

Global Science

(Teacher Manual) Class-1 to 5



GLOBAL SCIENCE-1

1. Living and Non-living Things

- A. 1. b 2. b 3. c 4. a 5. c
B. 1. yes 2. no 3. yes 4. yes 5. yes
C. 1. Things that have life in them. 2. Things that do not have life in them. 3. Living things can breathe while non-living things cannot breathe; living things can feel while non-living things cannot feel. 4. In nature. 5. Man-made things.

Hots: I can eat food but ball cannot eat food.

2. The World of Plants

- A. 1. b 2. c 3. a 4. c 5. c
B. 1. shrubs 2. Grasses 3. Climbers 4. Leaves 5. seeds
C. 1. Big and tall plants are trees. 2. Rose and lavender 3. Creepers grow along the ground. 4. Roots, stem, leaves, fruit and flower. 5. Air, water and sunlight.

Hots: Because money plant needs support to stand straight as its stems are weak.

3. Plants as Food

- A. 1. a 2. c 3. c 4. c 5. b
B. 1. F 2. T 3. T 4. F 5. T
C. 1. Roots, stems, leaves and flowers. 2. Fleshy and juicy part of a plant. 3. Cereals and pulses. 4. Tea and coffee are beverages. 5. Red chillies, cumin seeds and clove.

Hots: Cardamom

4. The World of Animals

- A. 1. c 2. a 3. c 4. b 5. b
B. 1. big 2. milk 3. zoo 4. penguin 5. aquatic animal
C. 1. c 2. e 3. b 4. a 5. d

Hots: Honey

5. Food and Homes of Animals

- A. 1. a 2. b 3. b 4. c 5. a
B. 1. T 2. T 3. T 4. F 5. T
C. 1. Plant-eaters eat grass and other green plants while flesh-eaters hunt other animals and eat their flesh. 2. Frog, spider and lizard. 3. Elephants, monkeys and rabbits. 4. Birds 5. Dog and cow.

Hots: No, Prachi is not correct because rabbits are grain-eaters.

6. Air

- A. 1. a 2. b 3. b 4. c 5. c
B. 1. Air 2. breathe 3. move 4. wind 5. helps
C. 1. When it moves. 2. The air takes up the space inside the balloon. 3. Moving air is called wind. 4. Air occupies space and has weight.

5. Air helps us to breathe and to burn things.

Hots: There will be no life on the Earth.

7. Water

- A. 1. a 2. b 3. c 4. b 5. a
B. 1. F 2. T 3. F 4. T 5. T
C. 1. Plants need water to grow. 2. For drinking and bathing. 3. Rain 4. A large water body that flows towards sea or ocean. 5. Pot, bucket, bottle and tank.

Hots: Because he got infection due to drinking dirty water and boiled water is clean and good for health.

8. Weather and Seasons

- A. 1. b 2. c 3. b 4. c 5. a
B. 1. sun 2. summer season 3. winter season 4. monsoon 5. fall
C. 1. c 2. e 3. d 4. b 5. a

Hots: Because his child had eaten an ice cream in winter season.

9. In the Sky

- A. 1. b 2. c 3. c 4. c 5. c
B. 1. F 2. F 3. F 4. T 5. T
C. 1. The space above the Earth. 2. The sun. 3. No. 4. People who travel in space. 5. Because they are very very far from us.

Hots: She was telling the truth because there might be no moon on that day.

10. Knowing Your Body

- A. 1. c 2. a 3. a 4. a 5. b
B. 1. two 2. two 3. ten 4. two 5. two 6. one 7. one 8. two
C. 1. Many 2. Writing and eating 3. Running and skipping 4. Eyes, nose sense organs. 5. Skin

Hots: No, because we need eyes to be open to see the colour of cap.

11. Food for Health

- A. 1. b 2. c 3. a 4. c 5. a
B. 1. fruits, vegetables and cereals 2. milk, eggs and meat 3. butter, ghee and curd 4. breakfast, lunch and dinner
C. 1. To live and grow. 2. Plants and animals. 3. Food items that are made from milk. 4. Foods that help healthy foods. 5. Breakfast, lunch and dinner.

Hots: Because if Rahul will take healthy foods then he will never fall sick.

12. Housing and Clothing

- A. 1. c 2. a 3. c 4. a 5. c
B. 1. houseboats 2. rooms 3. bedroom

4. clothes 5. cotton

C. 1. To live in. 2. Permanent houses made are of bricks, cement and steel while temporary houses are made of mud, thatch and dry grass. 3. Houses that are made of cloth. 4. We wear cotton clothes in summer season and woollen clothes in winters. 5. Special clothes wear by some people at work.

Hots: No, because houseboats are not found in Delhi.

13. Keeping Healthy

A. 1. b 2. c 3. a 4. c 5. b

B. 1. F 2. F 3. F 4. T 5. T

C. Eat healthy food surroundings clean. 2. Makes us feel of energy. 3. Exercising and playing outdoor games. 4. By keeping ourselves dust and germs free. 5. Throw trash in trashbin and cover the mouth while sneezing.

Hots: The child is eating food while watching TV. No, because this is not a good habit.

14. Keeping Safe

A. 1. c 2. a 3. a 4. c 5. c

B. 1. Safety 2. zebra crossing 3. road 4. Green 5. heater

C. 1. Staying away from harm. 2. Always walk on the footpath and cross the road at the zebra crossing. 3. Do not put moving bus and do not board moving bus. 4. Red light tells to go. 5. Do not play blades and do not play with switches.

Hots: Because he might be playing with matchsticks.

GLOBAL SCIENCE-2

1. Types of Plants

A. 1. a 2. c 3. c 4. a 5. c

B. 1. Trees 2. Shrubs 3. Stem 4. Roots 5. Fruit

C. 1. Hard and thick woody stem of a tree.

2. Shrubs; cotton and croton. 3. Because they have weak stems. 4. They give support to plant growth. 5. Flower

Hots: Because leaves make food for the plant.

2. Uses of Plants

A. 1. c 2. b 3. a 4. b 5. b

B. 1. air 2. Spices 3. Coffee 4. Tulsi 5. Gum

C. 1. d 2. c 3. a 4. b 5. c

D. 1. They give us clean.

2. From plants 3. Black pepper and turmeric.

4. Trees are wild animals.

5. Bamboo

Hots: Willow tree.

3. Useful Animals

A. 1. a 2. c 3. c 4. b 5. a

B. 1. T 2. T 3. F 4. T 5. T

C. 1. lion 2. cow 3. oil 4. tie 5. sheep

D. 1. Animals that we animals.

2. Cows, buffaloes and goats. 3. Silkworm

4. Shoes, jackets and belts. 5. Donkey, horse, ox and elephant; because they are used to carry our fields.

Hots: Cake

4. Wild Animals

A. 1. b 2. a 3. b 4. c 5. a

B. 1. Rabbit 2. Monkey 3. Cow 4. Jackal 5. Dodo

C. 1. Animals that live in forests. 2. Elephant, giraffe and zebra. 3. In nest 4. Herbivores eat grass, leaves and fruits while carnivores eat the flesh of other animals. 5. Human beings other things.

Hots: Frog

5. Bones and Muscles

A. 1. b 2. c 3. a 4. c 5. b

B. 1. F 2. T 3. F 4. T 5. F

C. 1. The bones together called the skeleton. 2. The skull 3. To bend and twist. 4. To allow us to walk, run and play. 5. The position called posture.

Hots: Disagree; because without bones we would not be able to stand straight and move.

6. Food

A. 1. c 2. a 3. b 4. a 5. b

B. 1. food 2. protective 3. first 4. slowly 5. uncovered

C. 1. To live and grow. 2. Rice, sugar, butter, potato, etc. 3. It helps us to from our body. 4. Some people called vegetarians and some non-vegetarians.

5. (a) Wash meals. (b) Always eat food.

Hots: Because they protect us from diseases.

7. Housing and Clothing

A. 1. a 2. c 3. b 4. a 5. c

B. 1. Pucca 2. flats 3. tents 4. summers 5. Wool

C. 1. We need a unwanted animals. 2. Pucca house is made of bricks steel while kutcha house is made of mud. 3. Houses that float on water. 4. Cotton clothes; because they keep our body sweat. 5. From sheep

Hots: We wouldn't be safe and it would be difficult for us to live.

8. Keeping Safe

A. 1. a 2. b 3. a 4. c 5. a

B. Do yourself.

C. 1. Our carelessness 2. On the pavement.

3. Do not lean out moving vehicle. 4. Do not play slide or see-saw. 5. Swimming tube

Hots: 1. Wrong, because he could meet with an

accident. 2. Unsafe, because he may slip down the stairs and get hurt.

9. Air

A. 1. b 2. c 3. a 4. b 5. c

B. 1. feel 2. air 3. Clean 4. storm 5. dry

C. 1. Air is a mixture of gases. 2. Gases, water vapours, dust particles, smoke and germs. 3. By growing more plants. 4. Breeze is a soft blowing wind while storm is a fast blowing wind. 5. Wind helps on water; Wind moves of a windmill.

Hots: Because it leaves germs in the air which can cause diseases to others.

10. Water

A. 1. b 2. a 3. c 4. c 5. b

B. 1. Rain 2. Wells 3. dirty 4. tap 5. hoses/pipes

C. 1. Rainwater fills called surface water. 2. Wells, tube wells ground water. 3. Potable water 4. The clean potable water. 5. Close the bathing.

Hots: No, because they are wasting water that can be used to water plants.

11. Forms of Water

A. 1. c 2. a 3. c 4. c 5. a

B. 1. Water 2. Steam 3. freezing 4. solid

C. 3, 1, 2, 5, 4

D. 1. Solid, liquid and gas. 2. When water changes called evaporation. 3. When steam called condensation. 4. The sun heat seas and oceans. 5. Water vapours rise up and cool down to form clouds.

Hots: Liquid

12. Weather and Seasons

A. 1. a 2. c 3. b 4. a 5. b

B. 1. Weather 2. Season 3. Loo 4. Winter season 5. Rainbow

C. 1. Weather is a and time. 2. When one season; five seasons. 3. We wear cotton calm. We enjoy and fruit juices. 4. December and January 5. During this season rains a lot.

Hots: Woollen clothes, because there is cold on hilly areas and Darjeeling is a hilly area.

13. Rocks and Minerals

A. 1. a 2. a 3. b 4. c 5. c

B. 1. GRANITE 2. MARBLE 3. CHINA CLAY 4. QUARTZ 5. SILICA

C. 1. Rocks are valleys. 2. Rocks are and soft. 3. Slate. 4. Gold and silver 5. Gemstones are different colours. Ruby and Sapphire.

Hots: The Taj Mahal, it is located in Agra.

14. Sun, Light and Shadow

A. 1. c 2. b 3. a 4. c 5. b

B. 1. F 2. T 3. T 4. F 5. T

C. 1. The sun is a the west. 2. The sun heats clothes. 3. Bulb and tube light. 4. When any object called a shadow. 5. Because the shape position of the sun.

Hots: West

GLOBAL SCIENCE-3

1. Living and Non-living Things

A. 1. a 2. b 3. c 4. b 5. c

B. 1. Plants 2. Living 3. Animals 4. air holes 5. Humans

C. 1. Things that have life of environment. 2. Things that have no life environment. 3. Plants make their own food photosynthesis. 4. Animals lay eggs few days. 5. Plants do not move show different movements. Example: The sunflower always faces towards the sun.

Hots: Computer is a non-living thing so it does not need food and water.

2. Parts of a Plant

A. 1. a 2. b 3. b 4. b 5. c

B. 1. Root 2. stomata 3. petals 4. baby 5. Leaves

C. 1. Taproot is fibrous roots. 2. The stem their stems. 3. The main flat gases. 4. Because they make food for the plants. 5. Sunlight, air and water.

Hots: Kruti said wrong. Because leaves are the most important part of plants because they make food for the plants.

3. Eating Habits of Animals

A. 1. a 2. a 3. c 4. b 5. b

B. 1. T 2. F 3. T 4. F 5. T

C. 1. Grass, leaves and plants. 2. Animals that eat both as omnivores. 3. Some herbivores chewing of cud. 4. Omnivores small pieces. 5. Dogs and cats lapping.

Hots: Because human beings eat both plants and flesh of animals.

4. Understanding Birds

A. 1. a 2. b 3. a 4. c 5. b 6. c

B. 1. feathers 2. warm 3. Cardinal 4. talons 5. Penguins

C. 1. T 2. T 3. F 4. T 5. F

D. 1. c 2. d 3. e 4. b 5. a 6. f

E. 1. Body feathers, flight feathers, down feathers. 2. In upstroke flying. 3. Birds like woodpeckers their nests. 4. Birds like sparrows at the back. 5. A tailor bird fibres. 6. The birds hatching.

Hots: 1. If woodpecker will have broad and flat beak then they cannot use their beaks to bore

holes into the bark of trees, to eat insects and make their nests. 2. Because they use their front toes to grip the branches and back toe to lock around the branch then they sleep.

5. The Human Body

A. 1. a 2. b 3. c 4. a 5. c

B. 1. b 2. a 3. e 4. c 5. d

C. 1. Cells are activities. 2. The human column. 3. Digestion is the anus. 4. The lungs body. 5. Excretory carbon dioxide.

Hots: Because our fingers have blood vessels.

6. Keeping Safe

A. 1. a 2. c 3. c 4. a 5. c

B. 1. F 2. F 3. T 4. T 5. F

C. 1. Knives or appliances. 2. Diwali quickly. 3. Do not school gate. 4. First aid is arrives. 5. If there's bleeding pat dry.

Hots: Because Pankhuri's father want safety of Pankhuri.

7. Housing and Clothing

A. 1. b 2. a 3. c 4. b 5. b

B. 1. Igloos 2. Houseboat 3. Cotton clothes 4. Silk 5. Polyester

C. 1. We all our house. 2. People called nomads. 3. A good house germ-free. 4. We should kept covered. 5. Fibres we get man-made fibres.

Hots: Because this fibre lets the water drip down and away from clothing.

8. Air and Water

A. 1. b 2. c 3. b 4. c 5. a

B. 1. F 2. T 3. T 4. F 5. T

C. 1. Air is to live. 2. Air contains of glass. 3. Water exists into water. 4. In the atmosphere precipitation. 5. The water cycle back again.

Hots: Because air contains germs so while sneezing, germs come from our body and mixed with the air and we are affected by these germs.

9. Weather and Season

A. 1. b 2. a 3. a 4. c 5. c

B. 1. winds 2. rainy 3. loo 4. hilly 5. spring

C. 1. On some days sun shines of the day. On some days cloudy days. 2. We wear sweat. 3. They use warm. 4. During monsoon getting wet. 5. Floods cause a lot roads.

Hots: Due to fog and mist.

10. The Earth

A. 1. b 2. a 3. b 4. a 5. c

B. 1. T 2. F 3. T 4. F 5. T

C. 1. Our Earth is their life. 2. Photographs called astronauts. 3. The Earth called rotation. 4. The rotation of 24 hours. 5. Our Earth a year.

Hots: If our Earth does not rotate then the part that faces the sun will always have day and the part that is away from the sun will always have night.

11. The Solar System

A. 1. a 2. b 3. c 4. b 5. a

B. 1. Sun 2. Planets 3. Moon 4. New moon 5. Constellations

C. 1. Our solar system planets. 2. There are Neptune. 3. Crescent moon full moon. 4. Some stars constellations. 5. A telescope is stars.

Hots: The sun

12. Soil and Rocks

A. 1. b 2. c 3. a 4. c 5. a

B. 1. Plants 2. Soil 3. Humus 4. Loamy 5. Diamond

C. 1. The topmost soil. 2. Soil is formed or more. 3. Sandy, clayey and loamy. 4. Loamy soil plants. 5. Granite is buildings.

Hots: Sand is a type of soil but both are formed by the erosion of rocks. Soil is different from sand though because it contains organic matter such as the remains of plants and animals.

13. Light, Sound and Force

A. 1. a 2. c 3. b 4. b 5. a

B. 1. T 2. F 3. T 4. F 5. T

C. 1. Bulb, torch on them. 2. Shadows are of light. 3. Sounds that noises. 4. Force helps us rolling it. 5. The force that called friction.

Hots: Due to friction between our legs and floor.

14. Measurement

A. 1. a 2. b 3. c 4. c 5. c

B. 1. e 2. c 3. d 4. b 5. a

C. 1. Metre (m) 2. Capacity is hold. 3. Time is seconds. 4. Temperature object is. 5. The standard kilogram (kg).

D. 1. scale 2. Capacity 3. litre 4. hours 5. Temperature

E. 1. Electronic balance 2. Measuring beaker 3. Measuring can 4. Weighing balance 5. Measuring tape 6. Thermometer

Hots: Meter rod

GLOBAL SCIENCE-4

1. Green Plants: The Food Factory

- A. 1. b 2. a 3. c 4. b 5. a
B. 1. food 2. Leaves 3. green 4. petiole
5. chlorophyll 6. Starch
C. 1. F 2. F 3. T 4. T 5. F
D. 1. Green plants in the leaves. 2. By the type of its leaf. 3. The flat surface stomata. 4. The process of making photosynthesis. 5. As human beings and depend on one another.

Hots: No, the roots make food for the plant. They transfer water and nutrients to other parts of the plant which will make food using these nutrients and sunlight with the help of chlorophyll.

2. Adaptation in Plants

- A. 1. a 2. c 3. a 4. a 5. b
B. 1. terrestrial 2. spines 3. needle-like 4. hot 5. fixed
C. 1. c 2. d 3. f 4. a 5. b 6. e
D. 1. To survive in a adaptation. 2. Cacti have thick absorb as much water as possible. 3. Pine trees do not shed evergreen trees. 4. Mangrove trees grow breathing roots. 5. Floating plants (water hyacinth and water lettuce), Fixed plants (lotus and water lily) and Underwater plants (hydrilla and tape grass). 6. They absorb food from dead remains of plants and animals.

Hots: Underwater plants such as hydrilla and tape grass are used in aquariums as they help in cleaning water.

3. Reproduction in Animals

- A. 1. a 2. b 3. c 4. b 5. a
B. 1. f 2. e 3. b 4. c 5. d 6. a
C. 1. The process by reproduction. 2. Animals like lion after few days. 3. An egg has provides it with water. 4. Frogs lay their eggs grows into an adult frog. 5. Four stages or three stages.

Hots: It means it does not have an embryo.

4. Adaptation in Animals

- A. 1. a 2. c 3. b 4. c 5. b
B. 1. habitat 2. fins 3. hump 4. arboreal 5. horns
C. 1. F 2. T 3. T 4. F 5. T 6. T
D. 1. Elephant, Tiger 2. Fish, Crab 3. Frog, Salamander 4. Monkey, Squirrel 5. Birds, Insects
E. 1. Camels have thick skin and long legs to keep them off from the hot sand and help to keep its body cool. They water and food. 2. Polar bear has protects it from enemies. 3. They have lungs

moist skin. 4. Animals like tick parasites. 5. Polar bear and chameleon are two animals that camouflage. Thus, they confuse camouflaging. 6. Some birds of cold from severe cold.

Hots: Camels survive in the desert without both food and water for long periods of time. They do this by storing water and food in the humps on their backs which they consume slowly as needed.

5. Our Food and Nutrition

- A. 1. a 2. b 3. a 4. c 5. b 6. a
B. 1. T 2. F 3. T 4. T 5. T
C. 1. Rice, Wheat 2. Butter, Ghee 3. Eggs, Pulses 4. Milk, Carrot 5. Tomato, Orange 6. Milk, Cheese
D. 1. Food contains called nutrients. 2. Carbohydrates, fats, proteins, vitamins and minerals. 3. Carbohydrates give us rich in carbohydrates. 4. Proteins help our called body-building nutrients. 5. Roughage helps the body to get rid of undigested food. 6. The food we eat called balanced diet.

Hots: Children need proteins so that they can grow and increase in a good way. They require proteins for growing bones and general body health. Protein gives them energy, so that they can get through the day without health problems.

6. Our Teeth and Digestion

- A. 1. b 2. b 3. a 4. c 5. a 6. c
B. 1. temporary 2. root 3. enamel 4. Canines 5. mouth 6. stomach
C. 1. T 2. F 3. T 4. T 5. F 6. T
D. 1. Human beings and the permanent. 2. A tooth is basically called the neck. 3. Incisors, Canines, Premolars and Molars. 4. For healthy teeth our teeth strong. 5. The process by which the body through the anus. 6. Wash your hands interval of time.

Hots: The primary function of the large intestine is the transportation of waste and re-absorption of water from it before it is excreted. When proper metabolism has taken place the waste is usually in solid form.

7. Keeping Safe

- A. 1. b 2. b 3. c 4. a 5. b 6. b
B. 1. accidents 2. potholders 3. wet 4. pavement 5. hand signals 6. cold water
C. 1. T 2. F 3. T 4. T 5. F 6. T
D. 1. Do not play to handle hot objects. 2. Do not leave you may fall down. 3. Do not run up fight with anybody. 4. Cross the road

..... traffic light is red. 5. First aid is the doctor arrives. 6. Wash the cut adhesive bandage.

Hots: We should cross the railway tracks only at the railway crossing or use the foot over bridge. While crossing the railway tracks at the gate, wait for the gates to open.

8. Clothes and Fibres

A. 1. a 2. a 3. c 4. c 5. c

B. 1. good 2. cotton 3. leather 4. animals 5. silkworm

C. 1. d 2. c 3. e 4. b 5. a

D. 1. We wear clothes rain and insects. 2. Some people wear called uniform. 3. Natural fibres and Man-made fibres. 4. Cotton is obtained from beautiful clothes. 5. Clothes should be insects or moths.

Hots: Dark-coloured clothes absorb heat and keep us warm and are usually worn in winter.

9. Weather, Air and Water

A. 1. b 2. a 3. a 4. c 5. b

B. 1. gases 2. oxygen 3. three 4. bacteria 5. boiling

C. 1. T 2. F 3. F 4. T 5. F

D. 1. The most common water vapours. 2. During the day land breeze. 3. Evaporation is the its vapour form. Condensation is the its liquid form. 4. The heat of the sun called the water cycle. 5. Soluble and insoluble 6. When water is called decantation.

Hots: The heat of the sun causes winds to blow. It is also responsible for the motion of clouds. When the sun shines brightly, its rays fall directly on the Earth which makes a day hot. So, wet clothes dry quickly on hot sunny days.

10. States of Matter

A. 1. a 2. c 3. c 4. b 5. c

B. 1. F 2. T 3. T 4. F 5. F

C. 1. Table, Chair 2. Juice, Coffee 3. Perfume, Smoke

D. 1. Matter is anything made up of atoms. 2. Solid, liquid and gas. 3. Solids have definite touch. Liquids do not poured. Gases do not perfume. 4. In gases, the at high speed. 5. The solid substance called solvent.

Hots: In gases, the molecules are very loosely packed. There is lot of space among them. So, they can move freely at high speed. So, we can say that the smell of a perfume spreads from one corner of room to all around the room.

11. Force, Work and Energy

A. 1. b 2. b 3. c 4. a 5. c 6. c

B. 1. d 2. a 3. f 4. b 5. c 6. e

C. 1. force 2. muscular force 3. simple machines 4. inclined plane 5. energy 6. geothermal energy

D. 1. Force helps us change its direction. 2. The force that gravitational force. 3. Wheel and axle move loads. 4. Pulley is used sailboat. 5. Sun, Wind, Water, Fuel and Earth. 6. Mechanical energy, Chemical energy, Heat energy, Electrical energy, Magnetic energy and Sound energy.

Hots: It is so hard to walk on ice because unlike on cement, when you step on ice you do not create friction. This causes your feet to slide along the ice.

12. Our Universe

A. 1. c 2. b 3. a 4. a 5. a 6. b

B. 1. star 2. eight 3. Jupiter 4. Moon 5. rotation 6. revolution

C. 1. T 2. F 3. F 4. T 5. F 6. T

D. 1. b 2. d 3. a 4. e 5. c

E. 1. Stars are not called planets. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. 2. Mercury is the solar system. 3. Venus is the and evening. 4. The Earth has centre of the Earth. 5. Volcano is the called lava. 6. The spinning the Earth.

Hots: 1. There is no life on Mercury. This planet is closest to the sun which makes it the hottest planet in the day and coldest at night. Mercury does not have any oxygen so you won't be able to breathe. Mercury does not have an atmosphere, so there is no air pressure. You would die due to vacuum. **2.** If the Earth stops rotating there will be no days or nights. One part of the Earth will always experience day and the other part will always experience night.

13. Soil

A. 1. a 2. c 3. c 4. b 5. a

B. 1. soil 2. weathering 3. living 4. Sandy 5. soil erosion

C. 1. T 2. T 3. F 4. T 5. T

D. 1. Soil is formed and forms soil. 2. Soil is a mixture air and water. 3. The uppermost layer rock (bedrock) layer. 4. Sandy soil to touch. Clayey soil lot of water. Loamy soil holding capacity. 5. The top layer called soil erosion.

Hots: Earthworms assist with decomposition. They process dead matter and return these materials to the soil in plant usable forms. They

also assist with the aeration of the soil.

14. Pollution

A. 1. a 2. a 3. c 4. b 5. b

B. 1. F 2. T 3. F 4. F 5. T

C. 1. The addition called pollution. 2. Air pollution, Water pollution and Land pollution 3. Gases like also pollute air. 4. Water pollution animals and plants. 5. Walking or cycling properly and safely.

Hots: Yes, bathing in the river causes water pollution.

GLOBAL SCIENCE-5

1. Reproduction in Plants

A. 1. a 2. c 3. a 4. b 5. a 6. a

B. 1. seeds 2. Seed coat 3. water 4. rose 5. spores 6. summer

C. 1. T 2. F 3. T 4. F 5. T

D. 1. Poles of squirting cucumber, Euphorbia 2. Blackberries, Burdock 3. Rice, Bajra 4. Wheat, Mustard 5. Potato, Colocasia 6. Mushrooms, Ferns

E. 1. With the help of into a seedling. 2. Germination means water and sunlight. 3. Some plants and spores. 4. The process by which and explosion. 5. According to seasons rabi crops. 6. Stages of Agriculture at safe places.

Hots: 1. Roots 2. The crops may get destroyed by pests.

2. Animals Around Us

A. 1. c 2. a 3. b 4. c 5. b 6. b

B. 1. c 2. f 3. a 4. b 5. c 6. d

C. 1. F 2. T 3. T 4. F 5. T 6. T

D. 1. The place where its habitat. 2. To protect themselves hide themselves. 3. Animals like fishes out in water. 4. Birds are flying their direction. 5. Some birds like ostrich flightless birds. 6. Migration is the of food. 7. Some animals like frog moist skin. 8. Animals like cow chewing the flesh.

Hots: 1. Because they have hump to store food and water. 2. Because they do not fly upto tree as their body is very heavy.

3. Our Body

A. 1. b 2. c 3. a 4. c 5. a 6. c

B. 1. organism 2. backbone 3. joint 4. pivot 5. movement 6. Voluntary

C. 1. The skeletal system 2. Vertebrae 3. Femur 4. Ball and Socket joint 5. Cardiac

D. 1. The skeletal system of our body. 2. Bones are hard bone marrow. 3. The different and

girdles. 4. The point where two called ligaments. 5. Pivot joint movable joints. 6. There are three cardiac muscles.

Hots: 1. We will not be able to talk or eat food. 2. No

4. Nervous System

A. 1. b 2. a 3. c 4. a 5. b 6. b

B. 1. T 2. T 3. T 4. F 5. T 6. T

C. 1. b 2. d 3. e 4. c 5. a

D. 1. Our nervous system and the nerves. 2. The cerebrum is the circulating blood. We have three from the brain. 3. Our brain reflex actions. 4. Our eyes to the brain. 5. The ear has in the inner ear.

Hots: 1. Cerebrum 2. Iris

5. Food, Health and Hygiene

A. 1. b 2. b 3. c 4. c 5. c 6. b

B. 1. Carbohydrates 2. Proteins 3. Calcium 4. sleep 5. disease 6. Virus

C. 1. T 2. F 3. T 4. T 5. F 6. F

D. 1. The food we eat and minerals. 2. The food pyramid and healthy. 3. Some diseases can spread called germs. Non-communicable deficiency diseases. 4. There are different athlete's foot. 5. Communicable diseases indirect contact. 6. Diseases that are deficiency diseases.

Hots: 1. Roughage helps in digestion. 2. Because the disease can spread and other children can also get affected

6. Safety and First Aid

A. 1. c 2. b 3. a 4. c 5. b 6. a

B. 1. earphones 2. moving 3. heater 4. cold 5. ice pack 6. doctor

C. 1. F 2. T 3. F 4. T 5. T 6. T

D. 1. Always check the brakes or stones. 2. Never go near in a boat. 3. If your clothes put off fire. 4. A sprain occurs swell up. A fracture move the part. 5. Sit down to a doctor. 6. Wash the wound anti-rabies injection.

Hots: 1. Because he does not fasten his car seat belt. 2. Sit with the head held back and put ice pack over the nose.

7. Air and Water

A. 1. a 2. c 3. c 4. b 5. c 6. a

B. 1. b 2. c 3. a 4. e 5. d

C. 1. atmosphere 2. ozone layer 3. oxygen 4. Rain 5. Evaporation 6. insoluble

D. 1. Our planet Earth the atmosphere. 2. The atmosphere of the

..... in the space. 3. With the help of given supports combustion. Water can dissolve in many vehicles. 4. Atmosphere is very important water cycle. 5. In this process, dirty is the pure water. 6. What you will do in the glass.

Hots: 1. Human beings, plants and animals. 2. To remove dissolved germs in water.

8. The Moon

A. 1. c 2. a 3. b 4. a 5. a 6. b
B. 1. e 2. d 3. b 4. c 5. a
C. 1. T 2. T 3. F 4. F 5. T
D. 1. The surface of the moon and valleys. 2. The moon has no on the moon. 3. The moon changes waning phase of the moon. 4. When the sun partial lunar eclipse. 5. An artificial satellite upon their uses. 6. Uses of Satellites around the world.

Hots: 1. Because moon has no air and weather, the days are very hot while nights are very cold. 2. New moon

9. Soil

A. 1. a 2. b 3. c 4. b 5. a 6. b
B. 1. Soil 2. Clayey 3. living 4. deserts 5. Deforestation 6. embankments
C. 1. Our Earth's crust and animals. Soil is important fertility of soil. 2. sandy, clayey and loamy. 3. The upper layer is bedrock. 4. The removal of topsoil growth of plants. 5. The factors cause soil erosion. 6. Plant more and against winds.

Hots: 1. Because it contains a lot of humus and decomposed organic matter. 2. Grazing of cattle at same place every day leads to soil erosion.

10. Rocks and Minerals

A. 1. b 2. c 3. b 4. a 5. c 6. c
B. 1. c 2. e 3. b 4. f 5. a 6. d
C. 1. F 2. F 3. F 4. T 5. T 6. F
D. 1. They are the earliest form igneous rocks. 2. When lava cools foot scrubber. 3. The Earth's surface called sedimentary rock. 4. Slate and in watches. 5. When plants died remains into coal. 6. Petroleum is also and cosmetics.

Hots: 1. Because it has many holes that make it very light to float on water. 2. Diesel

11. Force, Work and Energy

A. 1. a 2. c 3. b 4. c 5. b
B. 1. Frictional 2. muscular 3. Energy 4. coal 5. solar energy 6. windmills

C. 1. This push or pull the moving object. 2. Frictional force helps easily on board. 3. Magnets exert magnetic force. 4. Work is done a shelf, etc. 5. To do work do work. 6. Light Energy Biomass Energy.

Hots: 1. To reduce friction 2. Gravitational force

12. Simple Machines

A. 1. b 2. a 3. c 4. c 5. c 6. a 7. a
B. 1. rod 2. effort 3. levers 4. Pulley 5. wheel 6. fulcrum
C. 1. F 2. T 3. F 4. F 5. T 6. F
D. 1. Simple machines Screw. 2. A lever has three to be done. 3. In order to move called fulcrum. 4. A pulley is a heavy engines. 5. Fixed pulley to pull the load. 6. The wheel and axle and axle. 7. A wedge examples of wedges.

Hots: 1. Because, the fulcrum is in between the load and the effort. 2. Lever (scissors)

13. States of Matter

A. 1. b 2. c 3. a 4. a 5. b 6. a
B. 1. T 2. F 3. T 4. T 5. F 6. F
C. 1. Anything that has called matter. 2. Matter contains called molecules. 3. Changing of liquid evaporation. 4. Changing of gas condensation. 5. The substance a solute. 6. The solute a solvent.
D. 1. Matter contains 'building blocks of matter'. 2. Matter exists in all directions. 3. A change in which no of a bulb. 4. A change in which new of food. 5. Solubility is the uniform nature. 6. Liquids that dissolve surface of water.

Hots: 1. Because solids have fixed shape and molecules are closely packed. 2. Because in this change no new substance is formed.

14. Natural Disasters

A. 1. a 2. b 3. a 4. b 5. b 6. c
B. 1. c 2. e 3. a 4. f 5. b 6. d
C. 1. tectonic 2. seismic 3. seismograph 4. crater 5. Active 6. Drought
D. 1. A natural disaster life and property. 2. An earthquake seismic waves. 3. Types of Volcanoes an extinct volcano. 4. Tsunamis are giant along the coasts. 5. It is a type of as a hurricane. 6. Flood is caused of food supply.

Hots: 1. seismograph 2. No, because magma is molten rock beneath the earth crust and lava is the molten rock which erupts out from the vent.

Global Science

(Teacher Manual)

Class-6 to 8



SCIENCE-6

1. Food and its Sources

- A.** 1. a 2. c 3. b 4. d 5. a 6. b 7. c
B. 1. energy 2. plants, animals 3. food, drink 4. seeds 5. flavour 6. swallow 7. omnivores
C. 1. T 2. T 3. F 4. T 5. F 6. T 7. T
D. 1. f 2. e 3. d 4. a 5. b 6. c
E. 1. All living things for nourishment. 2. An ingredient is a food item. 3. We know that as 'producers'. 4. Spinach, apple, wheat, beetroot and broccoli. 5. Eggs, milk, meat, honey and ghee. 6. Some carnivores and omnivores surroundings clean.
F. 1. The food is any against the diseases. 2. Plants provide us stem or leaves. Many spices such certain seeds. Animals can be as dairy products. 3. Some carnivores and our surroundings clean. Parasites are the suck the blood. 4. The animals which eat examples of herbivores. 5. The animals which eat snake are a few examples of carnivores. 6. The animals which eat both examples of omnivores.

HOTS

1. Sprouted seeds are very nutritious and rich in high protein. 2. Fungi and bacteria are living organisms in nature that feed on and decompose dead plants and animals. Without these organisms, our planet would be covered with dead plants and animals.

2. Components of Food

- A.** 1. c 2. a 3. c 4. a 5. b 6. c 7. c 8. a
B. 1. carbohydrates 2. sugar 3. photosynthesis 4. skin 5. saturated 6. tissues 7. vitamins
C. 1. F 2. T 3. T 4. T 5. F 6. F 7. F 8. T
D. 1. e 2. b 3. a 4. c 5. d
E. 1. Our daily diet called nutrients. 2. We get most rich in starch. 3. Animal proteins by the body. 4. Vitamins A, D, E presence of sunlight. 5. Vitamins B and C supplied through food. 6. Water is an weight is due to water. 7. Besides nutrients, our in our food. 8. Diseases that are called deficiency diseases.
F. 1. Our daily diet in a variety of foods. 2. Aim : To test the it contains

starch. 3. Proteins are the main in short supply. 4. Minerals are needed vegetables and fruits. 5. Water is an important urine from the body. 6. Our body loses sources of water. 7. Besides nutrients, our sources of roughage. 8. The food we eat rich in carbohydrates.

HOTS

1. Oily or junk foods are considered harmful due to their high fat or sugar content and poor nutritional value. Eating too much of oily or junk foods may make us over weight and finally lead to obesity. This may lead to heart diseases. So, they are very harmful for our body. 2. We are often advised to include a lot of raw food in our diet and to eat fruit along with the peel. The plant food material contains a lot of fibre in the form of cellulose. Interestingly, roughage does undigested food. 3. No. A labour needs more carbohydrates and fats in comparison to a child doing routine physical work. A growing child needs a balanced diet as this helps him to get over all nutrients which make him grow healthier.

3. Fibre to Fabric

- A.** 1. a 2. b 3. d 4. d 5. a 6. b 7. a
B. 1. fabric 2. Denim 3. cotton 4. twisting 5. wool, spun 6. synthetic
C. 1. c 2. d 3. f 4. b 5. a 6. e
D. 1. T 2. T 3. F 4. T 5. F 6. T 7. F
E. 1. Clothes are needs. They protect good and smart 2. Primitive people did not of dead animals. 3. Clothes are made up to make fabrics. 4. The advantages of cotton and humid weather. 5. Synthetic clothes are and humid climate. 6. Cotton is a soft the cotton plant. 7. Cotton fibres are quilts and cushions. 8. It is used mainly backing for linoleum.
F. 1. Weaving is a process woven by this method. 2. In knitting a single or by machine. 3. The fibres are made is called spinning. A number of fibres twisting them together. 4. Jute is produced process is called retting. 5. The fibres of some examples of synthetic fibres. 6. Cotton seeds are woven into a

fabric. 7. Silk is obtained to get silk fibre. 8. In addition, scientists synthetic fibres. They are obtained used to make fabric. Rayon, polyester examples of synthetic fibres.

HOTS

1. Cotton contains sufficient air space between its fibres to soak more liquids efficiently. So, the cotton clothes sometimes shrink when washed. 2. Silk cotton and coir do not need to undergo retting because they are not obtained from the stem of the plant. Silk cotton is a plant fibre obtained from the silky hair that surrounds the seed of the kapok. Silk cotton is very light and fluffy. In the same way, coir is a coarse fibre extracted from the fibrous outer shell of a coconut. The coir fibre is relatively water-proof. Both of them float on the water surface. 3. A spinneret is used to make nylon but is not needed to make cotton or wool fibres because cotton or wool are natural fibres. Cotton is obtained by picking, ginning and spinning. Wool is the fibre derived from the hair of sheep and some other animals. Removing the wool from sheep using special clippers is called shearing. After shearing the wool is cleaned and spun into fibre. But a spinneret is used to make nylon or polyester. A spinneret is a device which contains fine holes. The long threads that come out from these holes are allowed to cool and solidify.

4. Sorting Materials into Groups

- A. 1. a 2. b 3. c 4. b 5. c 6. b 7. b
B. 1. sorting 2. supermarket 3. material 4. translucence 5. soluble 6. smooth 7. volume
C. 1. g 2. f 3. d 4. c 5. e 6. b 7. a
D. 1. F 2. T 3. T 4. F 5. T 6. T 7. F
E. 1. The bark of tree, rock and sand paper. 2. You feel different basis of their texture. 3. Cotton, wool and rubber ball. 4. In solids, silver conductors of heat. 5. Clothes, paper wool conductors of heat. 6. You must have noticed and metals sink. 7. We can see is called sorting.
F. 1. The method of grouping are stocked together. 2. Placing as sorting of different types. 3. If almost all a clear glass. If light can pass through dust-laden air. 4. Some materials are soluble are soluble in water. 5. You may have noticed bronze have lustre. 6. When two liquids easily as immiscible liquids. 7. Materials in a solid or liquid made up of metal.

HOTS

1. Sponge is labelled as a soft material because it can be compressed easily. It can change its shape when pressed. 2. If you weigh equal volumes of ice-cube and water, you will find that ice-cube weigh less than water. We can say that ice-cube is less dense than water. So, ice-cube floats on the surface of water. 3. Switches are made of plastic and not metals because plastics are bad conductor of electricity. Plastic does not allow electricity to pass through it.

5. Separation of Substances

- A. 1. c 2. a 3. a 4. a 5. c 6. a 7. a 8. c
B. 1. sediments 2. filtration 3. distilled 4. apparatus 5. bullocks 6. immiscible 7. evaporation 8. temperature
C. 1. T 2. F 3. T 4. T 5. F 6. F 7. F
D. 1. d 2. f 3. b 4. e 5. c 6. a
E. 1. A mixture is a physical properties. 2. A mixture in which a homogeneous mixture. 3. A mixture whose a heterogeneous mixture. 4. The process of separation called filtration. For example. After preparing using a strainer. 5. It is a method flour pass through. 6. Loading is a method in which sedimentation speed. 7. Sea water contains by further purification. 8. Water is a universal solvent and are then excreted.
F. 1. Many naturally occurring following reasons. For example. We potable water. Sometimes, we need to (crude oil). While producing a of the substance. 2. It is a method stones from sand. 3. The process of settling water to the cities. 4. Distillation is done left in the flask. 5. Fold the circular pieces separated by filtration. 6. A solution when reached saturated solution. If we keep adding has become saturated. 7. If you vigorously mix collected in another vessel. 8. (a) This method of method of separation. (b) When the wheat large quantities of grains. (c) We know that water called condensation. (d) Distillation is a and in the car batteries.

HOTS

1. Small and fine sieves are used in the kitchen to separate sugar that has been mixed with wheat flour. The sugar remains on the sieve and flour pass through. 2. The sugar you added to the water dissolved in the water. When a

substance dissolves in a liquid, it breaks up into its individual molecules. These molecules spread out in between the molecules of the liquid. That is why the water tastes sweet. 3. Both the liquids should be kept in a pan and left for few hours. When all the water is evaporated, in one pan in which salt solution is kept, solid salt will be left. Thus, we can determine which liquid contains salt water.

6. Changes Around Us

- A.** 1. a 2. b 3. c 4. a 5. a 6. d 7. c
B. 1. irreversible 2. chemical 3. lemon juice 4. expansion 5. heated, contracted 6. thermometer
C. 1. T 2. F 3. T 4. T 5. F 6. T 7. F
D. 1. f 2. e 3. d 4. g 5. c 6. h 7. a 8. b
E. 1. The effects of changes by some cause. 2. Changes that can be easily reversible changes. Melting of ice-cream reversible changes. 3. Changes that cannot irreversible changes. For example : Burning fuel is an irreversible change. 4. You might have making cottage cheese. 5. Other change that spoilage of food. 6. In a physical changes, no new substance is formed while new substance is formed in a chemical change. 7. Some other examples of decay of food.

F. 1. A change in which no new called a physical change. Breaking of a cause of the change. 2. A change in which new called a chemical change. Burning of a candle vapour (new substances). 3. You have already solids on cooling. 4. Corrosion is another exposure to moisture. 5. You may have seen rails in summers 6. The bursting of a cycle cooled, they contract. 7. A clinical thermometer is can be seen falling.

HOTS

1. Idli batter rises when kept overnight without refrigeration because the molecules of idli batter have undergone a change to form molecules of new substances. Such change is called a chemical change. 2. Germination of seeds is a chemical change. In this change, the molecules of the original substances undergo change to form molecules of new substances.

7. Getting to Know Plants

- A.** 1. b 2. a 3. c 4. c 5. d 6. a 7. d 8. a 9. a 10. b
B. 1. shoot system 2. aerial roots 3. internode 4. axillary buds 5. veins 6. ovules 7. tendrils
C. 1. F 2. T 3. T 4. F 5. F 6. T 7. T 8. F
D. 1. c 2. g 3. e 4. f 5. d 6. b 7. a

E. 1. The roots spread prevent soil erosion. 2. In addition, there examples of climbers. 3. The stem of some by the leaves. 4. If you look carefully provide support. 5. Leaves of some weak climbers. 6. Sometimes new roots grow help the plant climb. 7. The transfer of reaches other flowers. 8. The arrangement of veins leaf venation.

F. 1. Tap root is the main as secondary roots. Fibrous roots which grow wheat and rice. 2. The stem holds the plant thus provide support. 3. The stomata also plant form the soil. 4. Leaves perform various known as photosynthesis. 5. After pollination, the ovules of a flower. 6. A typical flower has structures called the ovules.

HOTS

1. Yes, mango tree is a tall plant with a thick, hard and woody stem. It grows generally more than 3 metre. So, a mango plant first becomes a herb, then a shrub as it grows and finally becomes a tree. 2. Yes, the creeping characteristic of a pumpkin is natural because these are plants with weak stems that cannot stand upright. It may spread or trail on the ground as in the case of pumpkin. 3. Most leaves have a flat and broad surface because they have a leaf blade or lamina that helps to absorb sunlight and carbon dioxide for photosynthesis. A stalk or petiole connects the lamina to the leaf base. 4. Some flowers are brightly coloured to attract birds and insects for pollination, while some are not bright coloured, these flowers attract insects will fragrance. The bright colours and sweet smells are used to attract insect. While insects are rummaging around on the flower they pollinate it.

8. Body Movements

- A.** 1. b 2. a 3. d 4. d 5. c 6. a 7. a 8. b 9. a 10. b
B. 1. bones 2. femur 3. slimy 4. bristles 5. vertebrae 6. single cell 7. tibia, fibula
C. 1. F 2. T 3. T 4. F 5. F 6. T 7. T 8. F
D. 1. g 2. f 3. e 4. c 5. d 6. b 7. a
E. 1. A tissue, as you form an organ. 2. Groups of different an organ system. 3. Bones are joined called ligaments. 4. At the place against each other. 5. The spine is also twist our back. 6. The last two called floating ribs. 7. X-rays are special rays a black background. 8. The earthworm has attached to the

muscles. The bristles help to get a good grip on the ground.

F. 1. The skeletal system protect delicate internal organs. 2. The ribs are thin, stomach and the kidneys. 3. Joints are of four main and forth or sideways. 4. Body movements are the bend and straighten the legs. 5. Snails have a soft body, which they can pull crawl on a variety of surfaces. 6. Fishes have fins and move up and down in water. 7. Birds are the most common flying flap their wings and fly.

HOTS

1. Yes, if an animal does not have skeleton consisting of bones, it can move. For example, many invertebrates, like earthworms, insects and snails, also move with the help of muscles. 2. Snails move using a muscular organ called the foot. The foot produces a slimy substance called mucus. Actually, the snail crawls on the layer of mucus. The mucus reduces the friction between the foot and ground by offering a smoother surface to crawl on. So the snail kept on a glass tile was able to move. 3. Yes, a fish uses its fins like oars to push the water and move forward. During swimming, muscles make the front part of the body curve to one side and the tail part swings towards the opposite side. Then quickly, the body and tail curve to other side. This pushes the body forward. This is helped by the fins.

9. The Living Organisms and their Surroundings

A. 1. a 2. b 3. c 4. c 5. b 6. a 7. d
B. 1. desert 2. tropical 3. Tundra 4. rainforest 5. submerged 6. migrate 7. climate
C. 1. T 2. T 3. F 4. F 5. T 6. F 7. T
D. 1. d 2. c 3. f 4. b 5. c 6. a
E. 1. The word 'habitat' means place for them. 2. It refers to salt found in marine habitats. 3. Plants living in water also known as hydrophytes. 4. The habitat provides survive, breed and flourish. 5. Abiotic components are the biotic components. 6. Terrestrial habitat consists of availability of water. The aquatic habitats comprises home for aquatic organisms. 7. As maximum loss of water carried out by the stems.
F. 1. Some of the adaptations found and low high intensities. 2. The presence of specific is called adaptation. For example, a fish a camel in the desert. 3. Depending upon the living conditions

..... goats, yaks, sheep and pines. 4. Some of the adaptations found enable them to float. 5. Camels are adapted to live in hot dry for walking on soft sand. 6. A large number of trees such as thus preventing rotting of leaves. 7. Many types of animals are found in grasslands. without raising an alarm. 8. It refers to the regions oysters, seaweeds and mangroves.

HOTS

1. Camels are adapted to live in hot dry desert. They can drink a huge quantity of water at a time and can stay without water for a long time. Their body loses very little water in the form of urine. Besides, its dung is dry and it does not sweat. It thus loses very little water from its body. 2. Water animals adapted to live in water. To move easily through water animals have a streamlined shape- round in front and narrow at the back. The advantage of this shape is that it reduces water resistance. 3. Eyes of a tiger are placed in front of the head- this helps them to correctly judge the location of the prey. The eyes of zebra are placed on the sides of the head because they can see all around for danger.

10. Motion and Measurement of Distances

A. 1. b 2. b 3. c 4. a 5. d 6. b
B. 1. measurement 2. linear 3. periodic 4. oscillatory motion 5. estimation 6. millimetre
C. 1. T 2. T 3. F 4. F 5. T 6. T
D. 1. d 2. e 3. f 4. c 5. a 6. b
E. 1. There was a need called standard units. 2. When an object changes its position it is said to be at rest. 3. The earth rotates (rotational motion) path (translational motion). 4. The General Conference on Weights in 1960. 5. When an object moves to and fro as oscillatory motion. 6. The type of motion in which an gases shows random motion. 7. Length: metre (m), Mass: kilogram (kg), Luminous intensity: candela (cd).
F. 1. In ancient times, people have to travel to measure time. 2. In taking measurement of a length, error is called parallax error. 3. A thread or a divider can the distances between the arms. 4. When a body moves in a around a fixed point. 5. If the same motion motion of planets around the sun. 6. Some of the bodies in motion rotational motion. 7. Depending on the size

..... way of measuring lengths and distances.

HOTS

1. The skill of estimation is very important in daily life. It develops with practice and experience. For example, if the estimation skills of a person are not well-developed, he or she may add 10 g salt instead of the required 5 g to the vegetable being cooked and spoil the taste. A cook who can make correct estimations in the kitchen will cook better dishes than the one whose estimation skills are not well developed. So, estimation is more convenient in these cases rather than accurate measurement. 2. A roller coaster is an example of rectilinear motion and motion of giant wheel exhibits the example of circular motion. During circular motion, the distance of the various points of the body or the object remains the same from the central point or axis of rotation. This type of motion occurs around a fixed point. On the other hand, when all parts of an object move the same distance in a give time, the object is said to have linear motion. 3. When we turn a screw, it undergoes two kinds of motion at the same time. These types of motion are rotational motion and translational motion. The screw rotates (rotational motion) about its axis and at the same time it revolves around the central point in a circular path (translational motion).

11. Light, Shadows and Reflections

A. 1. a 2. c 3. b 4. a 5. b 6. c 7. c
B. 1. sensation 2. luminous 3. translucent 4. ideal mirror 5. parallel beam 6. shadow 7. plane mirror
C. 1. F 2. T 3. T 4. F 5. T 6. F 7. T
D. 1. b 2. f 3. g 4. e 5. d 6. c 7. a
E. 1. You will notice that the path of light would be invisible. 2. The objects that do not non-luminous objects. Such as a book, table, cricket ball and walls are the examples of non-luminous objects. 3. An optical medium translucent or opaque. 4. When light falls on we can see that object. 5. When an opaque object shadow of the object. 6. The property of light rectilinear propagation of light. 7. Objects which allow called translucent objects. Examples of translucent oil and smoked glass. 8. A plane mirror is used as a solar cookers. 9. When light falls on a surface, in front of the mirror. 10. When the earth comes between a full moon day on the earth. When the moon comes a new moon day on the earth.

F. 1. An object which emits light called artificial sources of light. 2. Optical media are of three let any light to pass through it. 3. A shadow has the following characteristics: formed a screen is necessary. 4. When you switch on a torch in the travels in a straight line path. 5. Light travels in the form of rays. of images in a pin-hole camera. 6. The characteristics of the image formed appears left and vice versa. 7. When the moon comes between the sun experiences a partial solar eclipse. 8. It is important to note that images all the details of the object in the image.

HOTS

1. Yes, you have also noticed that the players have many shadows in a day and night cricket match. It happens simply because there are many sources of light through which the light falls on the object from different angles. Every source of light produces its own shadow hence, we get more shadows at the same time. 2. Colour of the shadow is not formed when red light falls on an object. No matter what the colour of the object, the colour of the shadow cast by it is always black (some portion of the shadow may be grey). 3. During a total solar eclipse a bright ring, called the diamond ring appears in the sky for a very short period. It is a spectacular view. But sometimes, the earth comes exactly in between the sun and the moon and the shadow of the earth falls on the moon. This happens on certain full moon nights. During the lunar eclipse, the moon does not appear bright but has a reddish colour. So, it is not possible to see a diamond ring during a lunar eclipse. 4. It is impossible to see ourselves in a mirror in a completely dark room. For example, the non-luminous object becomes visible only when light from a luminous object falls on them and travels from there to reach our eyes. In the same way, image becomes visible when light falls on the body and travels from there to reach our eyes.

12. Electricity and Circuits

A. 1. b 2. a 3. c 4. a 5. d 6. a
B. 1. transmission 2. filament 3. electric cell 4. terminals 5. incomplete 6. electric current 7. graphite
C. 1. F 2. F 3. T 4. T 5. F 6. T 7. F
D. 1. d 2. e 3. f 4. b 5. c 6. a
E. 1. When we connect the two ends electric current is called electric circuit. 2. The electric circuit in which known as a

closed circuit. 3. The electric circuit in is broken is called an open circuit. 4. A dry cell has two ends metal plate and is negative (-). 5. From the positive terminal to the negative terminal. 6. Without an accurate switch according to our convenience. 7. If we touch a bare wire layer of an insulating material.

F. 1. We use a variety of things in our on electricity are rather wide. 2. The principle on which an them and torch will not glow. 3. Materials that allow an electric current which are insulators. 4. An electric cell is used electricity or electric current. There are some chemicals inside replaced by new cells. Secondary cells are the cells are also called rechargeable cells. They are mainly used in and car batteries. 5. Inside the bulb, there is light and heat energy. 6. Electricity can be dangerous to put out electrical fires.

HOTS

1. There is a shortage of any other power source in space except solar power. Satellites need power, and it would be difficult to get power to them any other way. Batteries would eventually run out, so a way of producing power needs to be included with the satellites. 2. The insulation on wires protects us from electric shocks, which we would get if we touch a conductor connected to the mains. The tools used by electricians, such as line testers, screwdriver and pliers have insulated handles to protect them from electric shocks. In the same way, we should wear rubber slippers or shoes when handling electric switches or appliances. These insulators protect us from electric shocks.

13. Fun with Magnets

A. 1. a 2. c 3. d 4. a 5. a 6. b 7. d
B. 1. directions 2. repels 3. magnetism 4. magnetic 5. weak 6. magnet
C. 1. F 2. T 3. T 4. F 5. T 6. F
D. 1. e 2. f 3. d 4. a 5. c 6. b
E. 1. Any substance called a magnet. Magnets are found in Northern Greece called Magnesia. 2. Magnets are used to produce electricity. 3. In a bar or is the south pole. 4. Magnetite is a natural shapes and strength. 5. Besides iron, there are two other magnetic substances. 6. Wood and plastic are by a magnet.
F. 1. The most popular legend related place Magnesia or Magnes himself. 2. The

instrument called a magnetic compass. A freely suspended magnet the earth by travellers. 3. To keep them safe, bar magnets called magnetic keepers. 4. The important properties of magnets such as iron. 5. Credit cards, ATM cards and magnet to produce electricity. 6. When like poles of the two magnets the magnets are facing each other.

HOTS

1. Five north poles will be present in the broken pieces. No matter how you have two poles. If a bar magnet is always exist in pairs. 2. Iron, nickel, cobalt and their alloys of these materials are the examples of magnetic materials. In other words, a material which has the property of attracting iron, objects made of iron and iron like substances are known as a magnetic materials. On the other hand, the materials not attracted by a magnet are called non-magnetic materials such as wood, plastic, paper, etc. 3. Electronic devices such as computer and television are very sensitive to powerful magnets. Care should be taken malfunction or get damaged.

14. Water

A. 1. a 2. c 3. c 4. b 5. d 6. a
B. 1. aquifers 2. frozen 3. water vapour 4. accumulation 5. population 6. leakage
C. 1. T 2. F 3. T 4. T 5. F 6. T
D. 1. c 2. d 3. e 4. a 5. b
E. 1. About 71 per cent of the known as the blue planet. 2. Water occurs in all different temperatures. 3. The various sources of water on the earth are as follows: rainwater, groundwater, surface water, ocean water and frozen water. 4. Most of the water of streams called natural springs. 5. When water vapour is cooled, known as condensation. 6. Water pollution affects drinking water, the clean water available to us.
F. 1. The state of water can be is known as condensation. 2. The water in sea, river, is called precipitation. 3. Utilising a resource carefully become less useful. 4. One way of 'catch water where it falls'. 5. The water level in ponds, is also badly affected. 6. Excessive rain in a region leads caused due to cyclones and tsunamis. 7. It is a method of collecting rainwater and thus improve the groundwater level. 8. In urban areas, the rainwater be removed before us.

HOTS

1. Sea water contains large amount of dissolved salts. 2. If the air is cold, as on winter nights, the water vapour condenses at a very low height and form fog. A fog may extend from the ground up to a height of about three-fourths of a kilometre. In a day, if it is warm, the vapour rises with hot air. With increasing height, it becomes colder. Nearly a kilometre above the surface of the ground, it is cold enough for water vapour to condense into droplets around dust particles. So, dew form only cold on a winter morning. 3. We are not allowed digging tube wells in urban areas because the population in the urban areas is much more than the population in the rural areas and if everyone will start digging tube wells then the the groundwater level will be very less.

15. Air Around Us

- A. 1. b 2. a 3. c 4. b 5. b 6. a 7. d 8. a
B. 1. rustle 2. atmosphere 3. empty
4. combustion, electric bulbs 5. sunlight 6. dust particles 7. lungs
C. 1. T 2. T 3. F 4. T 5. F 6. T 7. F
D. 1. e 2. c 3. d 4. b 5. f 6. a
E. 1. We can feel the presence fluttering when opened. 2. Atmosphere is a layer of gases becomes thinner and thinner. 3. Nitrogen, oxygen, carbon dioxide, water vapour, dust and smoke are the components of air. 4. Various human activities spoil the quality of air. 5. Take a burning candle and space in the glass occupied by air. 6. Living organisms that live come out of the soil to breathe. 7. Air is not only required parachutes and aeroplanes. 8. Plants breathe through small openings photosynthesis and respiration.
F. 1. Until the eighteenth century, water vapour are also present. 2. Birds have a very easily pass through them. 3. Nitrogen: Nitrogen is a major component of long chimneys in factories. 4. In the process of photosynthesis, plants make their own food plants produce oxygen. 5. Air is not only play several musical instruments. 6. The addition of substances breathing disorders. 7. The balance of oxygen and interdependence of plants and animals.

HOTS

1. We can observe the presence of water vapour in air by observing wet clothes drying

on a clothesline. The water in clothes forms water vapour and disappears into air. 2. If we keep a fish in a closed container without any aquatic plants, it will die. In water, plants release oxygen. Animals like fishes living in water breathe through their gills, which take in the dissolved oxygen from the water. 3. Windmill taps the energy of the wind and makes it available for productive purposes. The wind makes the windmill rotate. The windmills are used for electricity generation, to run flour mills and to draw water from tube wells.

16. Garbage in, Garbage out

- A. 1. a 2. d 3. c 4. a 5. a 6. c 7. a
B. 1. wastes 2. naturally 3. management
4. recycled 5. plastic bags 6. electronic
7. biodegradable
C. 1. T 2. T 3. T 4. F 5. T 6. F 7. T
D. 1. e 2. d 3. c 4. f 5. b 6. a
E. 1. Unwanted things called wastes. 2. Waste that can be called biodegradable waste. 3. Waste that does not called non-biodegradable waste. 4. The finished product obtained is excellent for growing plants. 5. It is the natural process of decomposition Micro-organisms like bacteria and fungi. 6. Landfill is another method park or playground. 7. Paper is a biodegradable de-inking and finally refining.
F. 1. Waste that can be broken down dangerous for all living creatures. 2. The waste is collected by the to make beneficial products. 3. Management of wastes especially non-biodegradable paper from wood, utensils from metals, etc. 4. Some tips for recycling paper are: from used or old newspapers. 5. Careless disposal of plastic bags bad effect on people who breathe it. 6. The local corporations have adapted different it appears as loose soil like materials. 7. Some of the ways to reduce, reuse and recycle plastic are required to the *kabadiwala*.

HOTS

1. It is said that there are four 'R's to be followed for waste management. This indicates refusing, reducing, reusing and recycling the use of non-biodegradable items such as plastic bags. 2. Recycling of non-biodegradable waste involves the collection of used and discarded materials and processing them to make new products. The *kabadiwala* takes these items to factories where cans are

melted to make new cans and broken bottles are also melted to make new glass products. So, we call a "kabadiwala" a friend of the environment.

SCIENCE-7

1. Nutrition in Plants

- A. 1. b 2. a 3. b 4. c 5. a 6. c 7. c
B. 1. autotrophic 2. photosynthesis 3. stomata
4. Cuscuta 5. Rafflesia 6. Mistletoe 7. chlorophyll
C. 1. F 2. T 3. T 4. F 5. T 6. T
D. 1. c 2. d 3. b 4. f 5. a 6. e
E. 1. Carbohydrates, proteins, fats, vitamins and minerals. 2. Nutrition is the process of taking by the body. 3. for the proper growth of our body. 4. Organisms that can synthesise are called autotrophs. 5. The mode of nutrition saprotrophic nutrition. 6. Carbon dioxide, water, chlorophyll and sunlight 7. Chlorophyll has ability to trap of photosynthesis. 8. Plants absorb the mineral nutrients, in a soluble form. 9. A certain type of bacteria called rhizobium help to provide nitrogen to the plants. 10. There are certain plants which known as symbiotic relationships.
F. 1. Organisms that can synthesise bacteria belong to this group. 2. Organisms that can obtain their energy called heterotrophic nutrition. 3. Photosynthesis is the process most organisms depend. 4. Plants absorb the mineral nutrients, to enrich the soil. 5. Plants which use saprotrophic mode of nutrients from it. 6. There is a bacterium called Rhizobium, which lives in addition of nitrogenous fertilisers. 7. A good example prepares by photosynthesis. 8. In a pitcher plant, inside the pitcher. 9. Activity-2 10. The mode by which parasitic fulfil its needs.

HOTS

1. No, we are not autotrophs because we make our food from organic materials (provided by plants) and plants make their food from inorganic materials (CO_2 + water, in the presence of sunlight and chlorophyll). Hence, we are heterotrophs. 2. No, because artificial source of light has not all the things to prepare food. They make food only in sunlight. 3. No, the pitcher plants' design for catching and digesting insects is a passive system. The plant doesn't actually do anything, it's a function of its structural makeup. The bugs fall into the

pitcher and can't climb out again and so are digested by the enzymes the plant produces.

2. Nutrition in Animals

- A. 1. b 2. d 3. a 4. b 5. c 6. a 7. c
B. 1. faecal 2. pseudopodia 3. salivary glands
4. permanent 5. oesophagus 6. alimentary canal
C. 1. F 2. T 3. T 4. F 5. T 6. T
D. 1. c 2. e 3. f 4. g 5. b 6. a 7. d
E. 1. The process of breaking is called digestion. 2. Humans get two sets of teeth contains 32 teeth, 16 in each jaw. 3. Liver secretes bile juice and pancreas into amino acids. 4. The tongue helps in or the food pipe. 5. The system consists of canal or digestive tract. 6. Taking large pieces of food into the body is called ingestion. On the other hand, removal of waste materials from the body is called egestion. 7. Their stomach is divided into four chambers-the rumen, reticulum, omasum and abomasum.
F. 1. There are five steps is called egestion. 2. In the first step, the food is chewed body as waste. 3. The absorbed substances are transported by the the large intestine. 4. When we eat food, small bits of it stuck between called tooth decay. 5. For tearing, cutting and chewing the food, there are four and 6 molars in each jaw. 6. Tooth decay can be avoided by the following ways: (i). Brush your teeth or bleeding gums. 7. From the mouth, the food is pushed down movement of the oesophagus. 8. An amoeba is a microscopic through the cell membrane.

HOTS

1. Most of us take our teeth for granted until something goes wrong. Our teeth help us chew and digest food, play an important role in speech, and impact our health overall. And by brushing up on your dental health knowledge, you will be taking the first step toward giving your teeth the attention they deserve. 2. Acid is produced naturally in your stomach to help you digest food and to kill bacteria. This acid is irritant so your body produces a natural mucous barrier which protects the lining of your stomach. In some people, this barrier breaks down allowing the acid to damage the stomach, causing inflammation, ulcers and other conditions. 3. Athlete A is more sensible because glucose is needed in the body to make energy. Enzymes in the digestive system break up the food into amino acids act and

carbohydrates and fats contain the most glucose. These are broken down so they are small enough to seep through to walls of the intestine and there it gets inside a cell. It reacts with oxygen inside a cell to make energy.

3. Fibre to Fabric

- A.** 1. a 2. b 3. c 4. a 5. a 6. c 7. b
B. 1. natural 2. herbivores 3. mohair 4. alpaca and llama 5. shearing 6. sliver 7. yarn
C. 1. T 2. T 3. T 4. F 5. F 6. T 7. T
D. 1. c 2. f 3. a 4. b 5. d 6. c
E. 1. Cashmere goat, Angora rabbit, Yak, Llama and Camel 2. Pashmina wool is the finest wool obtained from the cashmere goats. 3. Common examples are silk and wool. 4. Some breeds of sheep for different purposes. 5. Shearing does not harm the sheep up of dead cells. 6. The rearing called sericulture.
F. 1. Wool is obtained from and fineness of the fibres. 2. The wool fibres making the yarn. 3. The life cycle of a silk moth in its life cycle. 4. The first stage of making silk is woven into silk fabric. 5. Wool has various properties. It has a natural flower dyes. 6. The properties of silk include a natural strongest natural fibre. 7. Wool is an animal fibre. In fact, keep us warm. On the other hand, silk is an animal Silk is made of proteins.

HOTS

1. Sericulture is not considered an eco-friendly practice because during sericulture silkworm is boiled to get silk fibres. Vapours emitted from the boiling cocoon release toxic fumes that pollute the atmosphere contribute to respiratory problem. 2. For knowing, it is the pure silk saree we can see its softness. After seeing the Hallmark ticket that it is pure. Pure silk is all silk, this terminology is used to describe thread, yarn or fabric.

4. Heat

- A.** 1. b 2. c 3. a 4. c 5. c 6. a 7. c
B. 1. Celsius 2. Kelvin 3. freezing point 4. laboratory 5. digital and clinical 6. higher and lower 7. conductors
C. 1. F 2. T 3. T 4. T 5. F 6. F 7. T
D. 1. d 2. f 3. h 4. a 5. g 6. b 7. e 8. c
E. 1. Heat is used to do various considered to be a form of energy. 2. The degree of hotness and Kelvin scale. 3. Celsius is the modern system of those two points. On the other hand, Fahrenheit is the classic by F degree.

4. A laboratory thermometer is of a laboratory thermometer. 5. Usually, the freezing point of water is referred to as the lower fixed point. The boiling point of water is referred to as the upper fixed point. 6. A clinical thermometer has a kink contact with the body. 7. Materials that do not conduct heat readily are called plastic, etc. 8. White and light and keep us cool.
F. 1. The thermometer used to measure contact with the body. 2. Activity-2 3. In coastal areas, breeze a land breeze. 4. We know that we get heat heat and gets heated. 5. Transfer of heat from one particle to the adjacent place through conduction. 6. All hot objects-solid liquid and gas emit temperature moderate. 7. Ventilators and exhaust fans are the windows. 8. A thermos flask is a special type of vessel reduces conduction.

HOTS

1. We all know that the matter expands on heating and contracts on cooling. Apply same principle here. In summers, temperatures are high, so air expands, but as the tyre is full of air and there is no room for air to expand, so the tyre bursts. 2. Gases are not used in thermometers as the inter particle distance in gases is very large and therefore on heating whole volume of the thermometer will get filled up. Solids are not used because in solids the inter particles distance is very small and therefore on heating bursting can take place. Hence, a liquid which has intermediate forces of attraction between its particles is suitable in the thermometer.

5. Acids, Bases and Salts

- A.** 1. a 2. b 3. c 4. d 5. a 6. b
B. 1. limestone 2. hydrochloric acid 3. caustic soda 4. constipation 5. litmus 6. indicator 7. acidic
C. 1. T 2. T 3. T 4. F 5. T 6. F
D. 1. d 2. e 3. f 4. g 5. b 6. c 7. a
E. 1. The substances which are sour contain acids. There are three uses of acids: (i). Sulphuric acid is used in car and inverter batteries. (ii). Nitric acid is used in the manufacturing of explosives such as TNT (trinitrotoluene) and nitroglycerine. (iii). Hydrochloric acid is a part of the gastric acid in humans and many other animals, secreted within the stomach to help in digestion. 2. A base is a substance in skin, hair and nails. 3. Acids react with bases to produce

water and salts. 4. Turmeric, litmus and China rose petals 5. When added to a basic solution, litmus turns blue. 6. Salts are the substances a neutralisation reaction. 7. In order to cure indigestion, from acidity.

F. 1. Acids are generally compounds. One of dissolved in water. On the other hand, actually bases are compound are called alkalis. 2. Acids are classified as into concentrated acids. 3. Some of the characteristic properties of acids produce water and salts. Some of the characteristic properties of bases touched by hands. 4. A special type of substance is used to test are the synthetic indicators. 5. A universal indicator is a mixture of called pH paper. 6. Neutralisation of soil is soil becomes neutral. 7. The most commonly used natural indicator..... blue litmus paper. 8. Turmeric is another natural only a base.

HOTS

1. When you add the lemon (an acid) to the alkaline limestone, it forms carbon dioxide. Marble is a rock formed under great heat and pressure from limestone. It reacts to acid just as limestone does. 2. Cut the strips of red litmus paper and dip one red litmus paper strip in each test tube. Observe the colour change of the each red litmus paper strip after dipping in the solution in the two test tubes. The solution which changes the colour of red litmus paper strip to blue is a basic solution. On the other hand, the solution which does not change the colour of red litmus paper strip is an acidic solution.

6. Physical and Chemical Changes

A. 1. b 2. b 3. d 4. c 5. b 6. a
B. 1. chemical change 2. curdling of milk 3. products 4. crackers 5. rusted iron 6. vinegar
C. 1. F 2. T 3. T 4. F 5. T 6. T
D. 1. c 2. g 3. f 4. a 5. b 6. c 7. d
E. 1. Physical changes and chemical changes
2. Melting of butter and tearing of paper
3. Cooking of food and ripening of fruits 4. It is a chemical reaction iron to rust. 5. Physical changes involve shape, colour and state. 6. Chemical changes involve simple physical methods.
F. 1. Table given on Page-67. 2. If you observe the cut surfaces in the brinjal. 3. We know that salt to form the crystal. 4. Burning of wood is a chemical change. It gives off heat and gases

and leaving a residue of ashes. In this process, undergoes a chemical reaction. 5. Rusting of iron can be prevented by to prevent rusting. 6. Activity-3

HOTS

1. Burning of a candle involves both physical and chemical changes. To burn the wick involves a chemical change because the wick is burned to something irreversible. To burn the wax involves a physical change because the vapour wax can be condensed to form wax again. 2. To prevent rusting.

7. Weather, Climate and Adaptations of Animals to Climate

A. 1. a 2. b 3. b 4. c 5. b 6. a 7. d
B. 1. atmospheric 2. millimetres 3. torrid and frigid 4. penguin 5. Siberian cranes 6. canopy 7. Asian elephants
C. 1. T 2. T 3. F 4. T 5. T 6. T 7. T
D. 1. c 2. f 3. b 4. g 5. h 6. a 7. e 8. d
E. 1. Weather experts use as weather forecasting. 2. Relative humidity is the of water vapour. 3. They are latitude, distance from the sea, ocean currents, direction of wind and humidity. Human activities also affect the climate. 4. The maximum and minimum temperatures 5. Bharatpur in Rajasthan and Sultanpur in Haryana and some wetlands of north east and some other parts of India. 6. The red-eyed tree frog from being hunted. 7. Toucan is one of support its weight. 8. The trunk is a modification through forests.
F. 1. Weather is the daily several times a day. On the other hand, the climate refers of one year. 2. Polar bears are perfectly adaptive to live in the snow cold environment of the Arctic polar region (North Pole of the Earth). They have the following adaptations: (i). Polar bears have two thick a mile away (1.6 km). 3. The penguin is mostly found in like the walrus or sea lion. 4. Birds migrate to warmer the purpose of breeding. Some adaptation shown by Siberian cranes avoid predators. 5. Polar regions are covered freezing point. 6. Tropical rainforests grow humus, rich in nutrients. 7. (i). A major factor that determines the temperature zones. (ii). Another factor responsible for above sea level. (iii). The climate of a place depends becomes very hot. (iv). The climate of a place during the winter).

HOTS

1. Without its 23.5 degree tilt, the Earth would no longer experience the change in seasons the way it currently does. The north and south poles would receive little sunlight and would experience consistent winter-like weather. The lower altitudes would enjoy summer-like weather year round at the same time the middle latitudes would be somewhere in between the two extremes. 2. If a polar bear accidentally fell in a pool of red paint, its skin colour will often be painted red. It can be easily visible in the snowy white background. It does not protect it from its predators. And it also does not help in catching its prey. 3. If the tusks of an elephant are removed, they will live but with many problems. The tusks of elephants are their second incisors. They are used to dig for water and roots and to tear the bark from trees, which they eat.

8. Winds, Storms and Cyclones

- A. 1. c 2. b 3. c 4. d 5. a 6. c 7. d
B. 1. thunder and lightning 2. Arabian Sea 3. anemometer 4. thunderstorm 5. tornado 6. high, low 7. summers
C. 1. F 2. T 3. F 4. T 5. T 6. T 7. F
D. 1. g 2. d 3. e 4. f 5. c 6. a 7. b
E. 1. Excess rain, thunder, lightning, wind, storms, cyclones, etc. 2. The cool air in the of air is called the wind. On the other hand, a very strong wind is called a storm. 3. When we are flying a kite, fly higher. 4. Activity-1 5. Air pressure decreases than the top. 6. Cyclones are large anti-clockwise direction. 7. The fast swirling winds called twisters or whirlwinds. 8. An air current is a created in that area.
F. 1. Wind movements are caused between different regions. 2. The pressure exerted by air air pressure. Activity-2. 3. During summer days, the landmass of the summer monsoon winds. On the other hand, in winter season, the winter monsoon winds. 4. A thunderstorm is a type of weather characterised by rain, lightning and thunder. 5. When water from the sea evaporates, shortage of moisture. 6. The cup anemometer is the most widely speed of the wind. 7. The precautions in a cyclone hit area are as under: (i). If you and friends. 8. Wind has two characteristics- direction and speed-which can wind direction. Speed: The speed of in aerial navigation.

HOTS

1. When wind flows over roof, it creates a vacuum over roof for some time, thus pressure above the roof reduces and pressure below the roof remains constant. So by the pressure difference between inside and outside, roofs are blown. 2. If the earth did not rotate, winds would go from north to south and south to north in a straight line. 3. Cyclonic storm weaken over land because their source of energy is evaporation from warm ocean. On reaching land, the storm lacks the moisture and heat sources that the ocean provided.

9. Soil

- A. 1. c 2. d 3. b 4. b 5. a 6. c
B. 1. fungi and bacteria 2. weathering 3. earthworms 4. A-horizon 5. percolation rate 6. drainage and organic
C. 1. T 2. T 3. T 4. F 5. F 6. T
D. 1. e 2. d 3. b 4. f 5. c 6. a
E. 1. The topmost layer of underground water reservoir. 2. The process by which huge is called weathering. 3. Soil contains humus the presence of humus. 4. A-horizon, B-horizon, C-horizon and R-horizon are the different layers of the soil. 5. Loamy soil is best required by the roots of plants. 6. Sandy soil is mainly matter is added to it.
F. 1. The role of water in weathering elsewhere as soil. 2. Since soil is formed to form humus. 3. Sandy Soil: This type of soil is found in desert. Clayey Soil: It consists of very fine good for growing plants. Loamy Soil: It is best topsoil by the roots of plants. 4. The term 'soil profile' refers composition of the soil. 5. Sometimes wind and water remove is known as soil erosion. Soil conservation is using life healthy. 6. The soil is affected by the climatic conditions grow in any region.
HOTS
1. No. Weathering is the process of breaking down of rocks, minerals and other materials by action of continuously changing weather on earth which leads to the formation of soil. In other words, it is a natural process which is not performed by man. So breaking of rocks to make roads is not a natural process. 2. Yes, soil is a natural resource because it takes thousands of years for stone and decaying materials to intertwine to create the ground we walk on. 3. Topsoil has higher humus content

than subsoil. It tends to be the layer of the soil food web where above and below ground organisms such as bacteria, beetles, and earthworms live and die. The death and the resulting decay of these organisms contribute to the buildup of organic matter. Another word for humus in fact is an organic material.

10. Respiration in Organisms

- A.** 1. b 2. d 3. a 4. b 5. b 6. a 7. c
B. 1. nostrils 2. larynx 3. bronchioles, alveoli 4. breathing rate 5. respiration 6. anaerobic respiration 7. carbon dioxide
C. 1. T 2. T 3. F 4. T 5. F 6. T 7. F
D. 1. g 2. b 3. f 4. e 5. c 6. d 7. a
E. 1. Energy is released from digested food is called oxidation. 2. A process in living is called respiration. 3. Breathing involves the exchange of gases oxygen is called internal respiration. 4. Equation **given on Page-106** 5. nose, pharynx, trachea, bronchi and lungs. 6. During cellular respiration the the blood for exhalation. 7. Equation **given on Page-109**
F. 1. Breathing is a continuous called exhalation. 2. Insects such as cockroaches and the smaller tubes. 3. Breathing is a physical process. Human beings cavity called diaphragm. 4. Sometimes during any physical activity such as relief from cramps. 5. Like other living organisms, plants also respire pore to take in oxygen. 6. The air is a mixture of during respiration. 7. Normally, oxygen from comparatively very small.

HOTS

1. During the day, in the presence of sunlight, the plants use up the CO_2 and release O_2 as a by-product. But during night they are unable to use the CO_2 and this leads to increase in the proportion of CO_2 in the air. During night the trees breathe in oxygen and release carbon-dioxide. If one sleeps under the trees, the amount of increased CO_2 in the air around will certainly affect the health. So it is not good to sleep under trees during night. 2. Breathing rate increases during running because your body has a higher demand for oxygen. Oxygen is needed to burn calories and so your lungs have to work harder. Your lungs, heart, and muscles all work together to ensure you are getting enough oxygen during your exercise. 3. Like all other living creatures, fishes too need oxygen to breathe. Fishes get their supply of oxygen from water. They take water into their mouths which passes through

their gills. A fish's gills work only in water. This is why most fishes die when they are out of water for long.

11. Transportation in Animals and Plants

- A.** 1. a 2. c 3. a 4. c 5. b 6. d 7. c
B. 1. Amoeba and paramoecium 2. heart 3. haemoglobin 4. WBCs 5. kidneys 6. vascular system 7. translocation
C. 1. T 2. T 3. T 4. F 5. T 6. F 7. F
D. 1. g 2. d 3. c 4. b 5. f 6. e 7. a
E. 1. In multicellular organisms, the cell in the body. 2. Red Blood Cells (RBCs), White Blood Cells (WBCs) and platelets are three types of blood cells. 3. Right auricle, left auricle, left ventricle and left auricle 4. Urine consists of 95% water, 2.5% urea and 2.5% other waste products. 5. The inside of the heart is divided into four chambers. These chambers are separated by a wall of muscle called septum. 6. Excretion is the process removed from the body. 7. Tissues called xylem act as pipelines and takes the heat of the sun. On the other hand, leaves make food and of the plant body. 8. The left auricle is back into auricles.
F. 1. Arteries are the towards the heart. 2. Transport system in plants is called the vascular called sieve tubes. 3. The excretory system of human beings collects the liquid wastes of the body and helps it get rid of them. The excretory system out of the body. 4. There are three types of blood cells: Red Blood Cells (RBCs): Red blood prevent blood loss. 5. The heart is a fist-sized muscular organ becomes oxygenated again. 6. Activity-Page-122

HOTS

1. Our blood contains many different materials and cells, each with a different purpose. Plasma, the liquid portion of the blood, comprises more than half of the blood. Plasma is light yellow in colour, and is thicker than water, because it contains many substances, in addition to the actual blood cells. These substances include proteins, antibodies, fibrinogen, which helps blood to clot, carbohydrates, fats, salts, etc. Red blood cells (also called corpuscles) are encased in blood vessels and provide colour to the blood. Since there are actually trillions of them circulating in one's body at any one time, their great amount is what gives blood the red colour. 2. When this happens, harmful wastes

and fluids can build up in your body, your blood pressure may rise, and your body may not be able to make enough red blood cells.

3. Plants absorb more water because they know they will lose most of the water they have absorbed during transpiration. If they absorb less water they will lose all their water during transpiration leaving no water for metabolic processes. Transpiration is a necessary process because it creates transpiration pull for the upward movement of water and a mineral, so, plants does not stop it.

12. Reproduction in Plants

- A.** 1. b 2. a 3. c 4. d 5. c 6. d 7. a
- B.** 1. asexually 2. single cell 3. tissue culture 4. reproductive 5. pistil, ovary 6. nectar 7. embryo
- C.** 1. T 2. T 3. F 4. T 5. F 6. T 7. F
- D.** 1. g 2. d 3. f 4. c 5. b 6. e 7. a
- E.** 1. The process through reproduction. 2. The process of artificial propagation. 3. papaya, watermelon, cucumber and pumpkin 4. The transfer of pollen grains from the anther to the stigma of a flower is called pollination. When the male cell and form the new organisms. 5. The transfer of pollen grains bisexual or unisexual flowers. 6. Seeds like dandelion float in air. 7. A plant produces of growing healthy.
- F.** 1. Spore formation: Some plants in a short time. 2. Cutting: In this method, from the original plant. 3. Vegetative propagation is very useful to plant types of reproduction. 4. After pollination, into a seed. 5. Seeds which are scattered along with the water current. 6. In flowering plants, flowers female gametes, called ovules. 7. Tissue culture is a method of propagated by this method.

HOTS

1. No, when a pollen grain drops into the pistil of a flower, a sugary fluid mainly sucrose is secreted by the matured stigma of the flower. If the pollen is compatible to the stigma, as soon as the pollen comes in contact to the sugary fluid it will start germinating. The pollen germinates and forms a pollen tube. If the pollen is not compatible, it will never germinate. For this reason, the pollens of rose plant cannot fertilise the eggs of lily flower. 2. Yes, wind-pollinated flowers are different in structure from insect-pollinated ones. You need to understand the main differences.

Insect pollination occurs when an insect stops at a plant and the pollen gets attached on their legs or they ingest it. They then travel to a different plant where they release the pollen or the pollen on their legs is sloughed off. Wind pollination occurs when the wind sweeps up the pollen from plants and blows it to another plant. 3. The biggest difference between seeds and spores is the way they multiply. Seeds need to be planted on the ground for it to grow but as for spore; they may spread just by being blown by the wind. An example of them being alike is that they both have asexual reproductive structures.

13. Time and Motion

- A.** 1. c 2. a 3. c 4. d 5. d 6. a
- B.** 1. kilogram 2. clocks, watches 3. month 4. hourglass 5. atomic clock 6. periodic motion
- C.** 1. F 2. F 3. T 4. F 5. T 6. F
- D.** 1. f 2. c 3. g 4. e 5. b 6. d 7. a
- E.** 1. Time is important part of our life. 2. Measurement is the same kind. 3. sand clock, sundial and water clock. 4. The time taken the pendulum. 5. If the speed in uniform motion. 6. The speedometer indicates the speed of the vehicle at which it is moving at a time. 7. In a quartz time more accurately.
- F.** 1. Sand clock: Sand clock is specific time periods. 2. A simple pendulum consists equal intervals of time. 3. Do yourself. 4. In ancient times, people used the foot, as the SI system. 5. The distance covered cover the distance. 6. Taken time = 6h, uniform speed = 120 km/h, Distance = ? Solution: Speed = Distance/Time, Distance = Speed x Time, 120km/h x 6 h, 720 km. 7. Time taken= 20 s, Distance = 450 m, Speed= ? Solution: Speed = Distance/Time, 450m/ 20m, 22.5 m/s.

HOTS

1. The principle of periodic motion is used to measure time in clocks and watches. 2. Length and mass were the earliest measurement made mankind. Time measure was done just by making ideas. For example, the position of sun, moon and stars give idea of days, months and years. Later mechanical clocks based on weights and spring came into existence to measure time accurately up to minutes. Today atomic clocks measure time accurately up to nano-seconds by measuring waves emitted by Cesium clock in terms of speed of light and frequency. Over the time improvements in accuracy in measuring

length and mass came into being. 3. Yes, it has a uniform motion.

14. Electric Current and its Effects

- A. 1. a 2. c 3. d 4. a 5. b 6. a
B. 1. electric circuit 2. positive terminal, negative terminal 3. switch 4. filament 5. ammeter 6. electromagnet
C. 1. T 2. T 3. T 4. F 5. T 6. F
D. 1. b 2. g 3. d 4. f 5. a 6. c 7. e
E. 1. The proper arrangement an electric circuit. 2. An electric circuit complete. 3. There are three electric current 4. Cell battery, On-off switch, Electric appliance, Conducting wires, Ammeter and Voltmeter 5. Nowadays, another device becomes complete again. 6. The fuse is a safety the appliances. MCB.
F. 1. There are many components difference to be measured. 2. A solenoid is a a magnetic material 3. When electric current flows through a wire wound solenoid several times. 4. The electric bell is a simple device that uses continue producing sound. 5. Activity: Take a cell, switch, connecting wires and magnetic the rest position again. The magnet needle gets deflected when electric current flows through the circuit. 6. The copper wires gradually offer very little resistance offered by the wire.

HOTS

1. Copper wire is not used in filament of bulb or as a heating element of heater because its melting point is lower than tungsten and at high temperature the copper will melt. 2. A situation can occur, when the positive and negative wires in an electric circuit at home come directly into contact with each other. This is called short circuit and results in a very heavy current to flow through the wires. The wires can get overheated and catch a fire. 3. A compass needle is, in fact, a small bar magnet. If this is brought near another bar magnet, the like poles repel and the needle gets deflected. If it deflects when brought near to cable, it will get deflects if current is flowing in the cable or vice-versa.

15. Light

- A. 1. a 2. b 3. c 4. b 5. d 6. b
B. 1. incident 2. reflected 3. incidence 4. plane mirrors 5. Convex 6. spectrum
C. 1. T 2. T 3. F 4. T 5. F 6. T
D. 1. b 2. f 3. d 4. e 5. c 6. g 7. a
E. 1. Light travels in rectilinear propagation. 2. A mirror bounces back

..... reflection of light. 3. Uses of concave mirrors: Concave mirrors are used as reflectors of the face. 4. Uses of convex mirrors: Convex mirrors are used as rear over a larger area. 5. There are two laws same plane. 6. A real image is formed called a virtual image.

F. 1. When light falls a straight line. Activity. 2. An image formed on a plane mirror in front of it. 3. Sir Isaac Newton, a great scientist who lived in the seventeenth century, yellow, orange and red. 4. Do yourself. 5. In a concave mirror, the reflection lies behind it. 6. Convex lens is thicker in the center than at emerging rays backward.

HOTS

1. No, paper cannot be considered as polished and shiny surface. It can act as a screen but not as a mirror. 2. Do yourself.

16. Water: A Precious Resource

- A. 1. d 2. b 3. c 4. b 5. a 6. b 7. a
B. 1. human body 2. agriculture 3. temperatures 4. surface water 5. hand pumps, tube wells 6. water scarcity 7. photosynthesis
C. 1. F 2. T 3. T 4. F 5. T 6. T 7. T
D. 1. b 2. d 3. e 4. c 5. a
E. 1. Our earth is called from a distance. 2. solid, liquid and gas. 3. The upper limit of groundwater is called the water table. 4. Rainwater is the purest form of fresh and condensation. 5. The continuous movement of water from the earth's water cycle in nature. 6. rainwater, surface water and underground water. 7. Rainwater harvesting is an storing it in tanks.
F. 1. Water scarcity occurs on the ground surface. 2. The water in water bodies nature goes on. 3. The state of water can be called condensation. 4. Water is very important for plant death of the plant. 5. Water is a precious household chores. 6. Population growth, increasing pollution, increasing industries, agricultural activities, global warming and deforestation 7. Rainwater is the primary and agricultural use. 8. Using less water household purposes.

HOTS

1. Yes, although water flows from our faucets throughout the day, we often take the amount of fresh water available on earth for granted. As the world's population increases, water consumption increases. Preventing water

pollution and conserving water are important to assure a continuing abundance of water that is safe to use for ourselves and future generations. 2. Actually, the reason behind this is that it is located on hills. As the rain falls from the clouds it soon flows down the slope of the hill. And therefore, the people are not able to use this water for their needs. Hence, in spite of being the wettest place, it faces a shortage of water. 3. Because we are wasting so much of water in so many ways they are: we are leaving running taps just like that without closing it.

17. Forests: Our Lifeline

- A.** 1. b 2. a 3. b 4. d 5. b 6. c
B. 1. crowns 2. canopy 3. forest floor 4. ecosystem 5. soil 6. carbon dioxide
C. 1. T 2. T 3. T 4. F 5. F 6. T
D. 1. b 2. e 3. a 4. f 5. d 6. c
E. 1. A forest is many plants. 2. Numerous species in nutrients. 3. The living things ecosystem in a forest. 4. timber, wood pulp, turpentine, latex, oils, spices and resins. 5. When an animal dies agents of the environment. 6. The large scale felling of trees and plants is called deforestation.
F. 1. Not only plants help process of respiration. 2. Animals depend on plants respiration of living beings. 3. Forests are important for the environment green lungs in nature. 4. Food chains are simple representations an energy flow chain. 5. In nature, there are many different food in a food web. 6. Each and every fodder and timber.

HOTS

1. Plants in the forest release oxygen during photosynthesis. This provides all animals including us with oxygen to breathe and helps to maintain the ratio of oxygen to carbon dioxide in the atmosphere. That is why forests are called green lungs. 2. Fewer deer and rabbits also means less food is available for the carnivores like tiger. This in turn will keep the carnivorous population in control. 3. Yes, one answer is that if we control the number of trees we cut, we can allow the forest to regrow at the same rate at which we cut trees down, so that we always have the same amount of forests. Cutting down of forests causes some problems. It removes habitat from animals and plants that depend on forests to survive. Cutting leads to erosion. Forests also store water and have a cooling effect on the air temperature.

18. Wastewater Story

- A.** 1. a 2. c 3. d 4. d 5. c 6. b 7. a 8. d
B. 1. water pollution 2. kitchen 3. pathogenic 4. aeration tank 5. Anaerobic
C. 1. T 2. F 3. T 4. F 5. T 6. T
D. 1. c 2. d 3. b 4. e 5. f 6. a
E. 1. Industrial waste, domestic waste and agricultural 2. Sewage is the wastewater carried by sewers or underground pipes. 3. They can block pipes when they harden. 4. It contains urine, harmful microorganisms. 5. The wastewater passes into a sedimentation tank is called clarified water. 6. Sewage treatment is the process of removing the water bodies.
F. 1. A network of sewage system. A manhole is a in sewer pipes. 2. A septic tank is simply used as a fuel. 3. If the contaminated water is disposed off in clean and safe to drink. 4. Sewage treatment consists of several treatment stages: Primary treatment: into the water bodies. 5. There are various sources of water pollution. Industrial waste: Nowadays, industries causes water pollution. 6. A large number of people visit public places and audio visual aids.

HOTS

1. Excessive use of chemical fertilisers, insecticides and pesticides in agricultural farms harms groundwater. They also get swept away by rain and drains into rivers and lakes. This nutrient rich water promotes the growth of weeds resulting in eutrophication. This is a condition leading to depletion of oxygen in water bodies. 2. Chlorine is used to kill bacteria and control algae in your pool water so that it is safe for swimming. Along with other chemicals it works to keep the walls and bottom of your pool clean.

SCIENCE- 8

1. Crop Production and Management

- A.** 1. a 2. c 3. b 4. b 5. c 6. d 7. b
B. 1. ploughing 2. manures, fertilisers 3. seeds 4. rhizobium 5. irrigation 6. trickle irrigation 7. winnowing
C. 1. T 2. F 3. T 4. T 5. F 6. T 7. T
D. 1. d 2. c 3. b 4. f 5. g 6. e 7. a
E. 1. The practice of as agriculture. 2. Kharif crops are and groundnut. On the other hand, rabi crops are called winter gram and mustard. 3. Levelling refers to or iron leveller. On the other

hand, the process of loosening or by tractors. 4. The soil can be one after another. 5. By using pesticides. Pesticides kill pests as well as their eggs and larvae but do not affect the crops. 6. Weeding can be not the crops. 7. Manure is an organic specific nutrient to the soil. 8. There are basically two methods of sowing saves time and labour. 9. Nitrification: Some of the nitrogen compounds is called nitrification. On the other hand, Denitrification: This process takes denitrifying bacteria. 10. Just like plants, animals also provide food to called animal husbandry.

F. 1. Soil is the natural medium maintain soil fertility. 2. The quality of crop produced depends for sowing. 3. Sprinkler system: It is a method of applying irrigation is water shortage. 4. The process of removing weeds from the field these chemicals. 5. Once the crop has matured, known as harvesting. Harvested food grains normally to avoid pest attack. 6. The population of our country our soil and climate. 7. Table given on Page-11. 8. There are five main processes in this cycle by denitrifying bacteria.

HOTS

1. Drip irrigation process will be recommended for a region that frequently experiences shortage of water. This minimizes wastage of water. However, it is very expensive. It is useful in areas where there is water shortage. 2. No, we usually do not find fully grown plants in a nursery because some crops such as rice is not directly sown in field instead they are first grown in nurseries and then transplanted to the fields for further growth. Therefore, we usually do not find fully grown plants in a nursery.

2. Microorganisms: Friend and Foe

A. 1. a 2. c 3. b 4. a 5. c 6. a 7. b
B. 1. avian flu, swine flu 2. wine 3. bread 4. insulin 5. Azotobacter 6. Anthrax 7. sugar
C. 1. b 2. f 3. e 4. c 5. a 6. d
D. 1. T 2. T 3. F 4. F 5. T 6. T 7. T
E. 1. The branch of called microbiology. 2. The tiny ones include as microorganisms or microbes. 3. Most microorganisms dead plants and animals. 4. A bacterium called Lactobacillus, and curd is formed. 5. Penicillin is obtained from bacteria or fungi. 6. Pathogens enter our body

through through an animal. 7. Microorganisms are also used to make vaccines immunity against that disease. 8. The Rhizobium bacterium lives in the root nitrates to synthesise proteins.

F. 1. Microorganisms can be divided into living and a non-living thing. 2. Many food items like meat, eggs, fever, malaria and common cold. 3. The important role played clean the wastewater. 4. The processing of foods to prevent jams, sauces and ketchups. 5. Waterborne diseases are infectious diseases for the dengue virus. 6. Several microorganisms cause diseases in plants like disease in poultry. 7. The bread that we eat almost every day is prepared pastries and cakes. 8. Some simple methods of limiting the spread of should also be taken.

HOTS

1. The bacteria need heat to turn the milk into curd. So in summers the temperature is hot which helps the bacteria to multiply faster which helps them to change the milk into curd. But in winters the temperature is not warm and favourable that's why it takes more time in winters than in summers. 2. During the monsoon, the moisture content in the air increases which provides a more suitable condition for the microbes to grow. As a result, the microbes grow more rapidly in the rainy season and the disease can be spread to another person easily. 3. We should wash our hands because there are many microbes in the toilet and in our surrounding. Microbes can be even harmful. If they enter our body we will be infected by harmful diseases.

3. Synthetic Fibres and Plastics

A. 1. a 2. c 3. b 4. a 5. c 6. b 7. b
B. 1. natural fibres 2. monomers 3. rayon 4. Polyester 5. acrylic 6. Bakelite, teflon 7. recycling
C. 1. c 2. d 3. f 4. a 5. b 6. g 7. e
D. 1. T 2. T 3. T 4. F 5. F 6. T 7. T
E. 1. Fibres obtained from plants and animals are called natural fibres. Cotton, silk, linen, wool and coir are natural fibres. 2. Fibres made from synthetic fibres. Rayon, nylon and polyester 3. Rayon was the first man-made comfort property as natural fibres. On the other hand, nylon was first true synthetic fibre. It is synthesized does not wrinkle. 4. Acrylic cause

it is cheaper than natural wool and can be dyed than natural fibres. 5. The materials that are decomposed through are non-biodegradable. 6. Thermoplastics are those plastics that very high temperatures. 7. Animals eating garbage from the garbage dump air pollution.

F. 1. A synthetic fibre cross-linked, it is cross-linked polymerization. 2. The main characteristics of hence highly durable. Uses of Nylon: It is used and machines parts. The main characteristics of polyester when creased. Uses of Polyester: The most popular pure polyester. 3. Synthetic fibres have the following to natural fibres. 4. It catches fire very readily and is burn injuries. 5. Plastic is also a polymer shaped or moulded. Although different types of plastics differ made from plastics. 6. (i) Rayon is very soft, recovery of any fibre. (ii) The properties of acrylic fibres are and dries quickly. 7. The problem of plastic pollution is serious and immediate Reuse and Recycle.

HOTS

1. Yes, since each and every synthetic fibre burn quiet easily and sticks to the body and can cause severe burns. 2. Sleeping bags are mainly there to keep you warm and therefore allow you a good night's sleep. It does this by insulating you against the air around you. 3. Plastics are non-reactive, i.e. they do not react with chemicals. Therefore they are used as packaging materials and containers for storage of food and chemicals.

4. Materials: Metals and Non-Metals

A. 1. a 2. c 3. b 4. d 5. a 6. c 7. b
B. 1. electricity 2. metallic lustre
3. malleable 4. hammering 5. copper
6. kerosene 7. rust proofing
C. 1. f 2. d 3. g 4. b 5. a 6. c 7. e
D. 1. T 2. F 3. F 4. T 5. T 6. T 7. F
E. 1. All materials are elements. Hydrogen, carbon, as elements. 2. Sodium, potassium, aluminum and magnesium 3. Metals are generally shiny, uranium and zinc. On the other hand, non-metals do not conduct heat or electricity and bromine. 4. All the metals react sodium and potassium. 5. Sulphur is used in dyes and gunpowder. 6. Copper and factory equipment. 7. Corrosion is

defined on its surface. 8. There are some elements which called metalloids. Examples of metalloids are silicon and boron.

F. 1. Metals and non-metals can be identified on the basis of their appearances and other physical properties melting and boiling points. 2. Activity-2. 3. There are several ways of as stainless steel. 4. Like sodium oxide and potassium oxide, or non-metal. Potassium + Oxygen Potassium oxide Magnesium + Oxygen Magnesium oxide 5. When a metallic salt solution metals place below.

$\text{CuSO}_4 \text{ (aq)} + \text{Fe(s)} \rightarrow \text{FeSO}_4 \text{ (aq)} + \text{Cu(s)}$

6. Metals are very reactive. They can corresponding oxides.

Metal + Oxygen Metal oxide

7. All the metals react with dilute and potassium.

Metal + Hydrochloride Metal chloride + Hydrogen gas 8. Uses of Metals: (i). Copper and aluminium German silver. Uses of Non-metals: (i). Hydrogen is used for manufacture of fertilisers.

HOTS

1. Bells are not made from wood because they aren't sonorous. But metals are sonorous. Most metals produce a ringing sound when struck because they are sonorous. Non-metals are not sonorous. 2. The reaction between potassium and a dilute acid or even just water is very dangerous. On contact with the acid the potassium bursts into flame and may even explode, sending flaming molten pieces of potassium into the air. 3. Gold is a highly valuable metal characterized by its superior resistance to corrosion and oxidation.

5. Coal and Petroleum

A. 1. c 2. a 3. b 4. b 5. b 6. c 7. d
B. 1. inexhaustible 2. non-polluting 3. fossil fuels 4. Lignite 5. Coal tar 6. Petroleum 7. ammonia, hydrogen
C. 1. T 2. F 3. T 4. F 5. T 6. F 7. T
D. 1. e 2. d 3. f 4. b 5. g 6. c 7. a
E. 1. We use various materials natural resources. Water, wind and the sun. 2. Renewable natural resources and non-renewable natural resources. Water, wind and the sun are renewable natural resources. Coal, petroleum and natural gas are renewable natural resources. 3. Natural gas is the cheapest petrol or diesel. 4. These

are the conventional sources the examples of fossil fuels. 5. Most of the substances generation of electricity. 6. As coal contains called carbonization. 7. The petroleum that is extracted are called its fractions. 8. Petroleum was formed from organisms it is extracted. 9. 99% of all plastics are derived heavier than petrol. 10. Destructive distillation of coal is carried out coal tar and coal gas.

F. 1. Coal was formed millions became coal. 2. There are three main types of coal- anthracite, other grades of coal. 3. Coke: It is a tough, porous coal processing plants. 4. The process of separating crude oil into usable fractional distillation. 5. Natural gas is another fossil fuel found along with Krishna Godavari delta. 6. To extract petroleum, a survey is carried of the well. 7. Fossil fuels are natural wherever possible. 8. We can contribute towards the conservation of lighting saves fuel.

HOTS

1. It can't be made in laboratory because it requires high temperature and other requirements which can't be done by us and happens naturally. Also it takes a very long time to form. 2. Petroleum is called as the black gold because it is the prime source of energy. Petroleum and its bi-products are very valuable. Petroleum provides us with a variety of products like kerosene, wax, plastic and other lubrication. It acts as a raw material in synthetic textiles, fertilisers and chemical industries. 3. LPG is considered a better fuel because it has a low ignition temperature and takes less time to start burning. Also it does not produce any unwanted gases. Food gets cooked faster in LPG stoves.

6. Combustion and Flame

A. 1. c 2. b 3. c 4. b 5. d 6. a 7. a
B. 1. Fossil fuels 2. carbon dioxide, water 3. yellow 4. vapourise 5. dark zone 6. liquid
C. 1. b 2. e 3. f 4. g 5. c 6. d 7. a
D. 1. T 2. T 3. F 4. T 5. F 6. F
E. 1. Combustion is defined as the carbon dioxide. 2. A substance that burns in air (oxygen) to produce heat of non-combustible substance. 3. A sudden reaction with application of pressure. 4. The amount of heat liberated when unit mass its calorific value. 5. The lowest

temperature.....than their ignition temperature. 6. Solid fuels, liquid fuels and gaseous fuels are the three types of fuels in nature. 7. Carbon dioxide fire extinguisher and soda-acid fire extinguisher. 8. Carbon dioxide, being heavier.....excellent fire extinguisher.

F. 1. Fuels can be classified on millions of years to form. 2. The conditions necessary for fire (Ignition Temperature). 3. Complete combustion takes place there are remnants of ash. 4. The simplest fire extinguisher is the soda-acid is produced. 5. Non-luminous zone: The luminous zone is surrounded least hot part of the flame. 6. While selecting an ideal fuel for domestic a low cost. 7. There are three types of combustion. Rapid combustion: When application of heat. 8. Burning of fossil fuels such as coallike asthma and bronchitis in human beings.

HOTS

1. Burning of synthetic fibres is different from that of natural fibres. Synthetic fibres have one main disadvantage- they melt quickly on burning. This burned cloth can stick to our body. They are made of chemicals. 2. Gas stoves are popular with homeowners because they provide efficient heat transfer with precise heat control. They heat cookware with flame from a burner. A properly adjusted gas stove burner burns with a blue flame. But if the burner is out of adjustment, the gas flame will be yellow. 3. We wrap a blanket around a person whose clothes have caught fire because it cuts the supply of oxygen with fire as fire can only burn when it is in contact with air.

7. Conservation of Plants and Animals

A. 1. a 2. b 3. a 4. d 5. c 6. a 7. b 8. a
B. 1. biodiversity 2. CO₂ O₂ 3. soil erosion 4. endangered 5. endemic 6. biosphere 7. wildlife
C. 1. F 2. T 3. T 4. F 5. T 6. T 7. F
D. 1. e 2. d 3. g 4. a 5. b 6. f 7. c
E. 1. Biodiversity can be defined in an area. 2. Plants and animals together maintain silk, lac and gum. 3. The plants found in a called fauna of that area. 4. A great variety of plants and animals protecting valuable resources. 5. Natural and human activities freezing temperature. 6. Grazing animals eat young and trunks. 7.

Replanting of new is also called afforestation. 8. Endemic species are those are endemic fauna. 9. International Union for Conservation of Nature and Natural Resources 10. The Red Data Book provides the Red List.

F. 1. Every component of biodiversity serves force of wind and water. 2. Deforestation has the following rainfall and drought. 3. Trees are cut down (deforestation) for petroleum and ores. 4. A wildlife sanctuary is a protected area Bandipur Wildlife Sanctuary. On the other hand, a biosphere is that part of the earth (encompasses Tamil Nadu, Kerala and Karnataka). 5. In the Red Data Book, species are classified threat of extinction. 6. Due to illegal trade is called poaching. 7. There are three levels of endangerment- threatened, called vulnerable species. 8. Habitat protection: The habitat of wild animals must be punished strictly. 9. 'Project Tiger' is the most famous wildlife their natural environment. 10. Recycling of paper is another wildlife and hence biodiversity.

HOTS

1. It leads to reduced rainfall because loss of trees means less water entering the local atmosphere via transpiration. It can also mean flooding because of the loss of living roots which absorbs water. If water is not absorbed it runs off and causes flooding. 2. It is not impossible to stop completely. What we should do is, ask the loggers who cut trees to plants, to replace what they cut. We should also plant trees in urban areas more than in forests, because that's what we need more right now. 3. The purpose of making national parks, wildlife sanctuaries and biosphere reserves is to conserve our traditional culture, endangered species, biodiversity of earth, etc.

8. Cell- Structure and Functions

A. 1. a 2. b 3. b 4. d 5. c 6. a 7. a
B. 1. transparent, colourless 2. storage 3. nerve cell 4. cytoplasm 5. chromosomes 6. prokaryotic 7. dictyosome
C. 1. e 2. d 3. f 4. b 5. g 6. c 7. a
D. 1. T 2. T 3. T 4. F 5. T 6. T 7. F
E. 1. The basic structure unit of an organ 2. Cell membrane is permeable and allows water, shape to the cell. 3. Chromosomes contain the resembles its parents. 4. Organisms such as amoeba,

..... or trillion cells. 5. The endoplasmic reticulum is a support to the cytoplasm. 6. The nuclear membrane allows the movement the nucleus. 7. Plastids are specialised protein and fat. 8. One of the most important characteristics process is called cell division.

F. 1. In 1838, two German biologists interaction of its cells. 2. Robert Hooke was the first appearance of a honeycomb. 3. Cells exist in different shapes. They may be flat, function it performs. 4. Based on the type of nucleus, a cell examples of prokaryotic cells. 5. Answer given in the table in book. 6. Inside the cell there are structure of a cell. Lysosomes are present in animal cells bags of the cell. Golgi bodies are small known as dictyosome.

HOTS

1. Unlike the animal cells, the plant cells need additional protection as they are exposed to the various movements by the wind and the water. They cannot move like animals. So, plant cells have an additional coating of a protective layer called the cell wall whereas the animals do not have it. 2. Vacuoles have no effect on them when plants are not watered. Vacuoles just change their shape. There could be greater effect on the whole plant, when it is not watered. Rate of photosynthesis will get slowed down and wilting of plant parts such as leaves may also occur. Wilting occurs when vacuoles are not expanded to provide turgidity to cells and plant parts due to presence of less water.

9. Reproduction in Animals

A. 1. b 2. c 3. a 4. b 5. a 6. d 7. a 8. c
B. 1. gametes, zygote 2. embryo 3. external 4. reproductive system 5. scrotal sac 6. sperms, vagina 7. ovum, oviduct
C. 1. c 2. d 3. a 4. f 5. g 6. c 7. b
D. 1. T 2. T 3. T 4. T 5. F 6. F 7. T
E. 1. The process by which an organism is able to produce more of its own kind is known as reproduction. 2. Reproduction is very important a stage when it can reproduce. 3. The animals which give birth development is complete. 4. In a hen, internal fertilisation egg and hatches. 5. If the ovum is not fertilised by a sperm, as menstruation. 6. In sexual intercourse, the male transfers sperms a new individual. 7. A large

number of animals such as dog, bear, cat, bird, called hermaphrodites. 8. During spring or rainy season, frogs and toads long tail and fertilise the eggs.

F. 1. Another method of asexual individuals is called binary fission. 2. In the specie of hydra, called budding. 3. In external fertilisation, the fusion of male and cat and also human beings. 4. Fertilisation results in the formation of zygote fully-formed baby. 5. The male reproductive system includes a pair of testes. They are the female's body. 6. The female reproductive system is made up the oviduct (fallopian tube). 7. In case of a frog, it passes through as metamorphosis. 8. Some women are unable to have babies because their fallopian called a test tube baby.

HOTS

1. Amoeba and hydra cannot reproduce like human beings. They exhibit asexual form of reproduction in which only one parent is needed for reproduction. Also, in asexual form of reproduction, there is no fertilisation taking place, except in special cases. One more reason is that amoeba and hydra do not possess male or female reproductive organs, and hence they cannot reproduce like human beings, in which sexual reproduction takes place. 2. Women with blocked tubes can't get pregnant naturally because sperms cannot pass through to meet the egg, but blocked tubes have nothing to do with her ability to carry a child and to give birth. 3. Fishes and frogs lay hundreds of eggs and release million of sperms, all the eggs do not get fertilised and develop into new individuals. This is because the eggs and sperms get exposed to water movement, wind and rainfall. Also, there are other animals in the pond which may feed on eggs. Thus, production of large number of eggs and sperms is necessary to ensure fertilisation of at least a few of them.

10. Reaching the Age of Adolescence

A. 1. a 2. b 3. c 4. d 5. a 6. b 7. c
B. 1. sexual maturity 2. adolescence 3. puberty 4. female 5. thyroxin 6. diabetes 7. menstruation
C. 1. d 2. c 3. b 4. f 5. a 6. g 7. c
D. 1. T 2. F 3. T 4. F 5. T 6. T 7. T
E. 1. The stage of life as puberty. 2. On an average, girls person to person. 3. Apart from sex hormones, the master gland. 4. The most

visible change during puberty body parts for growth. 5. Lack of sufficient insulin causes diabetes. 6. The World Health Organisation (WHO) defines adolescence as secondary sexual characteristics. 7. In boys, the shoulders inside the breasts. 8. In human beings, each cell of X and Y sex-chromosome. 9. During adolescence, brain body and mind. 10. During adolescence, the body and mind ruin health and happiness.

F. 1. During adolescence the body undergoes eggs every month. 2. Apart from sex hormones, condition called dwarfism. 3. In females, the reproductive phase is controlled by hormones. 4. Good nutrition, proper exercise and rest, excellent ways to exercise. 5. Hormones are present in animals as cannot become adult frog. 6. In human beings, each cell of the body Indian people. 7. In girls, during puberty, mature into an adult male. 8. HIV (Human Immunodeficiency Virus). This virus can spread by sharing syringes there is no cure.

HOTS

1. The pelvic region broadens because it has to receive the egg (ova) so it broadens and becomes cushiony to receive egg. 2. During fertilisation, if a sperm having X chromosome fuses with an egg (X), the fertilised egg will have XX chromosomes and the zygote develops into a baby girl. However, if a sperm having Y chromosome fuses with an egg (X), the fertilised egg has XY chromosomes and the zygote develops into a baby boy. This is clearly shows that it is father who determines the sex of the unborn child. 3. Because adolescence is a period of time when the bones grow.

11. Force and Pressure

A. 1. b 2. a 3. c 4. d 5. a 6. b
B. 1. chapattis 2. gravity 3. non-contact force 4. Sir Isaac Newton 5. pressure gauge 6. higher pressure 7. electrostatic
C. 1. e 2. d 3. f 4. c 5. b 6. a
D. 1. T 2. T 3. F 4. T 5. T 6. F 7. T
E. 1. A body cannot start get in and so on. 2. Pressure in Pascal = Force in Newton/Area in metre square. 3. If you immerse the funnel pressure increases with depth. 4. The layer of air which is present column above it. 5. While playing football the ball. 6. The formula for pressure is: Pressure =

Force / Area. From the formula the pressure increases. 7. Pressure is the result of change to the board. 8. The forces which are of contact forces. On the other hand, the forces that do not non-contact forces. 9. Barometer and manometer 10. In 1650 the Mayor of a German direction could separate them!

F. 1. When applied on an object, force without the action of a force. 2. (a). The force exerted by a charged another charged body. (b). Every object in the universe of the force of gravity. 3. An instrument used to measure pressure is pressure increases with depth. 4. Take a plastic all the directions. 5. (i). Cutting instruments like knife greater stability. 6. As one gains height nose bleeding. 7. The instrument used for measurement of atmospheric pressure atmospheric pressure.

HOTS

1. The television screen becomes electrically charged and it exerts an electrostatic force on the hair of your hand. 2. The pressure of liquid increases with an increase in depth. Specially designed suits protect scuba divers from the huge pressure of the water underneath. 3. Earth and some inner planets have atmosphere due to force of gravity on the planet. Due to force of gravity, gases in atmosphere do not escape. In case of the moon and some other planets, the force due to gravity is comparatively too weak to hold the gases.

12. Friction

A. 1. b 2. a 3. b 4. c 5. c 6. a 7. b 8. b
 B. 1. irregularities 2. rolling friction 3. nuisance, minimum 4. machinery, automobiles 5. steel, steel surfaces 6. streamlined 7. Gymnasts 8. machines
 C. 1. c 2. d 3. f 4. b 5. e 6. a
 D. 1. F 2. T 3. T 4. F 5. T 6. T 7. T 8. F
 E. 1. Roll a ball on the called the force of friction. 2. When you push a heavy box, it does not moving the box difficult. 3. A surface offers friction because of offers more friction. 4. A shape which is through fluids. 5. Use of wheels between move each other. 6. Gas and liquids are considered as fluid is made streamlined. 7. The force which opposes to a body from rest.
 F. 1. It will not be possible the absence of friction. 2. Friction causes the

moving parts the machine reduces. 3. The force which opposes the motion when the examples of sliding friction. On the other hand, the force which opposes the motion make the movement easier. 4. There are certain situations when to improve their grip. Friction reduces the speed of a moving object, and the board. 5. Activity-2

HOTS

1. Ideally, a body like a ring or a sphere rolling without slipping over a horizontal plane will suffer no friction. At every instant, there is just one point of contact between the body and the plane and this point has no motion relative to the plane. In this ideal situation, kinetic or static friction is zero and the body should continue to roll with constant velocity. We know, in practice, this will not happen and some resistance to the motion (rolling friction) does occur, i.e. to keep the body rolling, some applied force is needed but this friction (rolling friction) is much less than the sliding friction. This is the reason why for the same weight, rolling friction is much smaller than static or sliding friction. 2. There are different types of tyres used depending on what kind of racing they are doing. But all racing tyres have more grip than regular tyres. This usually means that they wear out faster, and create more road noise than regular tyres. 3. If there were no friction, a moving object would never stop since there would not be any opposing force and loss of energy of the object so it would always be remain in the state of its motion.

13. Sound

A. 1. b 2. b 3. c 4. a 5. d 6. a 7. a 8. b 9. d 10. b
 B. 1. vibration 2. voice box, windpipe 3. oscillations, frequency 4. amplitude 5. combination 6. infrasonic 7. auditorium
 C. 1. f 2. d 3. b 4. e 5. g 6. c 7. a
 D. 1. T 2. T 3. F 4. F 5. F 6. T 7. T
 E. 1. When an object vibrates, our ears as a sound. 2. The time taken for the pendulum measured in seconds. 3. Bats and some other as infrasonic sounds. 4. The maximum distance of the oscillation. 5. In humans, the sound is make different sounds. 6. Bats have large ears that are very has a good meal. 7. The number of oscillations frequency is 5 hertz. 8. A high frequency sound a gruff or deep voice.
 F. 1. A simple pendulum consists complete one oscillation. 2. Our ears are

sensory organs register the sound. 3. Quality or timbre describes those characteristics of in their waveforms. 4. Stringed instruments: They are instruments in which violin and sarod. Wind instruments: They are instruments in which shehnai and trumpet. Percussion instruments: They are instruments in which dholak and mridangam. 5. Noise can affect blood pressure and heart problems. 6. To control noise, we need to the impact of noise. 7. Loud and excessive sound producing loud noise. 8. Just by the type of echo produced, is pleasant to hear. 9. Audible sounds are range from 20 to 20,000 Hz. 10. Sound travels through a medium gases, liquids and solids.

HOTS

1. Generally, no sound is heard when a simple pendulum oscillates. It's just moving through the air. The pendulum itself makes only air noise as it moves back and forth. 2. When you pluck a note on a guitar string, there isn't very much that can go wrong. You may not play the right note at the right time, of course, but a single note will always come out at the expected pitch, and sounding reasonably musical. When a beginner tries to play a violin, things are much more difficult. When a bow is drawn across a string, the result might be a musical note at the desired pitch, but on the other hand it might be an undesirable whistle, screech. This difference stems from a fundamental distinction between the physics of plucked and bowed strings.

14. Chemical Effects of Electric Current

- A. 1. c 2. a 3. c 4. a 5. b 6. c 7. a
 B. 1. stationary 2. orbits 3. neutral
 4. electrolytes 5. Electroplating 6. silver, gold
 7. electroplating
 C. 1. T 2. F 3. T 4. T 5. F 6. T 7. T
 D. 1. c 2. g 3. d 4. e 5. f 6. a 7. b
 E. 1. electrons, protons and neutrons particles. 2. The uninterrupted, as electric circuit. 3. When electric current is called the chemical effect of electric current. 4. The liquids which conduct electricity are non-electrolytes. 5. The materials, which allow and cotton are insulators. 6. The chemical decomposition called electrolysis.
 F. 1. An atom is made up of

through a conductor. 2. Electroplating is one of the chemical effects chromium on them. 3. When an electric current is passed is called electrolysis.

4. Electroplating has many benefits rims and many others. 5. The distilled water is a or negative charge.

HOTS

1. Air is not a conductor of electricity because if it conducts electricity we cannot live. And if there is any ion present then only it can conduct electricity but air is a mixture of gases. So it is not a conductor. 2. The presence of even a small amount of impurities makes water a good conductor. We should never touch an electric appliance with wet hands. Doing this may cause an electric current to flow through the body and give a dangerous electric shock. 3. The LED.

15. Some Natural Phenomena

- A. 1. b 2. d 3. a 4. a 5. a 6. b 7. c 8. b
 B. 1. lithosphere 2. electrostatic 3. Abraham Bennett 4. thunderstorm 5. earthquakes 6. mantle 7. molten state 8. focus
 C. 1. T 2. T 3. T 4. F 5. F 6. T 7. T 8. F
 D. 1. b 2. c 3. g 4. a 5. f 6. e 7. d
 E. 1. Electric charge can be charges repel each other'. 2. The process of transferring called earthing. 3. The lithosphere of the earth like earthquakes. 4. The attraction of unlike called electric discharge. 5. The point where the earthquake as the epicenter. 6. On hearing the sound of thunder, rush to cause great harm to you. 7. Richter scale.
 F. 1. When you rub one the glass rod. 2. First of all, the buildings in seismic areas after an earthquake. 3. A lightning conductor is a device used to done to the building. 4. During a thunderstorm, the air currents move upward we call lightning. 5. The earth is divided into three portions. They are core, sulphur present here. 6. The tectonic plates are not constant everything on the surface. 7. When the discs of the electroscope are connected i.e. it is positively charged. 8. When certain objects are rubbed against us are electrically neutral.

HOTS

1. Charging by rubbing in a wet weather does not occur as well as in dry weather because the moisture present in the air carries away the

charge. Hence, charging by rubbing occurs best in dry days. 2. In an earthquake, there are several types of seismic waves, with primary being fastest but weakest and surface waves the opposite. Surface waves cause the most damage, because they cause buildings to collapse and tsunamis to form, thus causing flooding. 3. Yes, minor earthquakes have been triggered by human activities such as mining, the filling of reservoirs behind large dams, and the injection of fluids into wells for oil recovery or waste disposal. Large dams hold back enormous quantities of water. Some of this water may penetrate into cracks in the underlying rock, and sometimes this may trigger small earthquakes under or very near the reservoir.

16. Light

- A. 1. a 2. b 3. c 4. d 5. a 6. b 7. b 8. c
 B. 1. ciliary muscles 2. incident ray 3. normal 4. light 5. mirrors 6. focusing 7. concave 8. optical nerve
 C. 1. b 2. c 3. d 4. g 5. f 6. c 7. a
 D. 1. T 2. T 3. F 4. T 5. F 6. T 7. T 8. F
 E. 1. Reflection is defined polished surface. 2. First Law of Reflection: The incident ray, reflection, $\angle i = \angle r$. 3. The main use of a periscope of the water. 4. A kaleidoscope is a form beautiful designs. 5. The surfaces of most objects around reflects light in this way. 6. If you write something on a piece displays lateral inversion. 7. Light coming from a how we see objects around us. 8. When a ray of light different layers vary.
 F. 1. The eye is a natural optical formed on the retina. 2. The formation of the image behind with concave lenses. 3. Some features of image formed by a plain mirror: Size: Look at displays lateral inversion. 4. Luminous objects are those that see objects around us. 5. When two or more mirrors seen when you visit a hair cutting saloon. 6. Periscope is another instrument things above the surface of the water. 7. When a number of parallel rays fall on a smooth sunlight is well lighted. 8. Eyes are very important called an ophthalmologist.

HOTS

1. Due to the laws of reflection the angle of incidence equals to the angle of reflection. Thus, if a ray of light falls directly on the normal it will reflect back along the same

path, normal to the mirror. 2. We can see objects when light reflected by them fall on our eyes. It is because of irregular reflection that we can see objects from every direction. Irregular reflection of sunlight by objects around us enables our room to have light during the day even if sunlight does not directly fall into it. Basically we will not be able to see because we would be practically blinded by light. 3. Light from the object is incident at an angle 45 degree on the upper mirror. It is reflected by the upper mirror on to the lower mirror at an angle of 45 degree with the normal on the plane mirror. The lower mirror reflects this light beam into your eyes. Thus, you are able to see the image of the object. 4. Yes, a glass slab bends different coloured lights by different amounts. But after emerging from other parallel side these coloured lights converge and no colourful effect is observed. If we join two prisms the new shape will work as a glass slab and we will see the same white line emerging out from the other parallel side of the slab.

17. Stars and The Solar System

- A. 1. b 2. a 3. c 4. c 5. d 6. a 7. c 8. d
 B. 1. astronomers 2. Alpha Centauri 3. constellation 4. Little Dipper 5. North, South 6. Uranus 7. asteroids 8. Sputnik-1
 C. 1. d 2. c 3. e 4. f 5. b 6. a
 D. 1. F 2. T 3. T 4. F 5. T 6. F 7. T 8. F
 E. 1. The universe called celestial bodies. 2. A light year is large distance. 3. Saturn is often called the help of a telescope. 4. This is the only planet where life form to be created. 5. When a small object from the space reaches are called meteorites. 6. Sailors and during night. 7. The Ursa Major has seven Pole Star (Polaris). 8. (i). Orion is one of the magnificent of a quadrilateral. (ii). Scorpius is one of the during summer season.
 F. 1. Stars are seen in shining across the sky. 2. A comet is a celestial body which appear again in 2062. On the other side, there is a large gap between the orbits asteroid is Ceres (diameter 1000 km). 3. The moon appears to change all over again. 4. One of the most summer season. 5. Artificial satellites are sent for been launched by ISRO. 6. Mercury is the smallest planet extremely cold at night. 7. Venus is the second planet in order to the greenhouse effect. 8.

Besides the natural satellites, there are some burn up like meteors.

HOTS

1. Stars do glow during the day, but we can't see them because of the glare of sunlight. When the sun is up, the blue colour in sunlight gets scattered all over the atmosphere, turning the sky the familiar bright blue colour. This blue light is much brighter than the faint light coming from the stars, so it prevents us from seeing them. 2. Each constellation is a collection of stars that are distributed in space in three dimensions – all stars at different distances from Earth. The stars in a constellation appear to be in the same plane because we are viewing them from very, very, far away. Stars vary greatly in size, distance from Earth, and temperature. Dimmer stars may be smaller, farther away, or cooler than brighter stars. By the same, the brightest stars are not necessarily the closest. 3. Because the moon is also orbiting around the Earth. If the moon didn't rotate about its axis, here's what would happen. One side would be facing us right now; two weeks later, when the moon has gone halfway in its orbit around the Earth, the opposite side of the moon would be facing us.

18. Pollution of Air and Water

A. 1. a 2. d 3. b 4. b 5. b 6. a 7. c 8. b

B. 1. smoke, carbon monoxide 2. eutrophication 3. Ganga 4. pollutants 5. gasoline 6. greenhouse 7. industrial effluent 8. 1985

C. 1. b 2. c 3. e 4. d 5. a

D. 1. T 2. F 3. T 4. T 5. F 6. T 7. F 8. T

E. 1. Air pollution occurs when humans, animals and plant. 2. suspended particulate matter. It consists of vapour. 3. The case of the Taj Mahal is a reminder marble of the Taj Mahal. 4. Carbon dioxide and methane 5. Boiling and addition of chlorine tablet 6. Water which is fit for drinking is called potable water. 7. Ozone layer works like can be very harmful. 8. The main organic materials are of life in the water.

F. 1. Air pollution can result from natural air pollutants. 2. Greenhouse gases trap to global warming. 3. Another effect of air some species of fishes. 4. Purification of water in city and town. 5. Smog is a combination of harms the environment. 6. When toxic substances enter lakes, affecting aquatic ecosystems. Domestic sewage: The main organic materials are technical problem. Agricultural runoff: The use of land for agriculture life in the water bodies. 7. The following methods can be used to purify water at homes. Boiling: This is the are called RO filters. 8. The Ganga is the most levels of pollution. 9. Dealing with water pollution is something for local residents. 10. (i). The wastewater discharged from industries is wastewater treatment. (ii). Among the most dangerous of all water pollutants loaded or unloaded.

HOTS

1. CNG is actually the cleanest of all fossil fuels. Since natural gas is composed mainly of methane, so on burning, it produces carbon dioxide and water vapour. Meanwhile, petroleum produces higher carbon emissions, nitrogen oxides and sulphur dioxide. Burning fuel oil also produces ash particulates that worsen pollution. So, CNG is considered to be a better fuel than petrol and diesel. 2. Damage does not happen immediately, but over time acid rain deteriorates land, vegetation, and even buildings. Both natural vegetation and crops are affected by acid rain. The roots are damaged by acid rainfall, causing the growth of the plant to be stunted. Nutrients present in the soil, are destroyed by the acidity. The acid rain, falling on the plants damages the waxy layer on the leaves and leaves the plant open to diseases. Many plants die off.