



Holographic Earth

Teachers Manual
1 to 5



Environmental Science-1

1. Knowing Myself

Do it yourself

2. My Body

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. hands 2. shoulder 3. legs 4. mouth
C. 1. True 2. False 3. True 4. False **D.** Do it yourself **E.** 1. We have many body parts. 2. Our legs and feet help us to ride horse. 3. Our arms, hands and fingers help us to clean a house. 4. We eat, speak and laugh with our mouth.

3. My Sense Organs

A. 1. (b) 2. (c) 3. (b) 4. (b) **B.** 1. eyes 2. nose 3. tongue 4. ears 5. skin
C. 1. True 2. False 3. False 4. True **D.** 1. I 2. II 3. V 4. III 5. IV **E.** 1. The sense organs help us to sense things. 2. The eyes help us to see the things. 3. The ears help us to hear sounds. 4. The nose helps us to smell things.

4. Food We Eat

A. 1. (c) 2. (a) 3. (c) 4. (c) **B.** 1. everyday 2. hands 3. Breakfast 4. chew 5. fields **C.** 1. True 2. True 3. False 4. True 5. True **D.** 1. (iii) 2. (v) 3. (i) 4. (ii) 5. (iv) **E.** 1. We need food to live and grow. 2. We get grains, vegetables and fruits from plants. 3. Overeating makes us sick. 4. Breakfast, lunch and dinner. 5. We get milk, meat and eggs from animals.

5. Clothes We Wear

A. 1. (c) 2. (b) 3. (c) 4. (c) **B.** 1. cotton 2. uniform 3. rain 4. heat **C.** 1. False 2. False 3. True 4. True **D.** 1. (iv) 2. (iii) 3. (i) 4. (ii) **E.** 1. We wear clothes to cover our body. Clothes protect us from heat and cold. 2. Some people wear special clothes at their work place. Such clothes are called uniforms. 3. Because they protect people from getting wet in rains. 4. Because cotton clothes keep people's body cool in summer.

6. Houses We Live in

A. 1. (c) 2. (a) 3. (b) 4. (b) **B.** 1. kutchra 2. temporary 3. ice 4. bathroom **C.** 1. False 2. False 3. False 4. False **D.** Do it yourself **E.** 1. We sit and talk to our friends and relatives in the drawing room. 2. She cooks food in the kitchen. 3. We eat our meals in the dining room. 4. We read and write in the study room.

7. My Family

A. 1. (c) 2. (c) 3. (c) 4. Do it yourself **B.** 1. family 2. big 3. grandmother 4. uncle **C.** 1. False 2. True 3. True 4. True **D.** 1. We have parents, sisters and brothers in a family. 2. A family who has father, mother and their one or two children is called small family. 3. A family who has parents, two or more children and grand-parents is called a big family. 4. A family who has grandparents, uncles, aunts and cousins is called a joint family.

8. Festivals

A. 1. (b) 2. (b) 3. (c) 4. (c) **B.** 1. Christians 2. Sikhs 3. Muslims 4. National Festivals **C.** 1. True 2. True 3. True 4. True **D.** 1. (iii) 2. (iv) 3. (ii) 4. (i) **E.** 1. On Diwali we decorated our houses with candles, bulbs and earthen lamps wear new clothes and worship Goddess Lakshmi. 2. On Eid-ul-fitr we wear new clothes make sewain and go to mosque for prayer. 3. Christmas is celebrated on 25 December. 4. Independence Day, Republic Day and Gandhi Jayanti.

9. The Neighbourhood

A. 1. (b) 2. (a) 3. (a) 4. (c) **B.** 1. Temple 2. Mosque 3. Gurudwara 4. Church **C.** 1. F 2. F 3. T 4. F **D.** 1. We go to school to study. 2. Post office 3. People keep their money safe in the bank. 4. Market is a place where we buy household things.

10. People Who Help Us

A. 1. (c) 2. (c) 3. (a) 4. (c) **B.** Do it yourself **C.** 1. People who help us are our helpers. 2. Do it yourself. 3. Our teacher teaches us at school. 4. A policeman catches thieves.

11. My School

A. 1. (a) 2. (c) 3. (b) 4. (b) **B.** 1. study 2. classroom 3. computer room 4. sick room **C.** 1. True 2. True 3. False 4. True. **D.** 1., 2., 3. Do it yourself 4. We go to school to study and learn many things.

12. Plants World

A. 1. (a) 2. (c) 3. (b) 4. (b) **B.** 1. support 2. trees 3. ground 4. shrub **C.** 1. True 2. False 3. False 4. True **D.** 1. Big plants are called trees. They have strong round stems and thick branches. 2. Plants that have

soft and green stems, are called herbs. 3. Plants that are not so tall and not so short are called shrubs. 4. Plants that grow and spread on the ground are called creepers.

13. Animals World

A. 1. (a) 2. (b) 3. (b) 4. (c) **B.** 1. birds 2. Insects 3. donkey 4. duck
C. Do it yourself **E.** 1. Animals that are tamed by us are called domestic animals. 2. Animals that live in forests are called wild animals. 3. Birds make nest to lay eggs. 4. Insects are very little animals. They have six legs.

14. Safety Rules

A. 1. (c) 2. (b) 3. (b) 4. (c) **B.** 1. True 2. False 3. True 4. True **C.** 1. To keep ourselves safe. 2. On the footpath. 3. (i) Don't run on the stairs. (ii) Don't jump on the desks or benches. 4. (i) Never use a blade to sharpen your pencil. Always use a sharpener. (ii) Don't play with fire, match box or candles.

15. Earth and Sky

A. 1. (b) 2. (c) 3. (a) 4. (b) **B.** 1. earth 2. land 3. night 4. hot star
C. 1. We live on the earth. 2. (a) Light (b) Heat 3. Plants are grown on the land. 4. There are many stars in the sky.

Environmental Science–2

1. Our Body

A. 1. (b) 2. (b) 3. (a) 4. (b) **B.** 1. tongue 2. nose 3. ears 4. eyes **C.** 1. nose 2. ears 3. tongue 4. eyes **D.** 1. The body parts which we can see from outside are called external organs. 2. The body parts which we cannot see from outside are called internal organs. 3. Ten 4. Sweet, salt, sour, bitter.

2. The Food We Eat

A. 1. (c) 2. (b) 3. (c) 4. (b) **B.** 1. Rice 2. Dal 3. Fruits 4. Vegetables 5. Wheat **C.** 1. True 2. False 3. True 4. True **D.** 1. We need food because it gives us energy to play and work. It makes us healthy and strong. 2. People who eat food which we get from plants are called vegetarians. 3. People who eat meat, fish or eggs are called non-vegetarians. 4. Energy-giving food, body-building food and protective food.

3. Our Clothes

A. 1. (b) 2. (c) 3. (c) 4. (b) **B.** 1. Policeman 2. Nurse 3. Soldier 4. Pilot 5. Student 6. Postman **C.** 1. needs 2. special 3. detergent 4. rain **D.** 1. False 2. True 3. True 4. False **C.** 1. The early man covered his body with leaves, barks of trees and skin of animals. 2. We wear clothes to protect us from heat, dust, cold, rain and germs. 3. We wear woollen clothes in winter. 4. Cotton, wool, linen, silk.

4. Our Houses

A. 1. (a) 2. (c) 3. (b) 4. (b) **B.** 1. Greenery 2. Japan 3. Movable 4. Caravans **C.** 1. True 2. True 3. True 4. False **D.** 1. A caravan is a type of movable house. It is a house on wheels. The banjaras live in caravans. 2. A houseboat is a house in a boat. We can find houseboats in the Dal Lake of Kashmir. 3. An igloo is a snow house. Eskimos build these houses with blocks of snow or ice. **E.** 1. We need a house to live in. A house protects us from heat, cold, rain, storm, thieves, robbers and stray animals. 2. A Kutcha house is a house made of mud and straw. 3. Pucca house 4. People who move from one place to another live in temporary houses.

5. Water for Life

A. 1. (c) 2. (c) 3. (b) 4. (c) **B.** 1. drinking 2. rivers 3. ponds 4. Plants **C.** 1. Fish 2. Turtle 3. Crocodile **D.** 1. True 2. False 3. False 4. True 5. True **E.** 1. Four uses of water : (i) Water is used in drinking.

(ii) Water is used in bathing. (iii) Water is used in cooking. (iv) Water is used in washing. 2. Sources of water are seas, rivers, lakes, ponds, snow and rains. 3. Rain 4. We can save water in these ways: (i) We should use as much water as we need. (ii) We should store water in clean containers. (iii) We should turn off the tap after taking water.

6. Family and Relations

A. 1. Do it yourself 2. (a) 3. (c) 4. (b) **B.** 1. children 2. studies 3. money 4. mothers **C.** 1. A small family is a family that has parents and one or two children. 2. Family having grandparents, parents and more than two children is a big family. 3. A family having grandfather, grandmother, uncles, aunts and their children is a joint family. 4. Do it yourself.

7. Our National Festivals

A. 1. (c) 2. (c) 3. (b) 4. (c) **B. Raj Ghat :** It is situated on the bank of the river Yamuna in New Delhi. **Red Fort :** In Delhi **India Gate :** In New Delhi **C.** 1. On 15th August, 1947. 2. On 26th January 1950. 3. Independence Day 4. Republic Day

8. Religious and Harvest Festivals

A. 1. (b) 2. (a) 3. (b) 4. (a) **B.** 1. Dussehra 2. Onam 3. Eid-ul-Fitr 4. West Bengal **C.** 1. False 2. True 3. False 4. True **D.** 1. Because people lit candles and earthen oil lamps on this day. 2. Because people throw coloured water and rub gulal on each other's face. 3. Pongal is celebrated in the month of January in Tamil Nadu. 4. It is celebrated after the holy month of Ramzan.

9. Places in the Neighbourhood

A. 1. (c) 2. (c) 3. (b) 4. (b) **B.** 1. letter box 2. market 3. loans 4. bus **C.** 1. True 2. False 3. True 4. False **D.** 1. Snacks, Grains, Ration 2. Chips, Chocolates, Cakes **E.** 1. Market 2. In hospitals 3. We can keep our money and jewellery safe in the bank. 4. They maintain law and order. 5. Hindus go to the temple to worship their gods and goddess.

10. Plants Around Us

A. 1. (b) 2. (c) 3. (a) 4. (c) **B.** 1. water 2. deserts 3. useful 4. Plants **C.** 1. True 2. True 3. True 4. True **D. Trees :** Big and strong plants are called trees. **Shrubs :** Shrubs do not grow very high. They look bushy. They are smaller than trees. **Herbs :** Herbs are very small.

They have soft stems. **Climbers** : Climbers need support to grow straight. They climb on other plants and walls. **Creepers** : Creepers grow and spread along the ground. 2. **Water plants** : lotus, water lily **Thorny plants** : cactus, rose **Parts of a plant** : flowers, leaves

11. Animals Around Us

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. Dogs 2. domestic 3. forests 4. reptiles **C.** 1. False 2. False 3. True 4. False 5. False **D.** 1. Some animals which we tame are called domestic animals. Name of four of them are cow, goat, horse, cat. 2. Animals that live in forests are called wild animals. Name of four of them are deer, lion, zebra and elephant. 3. Duck, sparrow and pigeon. 4. Fish, tortoise, crocodile.

12. Safety and You

A. 1. (b) 2. (a) 3. (c) 4. (c) **B.** 1. bed 2. run 3. footpath 4. bus **C.** 1. We should follow safety rules. 2. We should walk on the footpath. 3. We should cross the road on zebra crossing. 4. We should not board or get down a moving bus.

13. Weather and Seasons

A. 1. (b) 2. (c) 3. (a) **B.** 1. coldest 2. Hot winds 3. weather 4. Hot 5. humidity **C.** 1. True 2. True 3. True 4. True 5. True **D.** 1. Weather is the state of air and atmosphere at a particular time and place. 2. If weather continues for long time, it is called season. 3. Raincoat 4. Loo is hot and dry wind.

14. Means of Transport

A. 1. (b) 2. (b) 3. (a) 4. (b) **B.** 1. pulled 2. transport 3. driven 4. oldest **C.** 1. True 2. True 3. False 4. False **D.** 1. We use a bicycle, tonga, taxi, rickshaw, motor cycle, scooter, bus or a train to go from one place to another. These are called means of transport. 2. Tonga, bullock cart 3. Bicycle, Rickshaw 4. Boat, Ship 5. Aeroplane, Helicopter

15. Means of Communication

A. 1. (c) 2. (c) 3. (c) **B.** 1. cheapest 2. fastest 3. send 4. computer **C.** 1. True 2. False 3. True **D.** 1. The different ways of sending and receiving information from one person to other are called means of communication. 2. Telephone 3. A radio brings us news, many kinds of information and entertainment.

Environmental Science–3

1. Our Senses

A. 1. (b) 2. (c) 3. (c) 4. (b) **B.** 1. True 2. False 3. True 4. False **C.** 1. see 2. Braille script 3. tires 4. organ **D.** 1. The sense organs help us to know the world around us. 2. • We should wash our eyes four to five times in a day with clean water. • We should not read or study in dim light or very bright-light. This tires the eyes. • We should not read while lying down. • We should not read in a moving vehicle as it strain our eyes. 3. • We should not clean our ears with a matchstick or a hairpin. • We should dry our ears with a soft, clean towel after bath. • We should not let water enter our ears. • We should go to a doctor if we have an earache. 4. The Braille is a script that has raised letters. Blind people cannot read with their eyes, they feel and identify the letters with their fingers. **E.** 1. (iii) 2. (i) 3. (iv) 4. (v) 5. (ii)

2. Different Works

A. 1. (a) 2. (c) 3. (b) **B.** Do it yourself **C.** 1. Do it yourself 2. Child labour is the employment of children in an industry or business, especially when illegal. 3. This is because they come from poor families. These children are used as child labour in running the house.

3. Food We Eat

A. 1. (c) 2. (c) 3. (b) 4. (c) **B.** 1. foodgrains 2. Rajasthan 3. Maize 4. South Bharatiya dishes **C.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **D.** 1. True 2. True 3. False 4. True **E.** 1. People live in different parts of Bharat so they eat different types of food because different foods are grown in their areas. 2. The states in Northern Bharat grow large quantities of wheat. So the people there eat wheat. Wheat flour (atta) is made into chapatias and eaten with cooked vegetables and pulses (daal) 3. In southern Bharat rice is eaten more commonly. The people in coastal states eat rice with plenty of fish. The south Bharatiya also eat dishes like idli, dosa, upma, vada and uttappam. 4. To add colour and taste in all food.

4. Cooking Food

A. 1. (b) 2. (b) 3. (c) 4. (c) **B.** 1. steam 2. nutrients 3. Babies 4. pakoras **C.** 1. True 2. True 3. False 4. False **D.** 1. (d) 2. (c) 3. (e)

4. (b) 5. (a) **E.** 1. We cook food as it makes the food soft, tasty and easy to digest. Cooking also kills the germs present in the food. Some food items last longer when they are cooked. 2. The different ways of cooking are roasting, frying, steaming, baking, boiling, stir frying. 3. Mashed banana, cereal, mashed potato or any other fruit or vegetable are offered to baby. Daal, vegetable curries, rice, fruits, fruit juice are offered to elderly people. 4. Aluminium, Brass, Iron, Copper 5. Kerosene, LPG, Gobar Gas

5. Water

A. 1. (b) 2. (b) 3. (b) 4. (b) **B.** 1. date palm 2. 70% 3. camel 4. summer **C.** 1. True 2. False 3. True 4. True **D.** 1. (e) 2. (c) 3. (a) 4. (d) 5. (b) **E.** 1. Oceans, lakes, rivers, ponds, wells 2. 8 glasses or 3-4 litres. 3. The water is cleaned then supplied to our houses through underground pipes. 4. Plants and animals live in desert areas need less water because they are adapted to conditions of less water.

6. Houses

A. 1. (b) 2. (c) 3. (b) 4. (a) **B.** 1. True 2. False 3. True 4. True **C.** 1. We need a house to live in. A house provides us shelter, comfort and safety. 2. The primitive man lived in the cave. He had no idea to make a house. 3. • A good house has a boundary wall or fence all around to keep outsiders and animals away. • A good house has proper sunlight and cross ventilation to keep the house free from germs and insects. It has enough doors, windows and ventilators to let in fresh air. • Doors and windows of a good house has wire netting to keep away flies and mosquitoes. • In a good house, there is a slope in the floor of the kitchen and bathroom. This allows water to flow out easily. • It has proper drainage system to carry dirty water away from the house. The drains are covered to keep mosquitoes away. 4. The system of letting in fresh air and letting out stale air is called ventilation. **D.** 1. (iv) 2. (v) 3. (1) 4. (ii) 5. (iii)

7. The Family

A. 1. (c) 2. (a) 3. (c) 4. (c) **B.** 1. True 2. True 3. True 4. True **C.** Do it yourself **D.** 1. A family is a group of people related to each other. 2. A family having father, mother and their one or two children is a Nuclear family. 3. In some families grandparents, parents, uncles, aunts and their children live together. Such a family is called a joint family. 4. We take care of them and make them feel loved.

8. Games We Play

A. 1. Do it yourself. **B.** 1. football 2. ludo 3. watching TV **C.** 1. Pitthu, Stappoo, Kho-Kho 2. Football, Cricket, Hockey 3. Snakes and Ladders, Carrom, Chess **D.** 1. To relax a bit 2. Do it yourself. 3. Some games are played in homes. They are called indoor games. Some indoor games are snakes and ladders, carrom, chess etc. 4. Some games are played outside the house. They are called outdoor games. Some outdoor games are football, cricket, hockey and basketball.

9. Mapping the Neighbourhood

A. 1. (a) 2. (c) 3. (b) 4. (a) **B.** 1. True 2. True 3. False 4. True 5. True **C.** 1. The drawing of an area that tells the location of different places in that area is called a map. 2. The four main directions are—East, West, North and South. 3. Do it yourself 4. Do it yourself

10. The World of Plants

A. 1. (b) 2. (b) 3. (b) 4. (c) **B.** 1. True 2. True 3. False 4. True **C.** 1. (c) 2. (a) 3. (b) 4. (d) **D.** 1. Big and tall plants are called trees. Banyan, neem and peepal are three trees. 2. Small plants with soft, green stems are called herbs. Spinach and mint are two herbs. 3. Plants with thin, woody stems are called shrubs. They are smaller than trees. Rose, mehandi are two shrubs. 4. Some plants have weak stems. They cannot stand straight on their own. They need the support of another tree or wall to grow upwards. Such plants are called climbers. The pea plant and money plant are two climbers.

11. Leaves

A. 1. (b) 2. (c) 3. (a) 4. (b) **B.** 1. size 2. yellow 3. Chlorophyll 4. betel plant **C.** 1. Khus 2. Tulsi 3. Mehandi 4. Tea 5. Dhak **D.** 1. Dried and fallen leaves turn into manure which make the soil fertile and helps the plants to grow. 2. Because leaves make food for the plant. 3. • We eat the leaves of plants like spinach, cabbage and mint. • Some people eat the leaves of the betel plant as paan. • Tea is prepared from the dried leaves of the tea plant. • The leaves of some plants like neem, tulsi, ashoka and eucalyptus are used to make medicines. • Palm and coconut leaves are used to make the roof of Kachcha houses. 4. Banana leaves, Phalsa leaves.

12. The World of Animals

A. 1. (b) 2. (a) 3. (b) 4. (c) **B.** 1. jungles 2. scavengers 3. farm 4. herbivores **C.** 1. False 2. False 3. False 4. True **D.** 1. Animals which live in jungles are called wild animals • Name of some of them are Tiger, Zebra, Bear, Elephant, Lion etc. 2. We keep some animals like cows, goats, buffaloes, sheep, pigs, goats, camels, donkeys, horses, hens on farms. They are called domestic animals. 3. A cow uses its tail to drive away flies. A monkey uses its tail to swing from one branch of a tree to another. A kangaroo uses its tail to jump long distances. A squirrel uses it to climb trees. Water animals use their tails with fins to swim. 4. • We get wool from the hair of goat, camel and sheep. • Hens and ducks give us eggs. • We get silk thread from silkworm. • We use the skin of dead animals to make leather shoes, purses and belts. 5. Plant-eating animals like cows, goats and buffaloes have sharp and broad front teeth to cut grass and leaves. They swallow their food without chewing it. When they rest they bring this food back into their grinding teeth. This is called chewing the cud.

13. Creepy-Crawlies

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. False 2. True 3. True 4. True **C.** 1. (a) 2. (d) 3. (c) 4. (b) **D.** 1. Mayfly, Stonefly 2. Honeybee, Ant 3. The spider has eight eyes. Spider weaves a sticky web to trap the insects for food. 4. Scorpion body has two parts and it has eight legs. A scorpion has a sharp sting at the end of its tail. 5. Snails hide inside their shell. In this way, they protect themselves from their enemies. 6. Malaria, Dengue, Typhoid, Cholera etc. 7. Because they live and work together in groups.

14. Flying Birds

A. 1. (c) 2. (c) 3. (b) 4. (b) **B.** 1. False 2. False 3. False 4. True 5. True **C.** 1. parakeet 2. flight 3. woodpecker 4. tailor bird **D.** 1. Birds make nests to lay eggs and to bring up their young one. 2. Types of feathers are Down Feathers, Body Feathers, Flight Feathers. (1) Down feathers are light and fluffy. They lie next to the birds skin and help the bird to keep warm. (2) Body feathers cover the birds body to give it a boat like shape. (3) Flight feathers are found on the wings and tail of a bird. They are strong and stiff. They help the bird to fly. Tail feathers help to change direction in mid-

flight. 3. The tailor bird stitches big leaves together with dry grass, strings, woollen thread from a spider's web. It uses its beak like a needle. This is why it is called the tailor bird. 4. Beak of a bird helps it to catch and hold food.

15. Family of Animals

A. 1. (b) 2. (b) 3. (b) 4. (b) **B.** 1. shed 2. coop 3. guards, barks 4. home
C. 1. True 2. True 3. False 4. True **D.** 1. Some animals like lizards, rats, cockroaches, etc. often share houses with people. They come out at night in search of food. They are pests. 2. Cow, goat, hen, horse, buffalo 3. To keep rats away from our houses, we can use a rat trap. We should sprinkle a mix of equal parts of powdered sugar and baking soda or borax around drains to control cockroaches. We should never leave the kitchen dirty at night. We should clean up all spilled food before we sleep. 4. • We should love them. • We should give them sufficient food and clean water. • We should keep them clean. • We should take them to vet from time to time.

16. Textile

A. 1. (b) 2. (a) 3. (b) 4. (c) **B.** 1. Veshti 2. Lungi 3. primary 4. secondary **C.** 1. False 2. True 3. True 4. False **D.** 1. Women usually wear saree, salwar-kameez, western dresses and men usually wear pant-shirt, kurta pyjama, jeans, T-shirt etc. 2. In Maharashtra, fisher women wear saree by tucking it between the legs to make it comfortable while working. 3. Block printing, tie and dye, kalamkari 4. Because they may lose their colours. 5. Red, yellow and blue are primary colours. 6. The colours that made by mixing the primary colours in correct quantity is called secondary colours.

Environmental Science-4

1. Living and Non-living Things

A. 1. (c) 2. (c) 3. (a) 4. (b) **B.** 1. touch-me-not 2. sun 3. reproduce 4. non-living 5. breathe **C.** 1. True 2. False 3. True 4. True 5. True **D.** 1. Plants, Human beings 2. Car, water **E.** 1. (1) All living things move but non-living things cannot. (2) All living things can reproduce but non-living things cannot. (3) All living things can breathe but non-living things cannot. 2. A small baby grows into an infant, which grows into a small child. A child grows into teenager, than an adult, finally he will grow old. A baby boy will become a man and a baby girl will become an adult lady. 3. Three differences between animals and plants are : (1) Animals can move while only some parts of plants show movement. (2) Animals reproduce by giving birth or by laying eggs. While plants grow mostly from seeds. (3) Animals have sense organs. While plants do not have sense organs. 4. Yes. Living things do not live forever. They live their life for a short or a long time. They die when they get old.

2. Our Internal Organs

A. 1. (a) 2. (b) 3. (b) 4. (b) **B.** 1. largest 2. kidneys 3. skull 4. nose **C.** 1. False 2. True 3. False 4. True **D.** 1. (c) 2. (e) 3. (d) 4. (a) 5. (b) **E.** 1. Some organs are found inside our body. We cannot see them. They are called internal organs. Five major internal organs of our body are Stomach, small intestine, large intestine, liver, heart. 2. Stomach, small intestine, large intestine, liver 3. Because it is the seat and centre of intellect, memory and sensations. Here originate all our dreams, perceptions, ideas and concepts. It controls all our actions. 4. Heart pumps blood to all parts of the body. 5. Kidney.

3. Food

A. 1. (b) 2. (b) 3. (a) 4. (c) 5. (b) 6. (c) **B.** 1. (d) 2. (a) 3. (e) 4. (c) 5. (b) **C.** 1. pulses 2. cereals 3. nutrients 4. healthy 5. minerals **D.** 1. False 2. False 3. True 4. False 5. False **E.** 1. Carbohydrates, fats, proteins, vitamins, minerals 2. Living beings need food to stay alive. Food gives us energy to do work. It helps us to grow. 3. Food grains, pulses, oilseeds, fruits, vegetables 4. Vitamins keep us healthy. They protect our body from diseases. They also help our body parts like gums, eyes, teeth, skin, etc. to function properly. 5. Protein helps us to grow. Protein helps us in repairing the damaged parts of

our body. Meat, eggs, fish, milk, pulses, cheese, green leafy vegetables, etc. are foods rich in protein. 6. A diet that contains all the nutrients in the right amount is called a balanced diet.

4. Water

A. 1. (b) 2. (b) 3. (c) 4. (b) **B.** 1. water 2. safe 3. five 4. clothes, utensils 5. repaired **C.** 1. False 2. False 3. False 4. True 5. True **D.** 1. Rain, ponds, lakes, rivers, seas, oceans 2. Some snow fed rivers are Ganges, Yamuna, Brahmaputra. Some rain fed rivers are Godavari, Krishna, Kaveri, Mahanadi. 3. A dam is a wall built across a river to block the flow of water. This water is stored and used to generate electricity. A dam also prevents flood. 4. Due to the heat of the sun rays, water in rivers, lakes and other water bodies evaporates in the form of water vapour. The water vapour rises to the colder upper layers of the atmosphere and condenses to form tiny droplets. These droplets of water join together to form clouds. Droplets of water join to form bigger drops. When they become heavy, they fall as rain, snow, sleet or hail. Rainwater collects in streams and rivers and flows to the sea. Evaporation takes place again in all these water bodies. This is called the water cycle.

5. A House

A. 1. (c) 2. (c) 3. (c) 4. (c) 5. (b) **B.** 1. (c) 2. (d) 3. (e) 4. (b) 5. (a) **C.** 1. dump-proof 2. stilt 3. pucca 4. snow **D.** 1. False 2. False 3. True 4. False **E.** 1. We need a house because it gives us protection against wild and stray animals, thieves and enemies, harmful climate such as severe heat, cold or rain. 2. Most houses in cities are permanent houses. These houses are strong enough and stay for long. The walls and roofs of these houses are made of bricks, cement and steel. They have strong and well fitted doors and windows. Permanent houses are of many types such as single-storeyed houses, double-storeyed houses, multi-storeyed houses, bungalow, sky-scrapers, etc. 3. Kuchcha houses are called temporary houses. A temporary house does not last long. People who do not stay at one place for long tend to build temporary houses. Their different types are hut, wooden house, tent, caravan, igloo. 4. Bricks, stones, cement and steel, mud, straw and wood.

6. Our Clothes

A. 1. (b) 2. (b) 3. (c) 4. (a) 5. (a) **B.** 1. (e) 2. (d) 3. (c) 4. (b) 5. (a)
C. 1. thread 2. silkworm 3. sheep 4. used **D.** 1. False 2. False 3. True 4. False **E.** 1. We wear clothes to protect us from heat, cold, dust, rain and insects. 2. Main kinds of fibres are natural and artificial or synthetic fibres. 3. We obtain cotton from cotton plants. We obtain wool from the fur of animals like sheep, goats, camels, etc. 4. Clothes should be kept clean because we look smart and decent in clean clothes. 5. In West Bengal, men wear dhoti and kurta whereas women wear saree wrapped around the waist and the rest of it swathed over the shoulder. Bihari men stick to dhoti and kurta and women wear sarees. In Madhya Pradesh, men wear dhoti with safu, women wear lehanga and choli. 6. We should not dry clothes in direct rays of the sun because direct rays of the sun can fade the colours of the cloths. 7. Phiran and Pathani suit. 8. I. We wash our clothes when they get dirty. II. We should dry the clothes in an airy place. III. Clothes should be ironed after drying up. IV. Neem leaves or naphthalene balls should be put in the woollen cloths to keep them safe from worms and moths.

7. Houses and Bridges

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. electrician 2. plumber 3. carpenter 4. beam **C.** 1. False 2. True 3. False 4. True **D.** 1. Architect, mason, carpenter, electrician, plumber, painter 2. Earlier, houses were made of mud and had thatched roofs. The walls were made of mud and bamboo and the floors had stone slabs, doors and windows were made of wood. While today house are made of strong and durable material like bricks and cement. They last for a long time and require less repairs. Walls are plastered with cement and are then coated with waterproof paint. Marble or granite tiles are used to make the floor. Materials like glass and plywood are used for doors and windows. 3. In the process of brick making, clay is prepared by crushing and grinding it. Then the clay is mixed with water to form a stiff dough. The dough is then put inside a brick-cutting machine. After the bricks are cut, they are stacked to dry before baking them in a kiln. 4. A bridge is a structure built over roads and waterways. It is built to help people and vehicles to cross from one side to the other.

8. Recreation and Celebration

A. 1. (c) 2. (c) 3. (b) 4. (b) 5. (b) **B.** 1. False 2. True 3. False 4. True
C. 1. Assam 2. Dussehra 3. Kerala 4. Tamil Nadu **D.** 1. When we work hard the whole day, we get tired and we need to have fun. 2. Playing games, celebrating festivals, going to picnic etc. 3. On 15th August in 1947, Bharat became free from the British rule. Since then we celebrate this day as the Independence Day of our country. 4. We celebrate 'Republic Day' on the 26th of January every year. Because our constitution came into force from this day. Bharat was declared to be a Sovereign, Socialist, Secular and Democratic Republic. It means the people of our country govern themselves. 5. Festivals that are celebrated for newly harvested crops are called harvest festivals. 6. Holi, Basant Panchami, Baisakhi

9. Mapping the Neighbourhood

A. 1. (a) 2. (b) 3. (b) **B.** 1. diagram 2. map 3. sketch 4. symbols
C. 1. True 2. False 3. False 4. True **D.** 1. North, South, East, West 2. NE, NW, SE, SW **F.** 1. A map is a diagram of a place seen from above. 2. A sketch is a rough idea of a place drawn on a sheet of paper showing important landmarks of a particular place or area. 3. A book of maps is called an atlas. 4. Symbols are used to represent various features on the map. They make it easy to read the map. 5. Different colours are used in a map to identify different features of the earth on its surface.

10. Animals

A. 1. (a) 2. (b) 3. (a) 4. (c) 5. (c) **B.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **C.** 1. pride 2. band 3. cows 4. herd 5. parliament **D.** 1. True 2. True 3. False 4. False 5. True **E.** 1. Some animals live in groups to : ♦ protect themselves from enemies. ♦ find food and water. ♦ raise their young ones. 2. Snakes hear by feeling the movement or sound through the vibrations on the ground. 3. A camel has very little hair on its body, so that its skin can breathe easily. 4. A Yak has very long hair which keep it warm. 5. Bees suck nectar from flowers with their long tube like tongue. The bees consume pollen grains along with the nectar. Once their stomach is full, they spit out the nectar into the cells and their hive. The cells are sealed with wax produced by the bee's body. After a few days this nectar turns into honey.

11. Plants

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. soil 2. roots 3. shoot system 4. tulsi
C. 1. False 2. True 3. True 4. True 5. False **D.** 1. The part above the plant which grows above the soil is known as the shoot system. 2. The roots form the root system. 3. Roots take in water and minerals from the soil. Roots hold the plant firmly to the soil. Roots bind the soil and prevent soil erosion. 4. Forest Department looks after the forests. 5. Two types of special roots are : (i) Buttress roots (2) Propagative roots. Buttress roots support the plant and allow it to absorb more nutrients. Some plants produce buds among the roots that grow near the surface of the ground. As these plants propagate with the help of their roots, these roots are called propagative roots.

12. Flowers

A. 1. (b) 2. (a) 3. (b) 4. (a) 5. (a) **B.** 1. flower 2. winter 3. cells 4. apiary 5. florist **C.** 1. True 2. True 3. True 4. False 5. True **D.** 1. A bud is the early form of the flower. Bud becomes flower when it blooms. 2. Flowers help in reproduction of plants. 3. Flowers bear the yellow coloured powdery substance called pollen grain. Flowers also have tiny eggs. When the pollen and egg meet, a fruit is formed. 4. Bees suck nectar from flowers with their long tube like tongue. They consume pollen grains along with the nectar. Once their nectar is full, they spit out the nectar into their cells and their hive. The cells are sealed with wax produced by the bee's body. After a few days, this nectar turns into honey. 5. In order to collect honey, the beehive is set on fire. The fire drives away the bees from the hives. The hive is removed and honey is extracted. 6. We greet people with garlands and bouquets. Petals of flowers are used to make rangoli. Flowers are used to decorate our homes.

13. Natural Phenomenon

A. 1. (a) 2. (c) 3. (b) 4. (c) 5. (c) **B.** 1. False 2. False 3. False 4. True 5. False **C.** 1. top 2. star 3. earth 4. round 5. year **D.** 1. A star is a self-luminous body. It means it has its own heat and light. Star is made of hot burning gases. 2. Planets are heavenly bodies which move round the sun in a definite path called orbit. They do not move out of their orbit due to the gravity of the sun. The planets do not have their own light. They shine due to the light from the sun. 3. The earth's rotation causes day and night. The earth is continuously moving on its axis. The sun shines all the time but only half of the earth faces the sun at a

time. This part has day. The other half of the earth that is away from the sun remains dark and has night. If one part has evening then the part directly opposite to it would have morning, So, the movement of earth (rotation) causes days and nights. 4. The places near the equator remain hot throughout the year because it receives the same amount of sunlight all the year round. 5. The earth spins on its axis like a top once in 24 hours. This is called rotation. 6. The earth also moves around the sun which is called revolution.

14. Our Natural Resources

A. 1. (c) 2. (c) 3. (b) 4. (a) **B.** 1. True 2. True 3. True 4. True 5. False 6. False **C.** 1. sun 2. forests 3. alluvial 4. trees 5. air 6. petroleum **D.** 1. (d) 2. (c) 3. (a) 4. (b) **E.** 1. Nature has blessed us with various things which are essential for our life. Air, water and food are some of them. These are called natural resources. 2. Resources which can be recycled are called renewable resources. They are present in plenty and are not likely to be finished in future. Examples are the soil, water, air and sunlight. 3. The resources that are limited in their supply are non-renewable resources. If these resources are not used wisely, they will get exhausted sooner or later. Examples are forests, coal, petroleum and minerals. 4. Soil is home for many animals. Animals like rats and rabbits make their burrows in the soil. It is used for construction of various things like pots, buildings, etc. Soil is also essential for agriculture. 5. Water is used in cooking, washing, bathing, cleaning, irrigation and in industrial processes. It is used to generate hydroelectricity. 6. Timber, firewood, medicines

15. Clean Surroundings

A. 1. (b) 2. (c) 3. (c) 4. (c) 5. (c) **B.** 1. rubbish 2. trees 3. pollutes 4. non-biodegradable **C.** 1. False 2. True 3. False 4. True **D.** 1. yes 2. no 3. yes **E.** 1. Environment means the surroundings where someone lives. All the things around us make up our environment. 2. Human activities like cutting down more trees, dumping garbage in open, using polythene bags and keep their surrounding dirty disturb the environment. 3. Some kinds of rubbish decay naturally in soil they are known as biodegradable wastes such as rotten fruits, their peels, vegetable peels, wood, paper etc. 4. Some kinds of wastes do not

decay naturally and cannot be decomposed by the microbes in the soil such as plastic, polythene bags, detergents, etc. they are called non-biodegradable wastes. 5. Recycling is the process by which the waste articles are used into some useful raw materials. Paper, glass, metals and plastic can be recycled. 6. Polythene bags do not rot away naturally. They create a serious problem to our environment. So, we should minimize the use of polythene bags.

Environmental Science–5

1. The Organ System of Our Body

A. 1. (b) 2. (c) 3. (a) 4. (c) **B.** 1. mouth 2. respiratory 3. circulatory 4. controls **C.** 1. True 2. False 3. False 4. True **D.** 1. Digestive system helps us to digest and absorb the food we eat. 2. This system consists of nose, trachea (wind pipe) and the lungs. It helps the body to breathe in and out. 3. The circulatory system is made up of the heart, blood vessels. The heart pumps pure blood to all parts of the body. The impure blood from different parts of the body is carried back into the heart. 4. It supports the body, protects delicate organs like the brain, heart and main sense organs. It gives the body shape and strength. 5. The place where two bones join is called a joint. There are two types of joints in our body: (a) Immovable Joints (b) Movable Joints.

2. Our Food

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. balanced 2. glucose 3. germs 4. cool places 5. pasteurization **C.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **D.** 1. True 2. True 3. False 4. False **E.** 1. To remain healthy, we require all the nutrients in right amount. 2. A diet that contains all the nutrients in right amount is called a balanced diet. 3. Our body need glucose to regain energy. When we feel weak due to dehydration or illness we need glucose to regain energy 4. Refrigeration, Drying, Dehydration, Vaccum Packing, Salting. 5. Vitamin-A→Night blindness, Vitamin-B→Beriberi, Pellagra Vitamin-C→Scurvy, Vitamin-D→Rickets

3. Games We Play

A. 1. (b) 2. (a) 3. (b) 4. (b) 5. (b) **B.** 1. five 2. hu-tu-tu 3. young 4. captain 5. wrestling **C.** 1. False 2. True 3. True 4. True **D.** 1. Watching television, exercising in the gymnasium, playing games and spending time on hobbies like reading, gardening, etc. 2. Kabaddi, Vallamkali, Mallakhamb, etc. 3. Individual games are those which we may play by ourselves or against another person. Examples are judo, boxing, badminton, table tennis, chess. While games in which a group of players play against another group are team games. Examples are cricket, hockey, football etc. 4. The cooperation and coordination among the team members is called team spirit. It is important because it inspires every player to play for

the team and not for herself/himself. 5. Kabaddi, Patangbazi, Tirandazi, Boatrace, Kusti, Sarit-Sarak etc.

4. Communicable Diseases

A. 1. (c) 2. (c) 3. (b) **B.** 1. communicable 2. bacteria 3. AIDS 4. vaccination 5. resistance **C.** 1. True 2. True 3. False 4. True 5. True **D.** 1. (e) 2. (f) 3. (h) 4. (b) 5. (c) 6. (g) 7. (a) 8. (d) **E.** 1. There are some diseases which can be passed onto others. Such diseases are called infectious diseases or communicable diseases. 2. Most of the diseases are caused by the harmful microbes. The harmful germs are called microbes. 3. Various means are direct contact, air, contaminated water and food, carriers, insect bite etc. 4. We can prevent the spread of germs from one person to another in following ways i. Wash hands after touching anyone who is sneezing and coughing. ii. Do not share personal things like comb, towel, soap etc. iii. The patient should be kept in complete isolation from members of the family. iv. When the patient is all right we should clean all things which is patient used 5. AIDS is an incurable infectious disease that damages the immune system of a person and leads him to death. It is caused by contaminated blood or glucose. 6. (a) We should throw all the garbage in the dustbin. We should not spread it here and there. Also the dustbins should be kept covered. (b) The toilets should be kept neat and clean. These should be washed regularly with disinfectants like phenyl. (c) Water used for drinking should be boiled. It should be properly stored in clean utensils with covers. (d) All the eatables should be kept covered to keep them safe from flies and dust. (e) Along with the house, the surroundings should also be kept neat and clean. The drains should always be kept covered. 7. Vaccination is an act of introducing a vaccine into the body to produce protection from a specific disease. Inoculation is the act of implanting a pathogen or other microbe or virus into a person. It is a method of artificially inducing immunity against various infectious diseases.

5. First Aid

A. 1. (c) 2. (c) 3. (c) 4. (c) **B.** 1. careless 2. dirty 3. first aid box 4. bite 5. blisters **C.** 1. False 2. False 3. False 4. False 5. True **D.** 1. (d) 2. (e) 3. (a) 4. (c) 5. (f) 6. (b) **E.** 1. Accidents are caused accidentally. Accidents can happen anytime without a warning. They can occur on the road, in the house, in the school, on the playground and even in

our own room. 2. The first help given to the injured person until a doctor or an elder comes or until the patient can be taken to the hospital is called first aid. 3. In case of minor burns, pour cold water on it for a few minutes and then apply ointment like burnol. Do not apply ghee, oil, etc. on the burnt part. You can keep an ice or cold water pack on the burnt part. Do not cover the burnt part with thick cloth. 4. First of all, clean your hands with soap and water. Then clean the wound with a solution of an antiseptic such as 'Dettol' or 'Savlon'. Take care to remove every bit of dirt in the wound. If it is not done properly, the wound may get infected. Apply an antiseptic cream over the wound. Now put a thick pad of sterile gauze over the wound and press it with your thumb and finger. Protect it with a bandage or medicated self-adhesive tape. If the bleeding from the wound does not stop, use a tourniquet. 5. If a person happens to take any of poisonous things, try to induce vomiting in him. Give him warm, salty water to drink. This will induce vomiting and the poison will come out with the vomit. For further treatment, take the victim to the doctor. 6. Apply an antiseptic to prevent infection, cover wound with a bandage. Then take the patient to the doctor immediately. If the animal is found to have rabies, the doctor will give him a course of injections. 7. In such a case, make the victim sit in an upright position with head held back. The patient should breathe through the mouth. Hold the nose between thumb and finger for sometime. Apply a wet cloth or ice on the nose and the forehead. This will stop bleeding. 8. It begins with a severe pain across the chest. This pain sometimes spread to the neck, arms and stomach. It usually lasts for 5-6 minutes. The victim may find it difficult to breathe. Sometimes he may feel like vomiting.

6. Our Rich Heritage

A. 1. (b) 2. (a) 3. (c) 4. (c) 5. (b) **B.** 1. Shah Jahan 2. Muhammad Adil Shah 3. Madurai 4. Aurangabad, Maharashtra 5. British government, Maharashtra **C.** 1. False 2. False 3. False 4. True 5. False **D.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **E.** 1. India Gate was built in 1931 to pay a tribute to the martyrs in wars. 2. It was built by the British Government in 1911 to welcome the king of Great Britain, King George V. 3. Taj Mahal is the most beautiful mausoleum built during the reign of Mughals. It is made up of pure white marble. It is amongst the seven wonders of the world. It is situated in Agra on the banks of the river Yamuna. The Taj Mahal was constructed by the Mughal Emperor,

Shan Jahan to honour the memory of his beloved wife, Mumtaz Mahal after her death in 1632. 4. We learn about the persons who built monuments, the materials used, the style of architecture and the purpose of the buildings. 5. It is a grand historical building made up of red sandstones. It was built as a fort so that it could be defended from attack. It has a number of gates and is surrounded by the wall made of red stone. Red fort was constructed by the Mughal Emperor Shah Jahan in the seventeenth century. 6. • We should not dirty the place in and around the historical monuments. • Always throw the waste wrappers of useable in the dustbin while visiting any monument. • Do not write on the walls of the monuments. • If you notice any stray animal or bird near such historical monuments, show them away. • Never damage these monuments by removing the bricks and stones from such buildings. • If you notice any person causing any harm to these monuments, stop him from doing so. • Try to reduce air-pollution because this air is causing damage to our historical monuments. Follow all these measures to protect our historical monuments so that we are able to view them in future also.

7. Interdependence on Environment

A. 1. (c) 2. (a) 3. (b) 4. (c) **B.** 1. nature 2. diseases 3. forests 4. balance **C.** 1. True 2. True 3. True 4. True **D.** 1. The world around us is our environment. It includes everything—the air, the soil, the natural resources we are gifted with. 2. All kinds of living beings (humans, animals and plants) on the earth are called biotic components of the environment. 3. All kinds of non-living things (land, water, sunlight, air, etc.) are called abiotic components of the environment. 4. Biotic components are living beings while abiotic components are non-living things. 5. Cutting down trees in large numbers is called deforestation. 6. Deforestation destroys the homes of the wild animals. Deforestation disturbs the balance of nature. Not only the forests give food and shelter to the living beings but they also control climate. They help to have good rainfall, prevent soil erosion and control floods. 7. Our government has banned hunting of wild animals and cutting of trees.

8. Growing Plants

A. 1. (b) 2. (c) 3. (c) 4. (c) 5. (a) **B.** 1. reproduce 2. fruits 3. seeds 4. carrot, radish 5. potato, ginger **C.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **D.** 1. False 2. True 3. True 4. False 5. False **E.** 1. All living things need to reproduce so that their kind does not die out. The process of giving birth to young ones of their own kind is called reproduction. 2. There are many ways in which plants reproduce and multiply—through their seeds, through spores and through their parts, like roots, stems and leaves. 3. The growth of a baby plant from a seed is called germination. 4. Seed is the reproducing part of the plant. 5. Water, air and sunlight. 6. By wind, water currents, fur or hair of animals, explosion, etc. 7. A tea plant requires rainfall, but water should not be allowed to collect around the roots.

9. Our Forest

A. 1. (c) 2. (a) 3. (c) 4. (c) 5. (c) **B.** 1. (c) 2. (d) 3. (a) 4. (e) 5. (b) **C.** 1. different 2. products 3. western 4. pollution 5. soil erosion. **D.** 1. False 2. True 3. True 4. True 5. True **E.** 1. Large areas of land, thickly covered with trees, bushes, creepers and grass are called forests. Forests are important because they provide a home to wild animals. The trees purify the air and check pollution by absorbing carbon dioxide and releasing oxygen. Forests also prevent soil erosion and check floods. Forest products like wood, fruits, lac, honey, fibres, resins, fodder and medicinal plants help us in our daily lives. 2. The tribals depend on the forest for their livelihood. They collect fuel wood, fruits, seeds, honey, wax and medicinal herbs from the forest. They make baskets, chairs and toys from bamboo and cane, perfumes from wild flowers, and plates and bowls from sal leaves. 3. The large scale cutting of trees is deforestation. In recent times, forests have been cut down to provide land for cultivation or to make towns and factories. Many birds and animals are deprived of their homes. The tribals lose their home and their main source of livelihood. The soil loses its fertility due to erosion and does not support agriculture. The fall in agricultural production leads to food shortages and famines. 4. In rural Bharat, the flora of certain areas is considered sacred. The villagers believe that gods live in them. Therefore, they worship these trees and never cut them. They can pick up dead wood but they cannot harm any living plant. Such trees are called sacred groves. Sacred groves are called Devrai in

Maharashtra, Devbhumi in Himachal Pradesh, Oran in Rajasthan. 5. This movement was a people's protest against the felling of trees in an Uttarakhand village. In 1973, villagers in the Alaknanda valley in Uttarakhand protested against the cutting down of trees in the area. When a sports goods manufacturing company wanted to cut down trees, the women of the area adopted a unique method to prevent the felling of trees. They hugged the trees and refused to let go till the tree cutters left. This became popular as the Chipko Movement. Chipko means to hug tightly. Some of the famous leaders of the Chipko Movement were Gaura Devi, Suresha Devi, Sunderlal Bahuguna and Chandi Prasad Bhatt.

10. The World of Animals

A. 1. (b) 2. (b) 3. (b) 4. (c) **B.** 1. scavengers 2. echo 3. antennae 4. sounds 5. mahout **C.** 1. False 2. False 3. False 4. False 5. True **D.** 1. Animals need sense organs to see, smell, touch and feel the world around them. 2. Birds like eagles, owls, hawks and vultures have very strong vision. They can see their prey from kilometres away. Bats, Whales and dolphins make a loud sound. The echo so produced helps them locate food as well as avoid the obstacles on the way. Bees have a strong sense of taste. Some worker bees bring nectar for the other bees to taste. If the bees like the taste, they all go to collect nectar. Cats, dogs, leopards and tigers have a well-developed sense of hearing. They have external ears. Snakes cannot hear as they do not have external ears. They have an ear bone in their head. This bone helps them feel the sound vibrations. 3. Many animals use their body movements to express themselves. Bees dance when they find nectar. This dance help other bees to find their way to the source of nectar. Fish use electrical impulses as a form of communication in water. Sharks, catfish and paddlefish are species that can sense electrical impulses generated by other animals as well. Chimpanzees touch each other's hands in greeting. The male fiddler crab waves a claw to attract the female. Elephants have a unique way of showing affection by entwining their trunks. 4. Milk, eggs, meat, leather belts, shoes, bags, purses, etc. 5. Some people sell cows, buffaloes milk. Some people sell animals products such as leather shoes, belts, purses etc. Some people sell eggs and meat of animals. 6. Large area of forest are protected by government for wild animals

where hunting is prohibited. Such areas are called wildlife sanctuaries. To protect animals and to save the forests the govt. has set up national parks and wildlife sanctuaries all over India.

11. Food for Plants and Animals

A. 1. (b) 2. (b) 3. (b) 4. (a) 5. (c) **B.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c)
C. Do it yourself. **D.** 1. leaves 2. green 3. Scavengers 4. Parasites 5. food **E.** 1. The process by which plants make their food is called photosynthesis. Plants need sunlight, water and carbon dioxide for photosynthesis. 2. Some plants eat insects. Such plants are called insectivorous plants. They generally grow in areas where the soil lacks nutrients, especially nitrogen. 3. The flow of energy from the sun to the plants and then to other animals by the process of eating and being eaten is called a food chain. 4. Green plants, non-green plants, insectivorous plants. 5. Some small animals depend on other living animals for food. They are called parasites. They live on or within the body of other animal.

12. Fuel

A. 1. (c) 2. (c) 3. (c) 4. (c) **B.** 1. electricity 2. biofuels 3. refineries 4. fuel **C.** 1. False 2. True 3. True 4. True **D.** 1. Any material that is burnt to obtain energy is called fuel. Two types of fuels are : (1) Fossil Fuels (2) Alternate fuels 2. Fossil fuels are the remains of animals and plants which were buried underground millions of years ago. Over time, these remains decomposed and took the form of fossil fuels. 3. Alternative fuels are those whose supply can be renewed. They cause less pollution than fossil fuels. Examples of alternative fuels are biodiesel, bioalcohol, electricity, hydrogen and solar energy. 4. Biofuels cost much more than fossil fuels. That is why they are not very popular.

13. Natural Calamities

A. 1. (b) 2. (c) 3. (c) 4. (b) **B.** 1. overflow 2. intensity 3. drought 4. epidemic 5. earthquake **C.** 1. True 2. True 3. False 4. True 5. False 6. False **D.** 1. Whenever there are bigger mass destruction due to various natural causes, these are called natural calamities. 2. The sudden shaking of the earth is called earthquake. When the inner part of the earth gets very hot, the heat tries to escape through cracks made in a weak layer of the surface. It also tries to escape through the space between two rocks. When this happens, the neighbouring

rocks are displaced and that part of the earth begins to shake. This results in an earthquake. 3. Floods are natural calamity which cause mass destruction. When the river water overflows the neighbouring areas, it is called flood. 4. A longer period of dry weather without rainfall is known as drought. This results in shortage of crops. Excess of shortage leads to a famine in the affected area. 5. A volcano is an opening in the earth's surface through which lava, volcanic ash and gases escape. 6. When the storm puts on its devastating form in the seas and oceans, it is referred to as cyclone. 7. When a disease spreads over a wide region infecting hundreds or thousands of people, such type of diseases are called epidemic diseases. 8. By arranging food, clothes, shelter as well as money for the people who suffer losses during such adverse conditions. By arranging medical help for the people who are affected by such calamities. By trying to save people who get trapped anywhere.

14. Pollution

A. 1. (c) 2. (a) 3. (b) 4. (a) **B.** 1. silence 2. compressed natural gas 3. acid rain 4. natural **C.** 1. False 2. True 3. True 4. True 5. True **D.** 1. Anything that harms the environment is known as environment pollution. 2. Air pollution, water pollution, soil pollution, noise pollution. 3. Chemicals released directly from factories, the burning of fossil fuels by automobiles, domestic cooking and heating and from power station, smoke of factories and vehicles and decaying organic matter are causes of air pollution. Solid wastes, leaves, wood, etc. should not be burned in the open. Firecrackers should not be used. Harmful gases given out by factories should be treated with filter before they are released in the air. Use of Compressed Natural Gas (CNG) reduces vehicular pollution. 4. Due to Air pollution, Carbon dioxide emissions increase the level of carbon dioxide in the air. This lead to global warming. 5. Water containing harmful chemicals such as insecticides and pesticides, are washed down with run-off or are emptied directly into the sea, lakes or rivers without prior treatment. Acids, salts and heavy metals like lead and mercury from industrial wastes pollute water. We can control the water pollution in these ways : Garbage and poisonous chemicals should not be dumped in water bodies. Traditional natural fertilizers like animal manure and compost should be preferred to chemical fertilizers by farmers as they are less harmful. Effluents from

factories and domestic sewage should be treated in water treatment plants before being released into water bodies. To avoid thermal pollution, we should ensure that water is sufficiently cool before it is released into water bodies.

15. Work, Force and Energy

A. 1. (c) 2. (c) 3. (c) **B.** 1. pull, push 2. energy 3. friction 4. work 5. force 6. hinders **C.** 1. False 2. False 3. False 4. True 5. False 6. True **D.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **E.** 1. Energy is the ability to do work. To move something, you either push or pull it. A push or pull is called a force. 2. Force of Friction is the force generated by two surfaces that contact and slide against each other. The force of friction ultimately stops a moving body. 3. The pull (force) caused by the earth is called force of gravity. 4. You cannot push or pull a wall. While pulling or pushing, the wall does not move. Its position remains as it is. Because the position of the wall does not change, so no work is done. 5. When an object changes its position from one place to another on applying force, work is said to be done. Work done = force \times distance moved. 6. Coal and petroleum are limited in the nature. They are decreasing slowly. If not used wisely, they will get exhausted after a certain period of time. Therefore, we should use these resources carefully and judiciously. We can conserve them by avoiding their wastage and by using their alternatives. 7. Energy from flowing water can be used to run water mills. Falling water is used to produce hydro-electricity. Wind energy is used to run wind mills. Wind mills are used to pumping water, producing electricity and running wheat grinding machines.

16. Simple Machines

A. 1. (b) 2. (c) 3. (b) 4. (a) **B.** 1. plane 2. slope 3. pulley 4. machines **C.** 1. True 2. False 3. False 4. False 5. True **D.** 1. A simple machine is a device or tool which makes us to do difficult works easily. 2. A pulley is a small wheel with a groove around its outer edge. Pulley is useful machine for lifting heavy weight. 3. A lever is a bar which can turn about one point. This point is called the pivot or fulcrum. The force that we use on the lever is called the effort and the weight or load that we try to lift or move with it is called the load. 4. With a fixed pulley, the pulley is attached to the ceiling, so it's fixed in place. A rope runs through the pulley with an object attached to one end and person holding the other end. As person pull down the rope, the

object is lifted into the air, so the direction of the force changes. 5. An inclined plane is also called a slope. It is used to push up or roll down objects from a higher to a lower level and vice versa. A winding road on a hill is an example of an inclined plane. A wooden plank used to load and unload things in a truck is an inclined plane.



GREEN BOOK HOUSE

(EDUCATIONAL PUBLISHER)

F-214, Laxmi Nagar, Mangal Bazar, Delhi-110092

Phone : 9354766041, 9354445227

E-mail : greenbookhouse214@gmail.com

Website: www.greenbookhouse.com