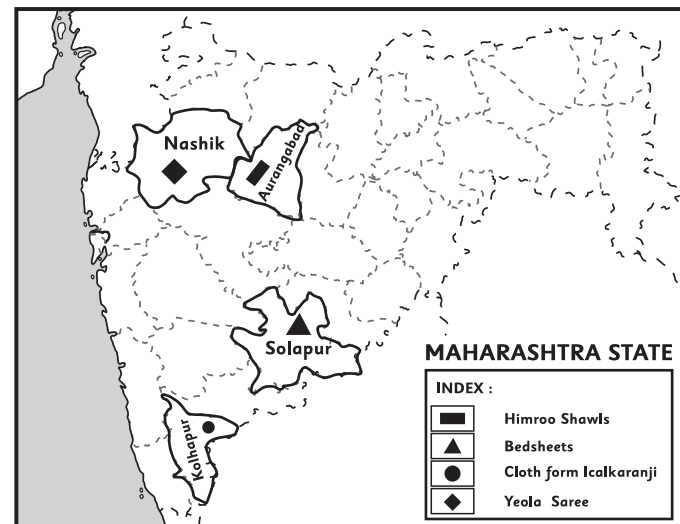
Exercises

Q.1. (1) Water bottle (2) Ball (3) Bicycle (4) Tiffin box. I shall use all these for myself. I would like to have the other articles too, but not now. I am only in the 5th Std. There is time for the other articles.

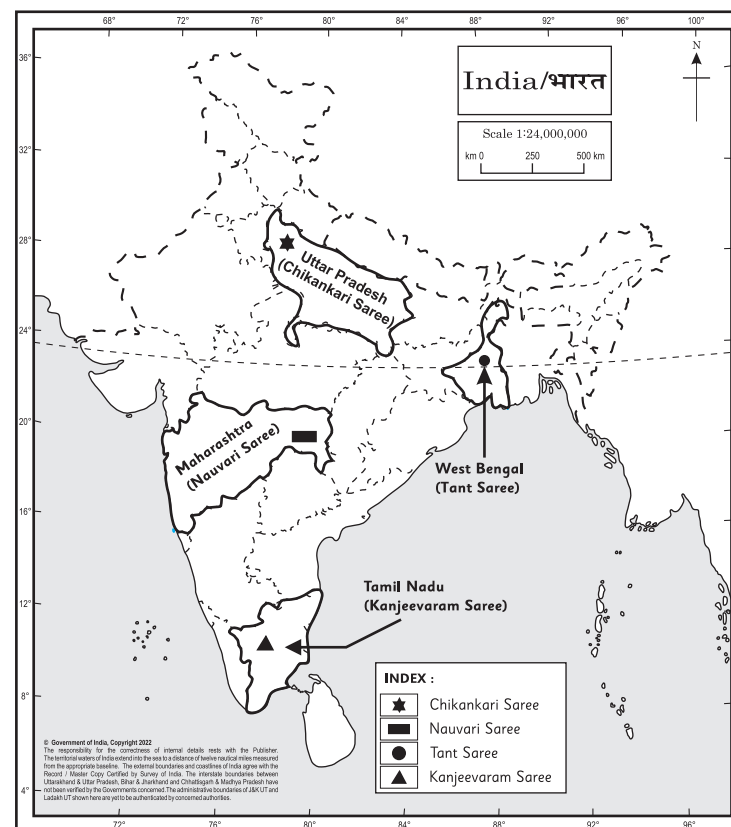
Q.2. I would like to wear typical Maharashtrian clothes. Nine yard sari with all the jewellery or dothi kurti along with the 'topi'.

Q.3.	State	Fabric / Garment
	Maharashtra	Paithani sarees and dhoti kurta
	Gujarat	Bandhani sarees
	Punjab	Chikan shalwar khameez, kurtas
	Odisha	Silk ikat fabrics, sambalpuri sarees, bedsheets
	West Bengal	Bengali saree
	Karnataka	Mysore silk, sarees and kurtas

Q.4.



Q.5.



Q.6. Rohan and Sanina's problem can be solved –

- (1) by giving their clothes to the needy.
- (2) by giving their clothes to the orphanages.
- (2) by reusing the clothes to make dusters for cleaning.

Topic 18 : The Environment and Us

Exercises

- Q.1.** (1) land (2) environment (3) Flamingos
(4) Great Indian Bustard (5) Sharanvan

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

- Q.3.** (1) False (2) True

- Q.4. Natural** : Soil, horse, stone, water hyacinth, sunlight, dolphin, water, trees.

Man-made : Book, pen, chair, cottonwool, table, brick.

- Q.5. (1)** The movement of animals or people from one place to another, either temporarily or permanently is called migration.

(2) Stage 1 - The first stage in the lifecycle of a bird is the egg. The egg hatch into hatching (baby bird)

Stage 2 - The hatching grows and matures into a nestling. The nestling is still cared and fed by the parent birds.

Stage 3 - Young bird learns to fly and starts living independently.

Stage 4 - The mature bird reaches its full size.

Stage 5 - The bird becomes old. This is the last stage in the bird's lifecycle.

- (3) (a)** Chemical fertilizers and pesticides used on a large scale for agriculture.

- (b)** Smoke and poisonous gases released due to burning of fuels in vehicles.

- (4)** Land obtained by clearing forests is used for agriculture, housing, industry and for building roads and railways.

- (5)** If forests are reduced, biodiversity gets depleted.

- (6)** Areas that are reserved for the purpose of protecting and conserving the biodiversity of a region are called 'biodiversity parks'.

- (7)** Some areas which are important for the protection and conservation of wild-life are reserved for them. These are known as National Parks.

- (8)** Certain forest areas reserved for the protection and conservation of a particular animal or plant are known as sanctuaries.

- Q.6. (1)** Due to human intervention in nature, large scale changes are taking place in the air, water and land. The existence of living things is threatened. The balance of the environment is getting disturbed. Many animals on earth are becoming extinct. This is a threat for all of us, hence, it is our duty to see that we conserve the living components of the environment.

- (2)** (i) Forests are being reduced to fulfil the needs of the increasing population.

(ii) Forests provide food and shelter to animals

(iii) Since the forest cover is getting less day by day, wild animals are becoming less.

- (iv) Deforestation along with various others human activities are creating an imbalance in the environment.

This is responsible for the fall in the number of wild animals day by day.

- Q.7. (1) (a)** If forests are cleared on a large scale, there will be less rainfall in the region, thus resulting in dwindling water and food sources for living things.
- (b)** All the needs of living things are met by the forests. If forests are reduced, living things will be forced to seek shelters elsewhere.
- (c)** The space occupied by plants and animals will decrease, because this place will be used for agriculture, housing, industries, roads and railways.
- (d)** The number of living things will decrease. If forests are reduced, biodiversity will also get depleted
- (2)** Industries and factories use fuel in large quantities, this gives out tremendous amount of carbon dioxide. Fuels burned in vehicles gives out carbon monoxide. Industries release poisonous gases in the air.
- (3)** Petrol, diesel and compressed natural gas (CNG) are used by vehicles. Coal and wood are used for burning. Kerosene, diesel and coal are used in factories. Industries and factories use different types of fuels.
- (4)** The link that is missing in the given food chain is green grass or plants. If green plants or grass are not available, the number of grasshoppers that eat leaves will become less or may even get extinct.

If the population of grasshoppers decline, the population of birds will diminish too as they won't get enough food. Hence, if one organism (living thing) becomes extinct, it will result in imbalance of the entire food chain and ecosystem.

- Q.8.** Water hyacinth negatively affects the aquatic life and water quality in rivers and lakes. It grows mainly in water bodies which are polluted due to mixture of detergent. The growth of water hyacinth results in depletion of oxygen from the rivers and lakes. It is important to remove water hyacinth from the rivers and lakes and put a ban on waste water from households and washing clothes and utensils near water bodies.
- Q.9. (1)** If kites (birds) are no longer present in a particular region, the number of small animals like rodents, earthworms, amphibians and small birds on which the kites feed on will increase. Hence, if there are no kites in a particular region, the population of the other organisms will increase.
- Since kites prey on the other animals, it would not cause a decline in population of other living things.
- (2)** When a dam is built at a particular place, it will negatively impact the aquatic life. The biodiversity in the region will be lost. Construction of dams will also result in submerged forests. The entire aquatic ecosystem will get affected. Dam construction changes the water flow, transparency, and temperature, thus leading to loss of flora and fauna.

Topic 19 : Constituents of Food

Exercises

- Q.1.** (1) Vitamins (2) strong (3) sugars (4) balanced
- Q.2.** (1) -(b); (2)-(d); (3)- (c); (4)- (e); (5)-(a)
- Q.3.** (1) The sugar obtained from digestion of starch gives us energy to do work.
- (2) The bran of the grain, fruits and vegetables - especially their skins, whole grains and pulses are all sources of fibre in our diet.
- (3) The three types of substances present in our food- starch, sugar and fibre are together called carbohydrates. They are necessary since they provide the body with energy.
- (4) For our body to be well-nourished, we must get all the different food constituents in the right quantities. If a person's diet lacks some constituents over a long period of time, that person does not get proper nourishment. This condition is known as malnutrition. Such people are constantly tired and cannot cope up with daily tasks.
- (5) Fibrous substances help the food to move forward in the alimentary canal at the right speed. They help in the formation of stool from this undigested food.
- Q.4.** (a) **Minerals** : eggs, vegetables, fruits.
(b) **Proteins** : yoghurt, milk, eggs, fish, meat.
(c) **Starch** : cereals like jowar, bajra, wheat.
- Q.5.** (1) Diet is the different constituents we have in our food in the right proportion. A balanced diet must contain, carbohydrates, fats, proteins, vitamins and minerals in the correct proportion.
- (2) We need food to live and grow and to get energy, to do our work.

- (3) Food may be sweet, salty, oily, fibrous, sour.
- (4) We experience different tastes with the help of taste buds found on the tongue.
- Q.6.** (1) We use either sugar or jaggery or honey to sweeten our food.
- (2) Beetroot, most of the ripe fruits like mangoes, banana, chickoo. Milk is also sweet.
- (3) Roti or Chapati along with some vegetable and rice and dal followed by a small sweet or a fruit is served for mid-day meal in order to provide all the necessary constituents of food to the children.
- (4) Fragile articles are highly vulnerable to damage during fall, jerks, or shaking during transportation from one place to another. When packed with corrugated cardboard, thermocol, or bubble wrap, the articles inside the boxes are not damaged even when the boxes shake, fall, or collide with each other.
- Q.7.** Proteins form the building blocks of the body. There is continuous wear and tear of the body. Sometimes, there are bodily injuries as well. Proteins are necessary for the healing and repair of the body that goes on continuously. Hence, the body requires an adequate quantity of proteins.
- Q.8.** (1) During winter, the temperature is low. Due to this, we need more energy (sugar) to keep the body warm. This makes us feel hungrier in winter since there are not enough nutrients in the blood to keep the body warm. On the other hand, the body is sufficiently warm during summer, hence we feel less hungrier.

- (2) The padding of cloth under the mortar and floor serves as a shock absorber and protects the floor from any damage during pounding.
- (3) It depends on what vegetables are being used to make the dish. If the vegetables give us carbohydrates, fats and proteins, the outer layer will give us protein and the ghee will give us fat. Yoghurt too will supply us energy, proteins and fats, hence this will become a balanced meal.
- (4) Puffed rice (murmura) – carbohydrates; sev and farsan – proteins and fats; gram and peanuts – proteins; tomatoes, onion, coriander – vitamins and minerals; chutney – sugar and minerals.
- (5) Milk is rich in calcium and phosphorous which makes bones and teeth healthy and strong in children. It also has a lot of proteins and is vital for the overall growth, health, and development of children. Hence, children are told to drink milk everyday.

Topic 20 : Our Emotional World

Exercises

- Q.1.** (1) emotional
 (2) good qualities or virtues
 (3) emotions
 (4) think properly
- Q.2.** (1) When we learn to cope with our emotions, our personality becomes balanced and our ability to understand others increases.

- (2) When we become short-tempered and stubborn, our attitude of co-operation and understanding decreases and we hurt people.

- (3) We must try to get rid of our flaws or try to correct them.

- Q.3.** (1) Emotional adjustment involves coping with our emotions e.g., we get very angry, but we must not lose our temper. We must be able to strike a balance between our thoughts and our emotions. We must be able to control our emotions and express them in a reasonable manner.

- (2) If we get angry very often, or if we cannot control our anger, it can have adverse effects on our body and mind. We become short-tempered and stubborn. Our attitude of co-operation and understanding decreases and we hurt others. We also face consequences of headaches, loss of sleep and dullness.

- (3) We may be good at something and not very good at another. We must know our flaws as well as our talents so that we can improve upon them. Just because we are unable to do something, it does not mean that we stop trying to excel at what we can do.

Once we know our flaws, we can try to correct them ourselves.

- (4) Our personality becomes balanced, our ability to understand others increases and we can overcome adverse conditions.

- Q.4.** (1) I will keep patient and do my work well, in order to impress my teacher.

- (2) I shall be very glad and happy that my parent considered me worthy of giving my opinion.

- (3) I will be very happy for her and I will convey to her all my best wishes.
- (4) I will be very happy and delighted. I will do my best to live upto their expectations.
- (5) I would be very annoyed and irritated but I will keep myself calm and try not to say something in return to him.

- Q.5.** (1) I will be very happy for her and very proud to be her friend. I will congratulate her and wish her all the best in her future endeavors.
- (2) I will try to pacify her, and make her understand, that anger is very bad for her system. If she keeps on getting angry she will become physically as well as mentally sick. I will try to make her understand that anger is not good and she should not let her anger interrupt her meals.
- (3) Veena must mix about with the others in school or she will become an introvert. If she does not mix about, she will not have friends to confide in or people to play with. She will always be a loner.
- (4) I will tell Makarand that he is wrong. If he knows his flaws, he must correct them and change himself. It is in his power to do so, he has to become a better person and give up being stubborn.

- Q.6.** (1) (a) I will try to pacify them and tell them that both will get a chance to sit on the first bench. One of them can do so for the first week and the second one can do so for the second week.

- (b) Explain to Hemant that he should become bold. I will try to make him understand that he must speak to the teacher and request him to give him a chance. I think, I shall go and speak to the teacher for Hemant.
- (c) I'll explain to Nisha that it was not done on purpose and ask her not to get annoyed with Rekha.

(2) (a) ✓ (b) × (c) ✓ (d) ✓

- (3) This is absolutely wrong. Manoj is lying. He must be told not to do so.
- (4) I will tell her that this is a very bad habit, that she must change. This bad habit will get her into trouble in life.

Topic 21 : Busy at Work - Our Internal Organs

Exercises

- Q.1.** (1) Oxygen (2) bag (3) alveoli
(4) lung cancer (5) ulcers
- Q.2.** (1) - (b); (2) - (d); (3) - (a); (4) - (c)
- Q.3.** (1) Diaphragm (2) Circulation (3) Trachea
- Q.4.** (1) The respiratory system, the digestive system, the circulatory system, the nervous system are the main systems. There are other systems such as the skeletal system, and excretory system that are equally important.
- (2) (a) When the outside air reaches the alveoli, the oxygen in it passes into the thin blood vessels around the alveoli.

- (b) Along with blood, it passes to all parts of the body.
- (c) The carbon dioxide brought by the blood from all parts of the body enters the air in the alveoli.
- (d) When we exhale, carbon dioxide is given out.

- (3) In the mouth, the saliva helps to convert the food into a soft moist ball called a bolus, which is easy to swallow. This digestive process is carried out by the saliva, hence, it is a digestive juice.
- (4) The process of keeping the blood flowing through all parts of the body is known as 'blood circulation'.
- (5) The skeletal system gives support and shape to the body and protects the important internal organs.

The excretory system expels the waste substances that are formed in the body.

- Q.5.** (1) I suddenly feel thirsty and also hungry. I feel like urinating when my bladder is full. I suddenly remember that I have to finish my homework.
- (2) The organs involved in respiration are the nose, trachea, lungs and diaphragm.
 - (3) We feel some pangs in our stomach. We feel emptiness in the stomach and weakness which produces the urge to eat.
 - (4) The nerves present in the nose and mouth send a message to the brain, which in turn, send a message to the salivary glands to secrete saliva.
 - (5) Maintaining co-ordination and ensuring that all functions occur at the right time and in the right manner is the function of the brain. There is a network of nerves that carry messages to and fro between the

brain and various body parts. The nervous system functions to co-ordinate the different body functions such as digestion, respiration and blood circulation.

- Q.6.** Firstly, the person has to get air. It is very important that oxygen enters his lungs or he will suffocate, hence the crowd has to be moved back and the area has to be kept open and airy. Splash a little water on the person's face. The sudden cold splash will bring the person back to consciousness. Give the person a little water to drink.

If he / she still doesn't get revived, the person must be taken to a doctor or hospital immediately.

- Q.7.** (1) The organs of the digestive system are mouth, oesophagus, stomach, small intestine, large intestine, rectum and anus.
- (2) The respiratory system, the digestive system and the circulatory system work together to provide the body with energy. The nervous system of which the brain is the main part co-ordinates all the functions of the body.
 - (3) The inner lining of the respiratory organs has fine hair-like structures called cilia. On this inner lining there is also a layer of sticky substance called mucus. The dust and smoke particles stick to this substance. Thus, the air becomes pure before reaching the lungs.
 - (4) The upper end of both the oesophagus and the windpipe open in the throat next to each other. When food is swallowed, the windpipe remains closed. But when we eat in a hurry, the food may enter the windpipe and cause us to suddenly choke.

- Q.8.** (1) Brain is situated in a bony case called the cranial cavity. The skull bones protect the brain. The brain

maintains the control and co-ordination of various body processes.

- (2) The lungs and heart are located inside the thoracic cavity. The ribs protect the lungs and heart. The lungs ensure that we breath continuously.
- (3) The stomach is located in the abdominal cavity. It is not protected by bones but a muscular wall. Food is churned in the stomach. The digestive juices bring about digestion, and food changes into a thin slurry.

Topic 22 : Growth and Personality Development

Exercises

- Q.1.** (1) height, weight (2) dependence (3) inherit
(4) independent, useful, enriching (5) personality
- Q.2.** (1) False (2) False (3) True (4) False
- Q.3.** (1) Being born with certain features or traits that are common with the members of our family is known as 'heredity'. These are our inherited traits. These traits have come down from our family 'genes'.
(2) Children in pre-primary classes cannot take care of their books, bags and clothes. Everything has to be done by their parents. They are just starting to write, they cannot read. They do not know how to comb their hair and wear clothes and shoes. Children in the fifth are big enough to do various tasks and activities. They can read books and play games, they can sing and dance and tell stories too.
(3) We grow in height and weight from birth to adulthood. We learn skills on a continuous basis and become experts in the skills. With age, our physical strength also increases. Every individual slowly makes progress.

- (4) I have learned to concentrate even when there is disturbance. I have learned to play the keyboard. I have learned to play football. I have learned some cooking from my mother.
- (5) The growth in height and weight of a child is called physical growth.
- (6) Achieving control of one's movements to learn to do something new is called 'learning a skill'.
- (7) Food is necessary for growth. The various nutrients, vitamins, and minerals present in food are required in adequate proportion for proper growth and development. A good diet meets the energy requirements.

- Q.4.** (1) No, an infant has to be fed.
(2) No, may be the clothes will be folded but it will be messy.
(3) May be at the age of four.
(4) This is a personal response question. The answers will vary from one student to another.
- Q.5.** Kabir has to start it from school. He has to search and study about animals, their habits, their habitat and their food. He has to read books and watch the videos or channels about animals and their life. When he goes to college, he will already know a lot about zoology and the career he wants to go ahead with.
- Q.6.** (1) Before we learn to ride a bicycle, we already know to run, jump, skip, hop, and climb. Due to these skills, it is possible to climb and sit on the bicycle, and balance to ride the bicycle.

- (2) Managing household accounts, cooking, keeping the house clean, packing food, making a list of groceries, using a computer. These skills will surely help Suman in her future.
- (3) Sayali can help her mother in the following ways.
 - (i) Make a list of the ingredients and their quantity required for making the ladoos.
 - (ii) Roll the ladoos for her mother.
 - (iii) Pack the ladoos in a box.
 - (iv) Assist her mother in few basic steps in the preparation of ladoos.

Topic 23 : Infectious Diseases and How to Prevent them

Exercises

- Q.1.** (1) diarrhoea (2) covered (3) skin
 (4) phenyle (5) vaccination
- Q.2.** (1) **False** - They spread through water or food.
 (2) **False** - They are caused by micro-organisms.

Q.3.

Food	Water	Air
gastro diarrhoea	typhoid malaria cholera jaundice	tuberculosis diphtheria

- Q.4.** (1) Cholera is a disease of the intestines. The germs present in the faeces of the affected person may get mixed with water. If we drink water without boiling, the germs can enter our intestine and we can get the disease. Therefore to prevent this, we must drink boiled water during epidemic of cholera.

- (2) Stagnant water is a breeding ground for insects such as mosquitoes. To prevent mosquitoes from breeding and causing diseases like malaria and dengue fever, we must ensure that there is no stagnant water around.
- Q.5.** (1) Diseases that spread from one person to the other are infectious diseases. The diseases such as influenza, cold, ringworm, scabies, chicken-pox are infectious diseases.
- (2) Air, water, insects and food are the mediums through which diseases spread.
 - (3) When there is an epidemic, many people in one area get the same infectious disease, at the same time.
 - (4) Vaccination is the process of giving a vaccine (injection) to people in order to prevent them from getting the disease. If we are vaccinated against a particular disease, our body develops resistance to that disease.
 - (5) A one and a half month old baby is vaccinated against diphtheria, whooping cough, tetanus and polio. The vaccines for diphtheria, whooping cough and tetanus are combined into triple vaccine and given as an injection.
 The polio vaccine is given orally.
 - (6) Typhoid, cholera, diarrhoea and jaundice.
 - (7) In smaller towns and villages, bleaching powder is added to community sources of water to kill the germs and make the water safe for drinking.
 - (8) Diseases like scabies and ringworm affect the skin. The germs (micro-organisms) causing these diseases are present on the skin. If a person wears the clothes of a person who has a skin disease, he/she too will get the disease. Hence, it is better to avoid sharing clothes.

Q.6. If the food has been left uncovered it means that insects, flies, etc., have sat on the food and left behind germs. If these germs enter my system, after I eat the food, I too may fall sick. I think I would rather wait for fresh food, than eat contaminated food, since it has been left uncovered.

Q.7. I would choose the first method namely not allowing water to stagnate.

The second option is spraying insecticide on the water. This will result in air pollution and may be harmful for children as well.

Q.8. (1) No, never, falling is an accident it is not a contagious disease.

(2) No, a headache is not contagious.

(3) When a person is suffering from infectious diseases which can spread from one person to another.

e.g., influenza, cold, ringworm, scabies, chicken-pox, etc.

(4) There are different activities such as : Some women are washing dirty clothes, a man is washing his oxen, a boy is jumping in for a swim, while another is urinating near the water body. People are collecting water for household needs.

(5) The table is very dirty from the previous customers. There is tea all over. The table has not been cleaned even though there are new people seated.

Rats can also be seen eating the food. There are flies everywhere.

The waiter / server is shabby and dirty. He has not shaved, his shirt is dirty and torn, sweets and eatables are left open and not covered. There are cracks on the wall.

The sink is leaking. On the whole it is a very unpleasant picture.

(6) I will keep the food covered to ensure that it does not get contaminated by dust and flies do not sit on it. I will also make sure that the kitchen is kept clean so that flies do not sit there.

(7) Conjunctivitis is highly infectious and contagious. The germs causing conjunctivitis spread through air. If you have conjunctivitis and still go to school, there are high chances that the infection will spread to other children as well. Hence, to avoid the risk of spreading the infection to others, you should not go to school.

Topic 24 : Substance, Objects and Energy

Exercises

Q.1. (1) particulate **(2)** definite **(3)** Energy

(4) kinetic energy **(5)** sunlight

Q.2. (1) Solid – aluminium, coal

Liquid – kerosene, petrol

Gas – nitrogen, oxygen.

(2) Substances may differ from each other with respect to properties like hardness, transparency, colour, smell, solubility, etc.

(3) Energy is obtained in the form of heat from coal, diesel, CNG, LPG, petrol, etc.

(4) Energy in the form of motion is called kinetic energy. e.g., when the wind blows the windmills turn, sailing boats, moving clouds, etc.

- (5) Solar energy is used in a solar cooker and solar water heater.
- (6) Batteries which produce electricity using sunlight are called solar batteries.
- (7) Sunlight and wind are non-exhaustible sources of energy. They must be used to the maximum extent because the non-renewable energy sources are getting depleted.

Q.3. (1) Sugar candy has the same taste as sugar. If there is only sugar candy in the house, then we can grind it in the mixer and mix it with the sherbet content. This would provide a sweet taste to the sherbet just like sugar. Hence, a tasty sherbet for the guests can be made with only sugar candy in the house.

(2) Salt crystals cannot be directly rubbed on the corncob. They need to be converted into powder form. This can either be done by grinding the salt crystals in a mixer grinder or a mortar and pestle. The powdered salt obtained from salt crystals can be easily rubbed on the corncob.

Q.4. (1) Camphor tablets are continuously being converted into small particles in the gaseous state. As the particles leave the camphor balls, the balls or tablets grow smaller in size till they disappear.

(2) Naphthalene balls undergo sublimation, i.e. they get converted to gaseous (vapour) state directly from solid state. Hence, the naphthalene balls placed in toilets become smaller after a few days.

(3) If people drive their own vehicles, more fuel would be used. Each vehicle will burn fuel to generate energy. While using public transport, only a single vehicle is used

by many people. Hence, a lot of fuel can be saved using public transport as fuel for only one vehicle will be used.

Q.5. (1) Naphthalene is continuously being converted into small particles in the gaseous state. Such small particles from the balls settle on the clothes. So the clothes too have naphthalene smell. As the particles leave the naphthalene balls, the balls grow smaller in size and slowly disappear.

(2) Water is found in nature in three solid states, liquid and gaseous.

(3) In all the three states, the individual particles of a substance remain the same. However, the arrangement of the particles in each of the three is different. In solid state, the particles are close to each other.

In liquid state, the particles have a small distance between them, allowing them to move and in the gaseous state, the particles are very far from each other moving quickly in any direction.

(4) The capacity of a body to do work is called energy.

- Q.6. (1)**
- (a) Asmita identified the earthen pot by its shape.
 - (b) The potter made different things like flower pot, containers, wall masks, etc. from mud (soil).
 - (c) A substance has a particulate form, i.e. it is made up of particles. It does not have a specific shape. However, in nature, every substance occurs in a specific state.

Objects are made from substances. They have a definite shape. Their parts are put together in a particular way.

- (2) The water drops splash on the roof or the road and immediately bounce off and break up into very tiny drops that fly around, make us wet.
- (3) Just having fuel in the tank won't make the car move. The fuel should burn to generate the energy required to move the car. The car does not move because the engine is not on.
- (4) When we run a long distance, the energy present in the body is used up (burned). Heat energy gets converted into motion. We need to stop when we feel tired since the energy is less.
- Q.7.** (1) The small particles are dust particles. They could be particles from anything in the house or the room.
- (2) We use heat energy to cook food, boil water, to keep ourselves warm during winter when the temperature is low, etc.
- (3) Talcum powder, soap powder, detergent, coffee, salt, tea, tooth powder.
- (4) We can use wheat flour or rice flour or any other grain flour that we have at home. We just have to mix some colour in this powder. Turmeric can be used as a natural colour powder.
- (5) The original source of energy for the electricity produced at a thermal power station is coal.

Topic 25 : Community Health and Hygiene

Exercises

- Q.1.** (1) friendship (2) digestive organs
 (3) Alcohol (4) people
 (5) health and hygiene (6) public places
- Q.2.** (1) **False** - All of them are threats to community health.
 (2) **True.** (3) **True.**
 (4) **False** - We can live a wholesome life if we take care of our health.
- Q.3.** (1) × (2) × (3) ✓ (4) ✓ (5) ✓ (6) ✓ (7) ×

Burning of old tyres : It will release poisonous gases in the air and cause pollution.

Spitting everywhere on the road : It will make the surroundings dirty and may also result in spread of diseases.

Throwing garbage from your house on to the road : It will make the surroundings unclean and dirty.

- Q.4. Polluted water :** Cholera, Typhoid, Jaundice

Safe water supply, clean rivers

Malnutrition : Higher numbers of child deaths, deformity stunted growth

Nutritious diet, fresh fruits and vegetables, balanced diet

Pollution : Danger to the environment, diseases and epidemics

Protecting the environment, control of diseases

Ignorance and : Oppression, deception, inequality

Superstition : Scientific temper, educating people

Addictions : Unhappy family life, diseases, death
Deaddiction programmes, education and awareness about the harmful effects of addiction.

Q.5. (1) I can achieve excellent health by :

- (i) Eating nutritious food.
 - (ii) Personal hygiene.
 - (iii) Exercise regularly.
 - (iv) Following the habits of cleanliness.
 - (v) Pursue hobbies.
- (2)** Pollution, squalor, epidemics of infectious diseases, addiction, insect-borne diseases are all threats to community health.
- (3)** People consuming tobacco become restless if they do not get tobacco and cannot pay attention to anything else. They develop ulcers in the mouth. These ulcers can develop into tumours, which in turn can lead to cancer. When tobacco enters the digestive organs, it may cause cancer of the digestive organs.
- (4)** Alcohol makes a person drowsy and confused. A person loses control over one's actions. Excess of alcohol causes diseases of the liver, intestines and the urinary bladder. The condition of the person becomes pathetic.
The addict's family also has to suffer with him/ her.
- (5)** It can be achieved through habits of cleanliness and good health on part of all individuals in a community.

(6) Infectious diseases can spread through air. Spitting in the open may lead to spread of diseases to others. The germs of diseases like influenza are present in the spit. When a person spits, the germs enter the air. Also, spitting in public places is not hygienic. Hence, there is a ban on spitting in public places.

Q.6. I will try to guard against lying, forgery, giving bribes, smoking, drinking and taking drugs.

Q.7. Good habits :

Informing your family members where you are going and when you will be back.

Telling the truth.

Making the school bag ready the night before.

Putting a limit on TV time and sticking to it.

Bad habits :

Biting one's nails.

Pointless habits :

Fiddling with one's hair, a pencil, etc. all the time.

Frequently forgetting one's umbrella, raincoat, pencil, pen, etc.