



Start-up **SCIENCE**

(A BOOK OF SCIENCE EDUCATION)

Teacher's Help Book (1-5)

Teacher's Manual

Start-Up Science-1

UNIT-I : OUR BODY

CHAPTER 1 : MY BODY

A. 1. (c) 2. (a) 3. (b) 4. (a) 5. (a) **B.** 1. body 2. five 3. Eyes 4. Nose 5. care
C. 1. Eyes 2. Nose 3. Ears 4. Tongue 5. Skin **D.** 1. H 2. U 3. H 4. H 5. U
E. 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **E.** 1. Running, walking and dancing. 2. Sense organs help us to sense the things around us. 3. Tongue helps us to taste the things we eat. 4. Our skin helps us to feel. 5. Eyes help us to see.

CHAPTER 2 : FOOD WE EAT

A. 1. (c) 2. (c) 3. (a) 4. (b) 5. (a) **B.** 1. animals 2. food 3. meat 4. three 5. healthy **C.** P, P, A, A, A **D.** APPLE, POTATO, BANANA, ONION, GARLIC, ORANGE, CAPSICUM, GRAPES, MANGO **E.** 1. We eat food to remain fit and healthy. 2. We get fruits, vegetables and cereals from plants. We get milk, eggs and honey from animals. 3. Breakfast, lunch and dinner are the different meals we eat in a day. 4. (a) Wash your hands before and after each meal. (b) Chew your food properly. (c) Eat your meals at fixed times. 5. Junk foods like noodles, pizza burgers, pasta, chips, etc is not food for our health.

CHAPTER 3 : HEALTHY HABITS

A. 1. (b) 2. (a) 3. (c) 4. (a) 5. (a) **B.** 1. Do it Yourself. 2. Do it Yourself. 3. Do it Yourself. 4. Do it Yourself. 5. Do it Yourself. **C.** 1. dull 2. fit 3. eight 4. twice 5. nail cutter **D.** 1. True 2. True 3. True 4. False 5. False **E.** 1. towel 2. toothbrush 3. shampoo 4. soap 5. soap **F.** 1. We sleep and rest to remain healthy. 2. (a) We should take a bath daily. (b) We should comb our hair everyday. (c) We should wash our hands before and after meals. 3. We can keep our surroundings clean by putting the rubbish in the dustbin. 4. We should keep our surroundings clean to remain healthy.

CHAPTER 4 : LIVING AND NON-LIVING THINGS

A. 1. (a) 2. (c) 3. (c) 4. (c) **B. Nautral Things-** Sun, Moon, Stars, Plants.

Non-living Things- Pencil, Book, Bottle. **Man-made Things-** House,

Road Aeroplane. **C.** 1. nuture 2. Non-living 3. dustbin 4. trees **D.** 1.

Natural things 2. Man-made thing 3. Reproduce 4. Non-living things

E. 1. The things that are given to us by nature are called natural things.

For example, birds, animals, etc. 2. The things that are made by man are called man-made things. For example, Road, car, book, etc.

3.	Living Things	Non-living Things
(a) They grow	They do not grow.	
(b) They need food and water.	They do not need fod and water.	
(c) They move	They do not move.	

4. (a) Growing more and more plants. (b) Avoid cutting trees. (c) Stop hunting animals. **F.** 1. Non-living thing 2. Non-living thing. 3. Living thing. 4. Living thing.

CHAPTER 5 : HOUSING

A. 1. (a) 2. (a) 3. (b) 4. (a) 5. (a) **B.** 1. Bed Room, Kitchen, Dining room,

Bathroom, Drawing rooim, study room. **C.** 1. Bedroom 2. Kitchen 3. Store

room 4. Dining room 5. Bathroom **D.** 1. We need a house because it

protects us from heat, cold, rain wild animals, thieves and bad weather.

2. Kutcha house is made of mud, leaves, straw and bamboo. Pucca

house is made of bricks, cement, iron, steel, etc. 2. We eat our meals in

the dining room. 4. Pucca house is made of bricks, cement, iron, stell,

tiles, marble, etc. 5. We meet our guests in the drawing room. **E.** 1. ✓

2. ✗ 3. ✗ 4. ✗ 5. ✓ 6. ✓

UNIT-II : OUR SAFETY

CHAPTER 6 : SAFETY SAVES

A. 1. (a) 2. (a) 3. (a) 4. (a) 5. (a) **B.** 1. hurry 2. footpath 3. first 4. stranger

5. push **C.** 1. True 2. True 3. True 4. True 5. False **D.** 1. car 2. stop 3.

zebra 4. road 5. First Aid Box **E.** U, U, S, U **F.** 1. The rules that are

followed to stay safe are called safety rules. 2. We should not play with

sharp things because we can get hurt. 3. We must always use zebra

crossing to cross the road. 4. First Aid is the first help given to an injured person before the arrival of a doctor. 5. (a) Do not play with fire. (b) Do not play with sharp things. **G.** 1. 112 2. 101 3. 102 **H.** 1. Dettol 2. Bandage 3. Cotton 4. Savlon 5. Burnol 6. Band-Aid

CHAPTER 7 : KEEPING CLEAN

A. 1. (a) 2. (c) 3. (b) 4. (a) 5. (c) **B.** 1. brush 2. sneezing 3. cold 4. bite 5. smart **C.** 1. G 2. G 3. G 4. G 5. B **D.** 1. False 2. True 3. True 4. True **E.** 1. Brushing teeth make them clean. 2. Brushing teeth, Bathing, Combing our hair and cutting nails. 3. We must go to the toilet after getting up. 4. We must take a bath everyday to keep ourselves clean. 4. We should put the waste material in the dustbin. **F.** 1. Wash eyes with cold water. 2. Wash hands. 3. Cover his/her mouth. 4. Use ear-buds or damp towel. 5. Rest and sleep.

UNIT-III : THE WORLD OF PLANTS

CHAPTER 8 : PLANTS AROUND US

A. 1. (b) 2. (c) 3. (a) 4. (c) 5. (b) **B.** 1. green friends 2. Herbs 3. Shrubs 4. Climbers 5. Plants **C.** 1. Branch 2. Flower 3. Bud 4. Leaf 5. Fruit 6. Root **D.** 1. Trees have a very thick, hard and woody stem known as trunk. 2. Herbs live only for one season. 3. Roots, stem, branches, leaves, flowers, fruits, buds are the different parts of a plant. 4. We get fruits, vegetables, pulses and flowers from plants. 5. Creepers are plants with weak stem. They creep or grow along the ground. They have very big and heavy fruits. **E. Trees-** Mango tree, Neem tree. **Herbs-** Grass, Spinach. **Shrubs-** Jasmine plant, Rose plant. **Creepers-** Watermelon plant, pumpkin plant.

UNIT-IV : ANIMALS WORLD

CHAPTER 9 : WORLD OF ANIMALS

A. 1. (c) 2. (a) 3. (b) 4. (b) 5. (b) **B.** 1. (d) 2. (c) 3. (e) 4. (a) 5. (b) **C.** 1. Lion, Wolf 2. Dog, Cat 3. Cow, Hen **D.** 1. different 2. big 3. Domestic 4. Pet 5. Wild **E.** 1. Domestic animals are the animals which live around us in our farms or fields. 2. Aquatic animals live in water. For example- fish and octopus. 3. People keep pet animals because they give us pleasure. 4. Reptiles are animals which crawl or move on their belly and they don't have any short legs.

CHAPTER IO : SHELTER AND FOOD OF ANIMALS

A. 1. (b) 2. (b) 3. (b) 4. (b) 5. (b) **B.** 1. shelters 2. food 3. leaves 4. worms 5. flesh **C.** 1. (b) 2. (a) 3. (d) 4. (c) 5. (e) **D.** 1. Animals need a home to protect themselves and their young ones from heat, cold, rain and enemies. 2. Rabbit, snake, lion and elephant. 3. The animals that eat the flesh of other animals are called flesh-eaters. 4. A large number of animals that live and feed together is called a herd. 5. Some animals like the cow, goat and horse eat only grass and leaves. They are called plant-eaters. **E.** 1. Stable 2. Burrow 3. Hole 4. Coop 5. Den 6. Kennel

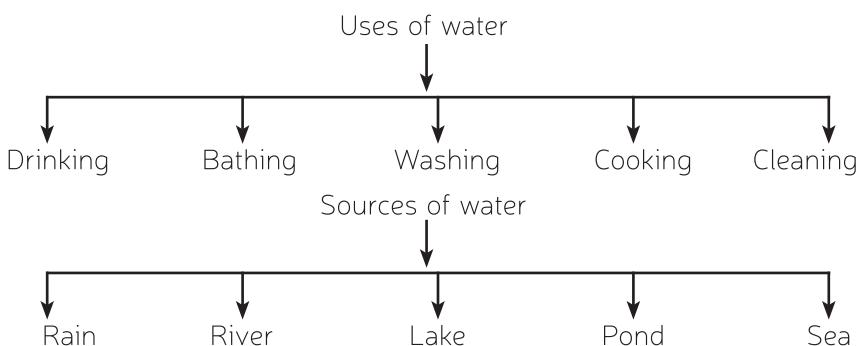
UNIT-V : OUR ENVIRONMENT

CHAPTER II : AIR WE BREATHE

A. 1. (c) 2. (c) 3. (b) 4. (a) **B.** 1. Breeze 2. Storm 3. Wind 4. Balloon 5. Glider **C.** Balloon, Ball, Tyre **D.** 1. Air 2. Wind 3. burning 4. holes 5. storm **E.** 1. Plants breathe through tiny pores in their leaves called stomata. 2. Soft and pleasant wind is called breeze whereas strong blowing wind is called storm. 3. (a) To dry wet clothes. (b) To help birds to fly. 4. Fish breathe through their gills in water. 5. Soft and pleasant wind is called breeze.

CHAPTER I2 : WATER

A. 1. (b) 2. (b) 3. (c) 4. (a) 5. (a) **B.** 1.



C. 1. natural 2. water 3. Rain 4. boil 5. waste **D.** 1. False 2. True 3. False 4. True 5. True **E.** 1. ✗ 2. ✓ 3. ✗ 4. ✓ 5. ✓ 6. ✗ 7. ✓ 8. ✓ 9. ✓ 10. ✓ **F.** 1. Ganga, Yamuna 2. Indian ocean, Pacific ocean 3. Arabian sea **G.** 1. Water is so precious for us because we need water to stay alive. 2. Drinking, bathing, cooking, and washing are the four uses of water. 3. Groundwater can be taken out by handpumps or wells. 4. We can

make water pure by filtering or boiling it. 5. Reusing water for various purposes is called water conservation.

CHAPTER 13 : OUR SURROUNDINGS

A. 1. (a) 2. (b) 3. (c) 4. (a) 5. (a) **B.** 1. plants 2. dirty 3. water 4. harm 5. trees **C.** 1. True 2. False 3. True 4. False 5. True **D.** 1. Buses, Factories 2. Throwing garbage, Animal bathing 3. Use jute bags, throw waste in dustbin **E.** 1. Air pollution 2. Water pollution 3. Soil pollution **F.** 1. Plants and animals. 2. Air and water. 3. Air becomes unfit for use due to smoke of cars, buses, factories, scooters and burning of leaves, etc. 4. Water get polluted due to human activities like throwing garbage, factory waste in water, animals bathing in water bodies,, etc. 5. We should throw our waste in dustbins. We should plant more trees in our neighbourhood.

UNIT-VI : OUR ATMOSPHERE

CHAPTER 14 : WEATHER AND SEASONS

A. 1. (a) 2. (a) 3. (b) 4. (a) 5. (a) **B.** 1. winter 2. raincoat 3. cold 4. woolen 5. spring **C.** 1. it is related to water. 2. weather is pleasant. 3. keep us warm. **D.** 1. Spring season, Summer season, Monsoon, Winter season, Autumn. **E.** 1. Weather can be defined as the state of air at any given time. 2. We wear woollen clothes in winter season because they keep us warm. 3. Spring season is said to be the king of all seasons because the weather is very pleasant. 4. Trees shed their leaves in autumn season. In this season, the weather is quite pleasant. 5. Monsoon is the rainy season of the year. People wear raincoats, gumboots and carry umbrella while going outside to keep themselves dry.

CHAPTER 15 : IN THE SKY

A. 1. (a) 2. (c) 3. (c) 4. (a) 5. (a) **B.** 1. (b) 2. (c) 3. (d) 4. (e) 5. (a) **B.** 1. We see the sun, clouds and birds in the day sky. 2. (a) The sun is a star. (b) It is necessary for plants and animals to live. 3. The different shapes of the moon are called the phases of the moon. 4. Stars form patterns in the sky. These patterns are called constellations. 5. The stars look small because they are far away from the earth.



Start-Up Science-2

UNIT-I : I MY SELF

CHAPTER I : FOOD FOR HEALTH

A. 1. (c) 2. (a) 3. (a) 4. (a) 5. (a) **B.** 1. Milk and chicken 2. nutrients 3. waste 4. fruits 5. lunch **C.** 1. Fish 2. Cereals 3. Fruits and Vegetables 4. Ladyfinger 5. Eggs **D.** 1. it creates love and care in the family. 2. digest our food. 3. meal time. 4. they give us energy to work and play. 5. they protect us from diseases. **E.** 1. We need food because it gives us energy to work and play. It keeps our body healthy and protects us from diseases. 2. A diet which contains enough and correct proportions of all the food nutrients from all the food groups is called the balanced diet. 3. Meals are the food eaten by us at a fixed time everyday. We eat three meals in a day— Breakfast, Lunch, Dinner. 4. We should drink lots of water because it helps us to digest food. 5. Protective foods protect us from diseases.

CHAPTER 2 : BONES AND MUSCLES

A. 1. (b) 2. (a) 3. (b) 4. (c) 5. (a) **B.** 1. body 2. organs 3. brain 4. kidneys **C.** 1. All the bones join together to form a framework in our body which is called the skeleton. 2. (a) The skeleton gives definite shape to our body. (b) It protects the delicate internal organs such as heart, lungs, brain, etc. 3. Exercise makes our muscles stronger. 4. Good posture makes us look smart. 5. Exercise tone up the muscles and make them strong. **D.** I, I, E, I, E

CHAPTER 3 : HOUSING AND CLOTHING

A. 1. (c) 2. (a) 3. (c) 4. (b) 5. (b) **B.** 1. Hut 2. Caravan 3. Houseboat 4. Flat 5. raincoat, gumboot **C.** 1. True 2. False 3. True 4. True 5. False **D.** 1. Igloo, Houseboat, Caravan, Stilt house, Apartment, Hut **E.** 1. We need a house because it protects ourselves from heat, cold, rain and wild animals. 2. Permanent houses are made of stones, bricks, cement, iron rods, steel, etc. They are very strong. Temporary houses are made up of wood, mud, straw and dry leaves, They are not strong. 3. We need to wear clothes because they protect ourselves from bad weather and

insect bites. 4. We wear cotton clothes in summer season. We wear woollen clothes in winter season. 5. We wear raincoats and gumboots in rainy season.

UNIT-II : ARUND US

CHAPTER 4 : LIGHT AND SHADOW

A. 1. (a) 2. (c) 3. (c) 4. (a) 5. (a) **B.** 1. Light 2. noon 3. source of light 4. shadow 5. length **C.** 1. light, object, opposite, black **D.** 1. The sun gives us heat and light. 2. Light helps to see the things around us. 3. Shadow gives the idea of the shape of the object. 4. Shadows are shortest in the afternoon. 5. The sun is the main source of light. **E.** 1. (d) 2. (c) 3. (a) 4. (b) **F.** 1. An object that gives out light is called a source of light. 2. Candles, earthen lamps, bulbs, tubelight and lamp. 3. A shadow is the dark shape made when something blocks the path of light. 4. Shadows are shortest in the noon because the sun shines overhead. 5. Electric bulb, lamp, tubelight, CFL, etc.

CHAPTER 5 : ROCKS AND MINERALS

A. 1. (a) 2. (b) 3. (c) 4. (a) 5. (a) **B.** 1. Rocks 2. graphite 3. Marble 4. Red fort 5. Graphite **C.** 1. Ruby 2. Sandstone 3. Quartz 4. Coal 5. Granite **D.** 1. Rocks are found everywhere, on the soil, under the soil, on river beds and on sea beds. 2. Hard rocks are used to make buildings and flooring. Soft rocks are used as lead of pencils, as chalks, etc. 3. Minerals are used for making dials of watches, mirrors, etc. 4. Gemstones are used to prepare jewellery because they are precious. 5. Talc is used to prepare talcum powder.

UNIT-III : PLANT LIFE

CHAPTER 6 : HOW PLANTS GROW?

A. 1. (a) 2. (b) 3. (a) 4. (c) 5. (a) **B.** 1. Stem 2. Stem 3. minerals 4. change 5. Leaves 6. plant **C.** 1. False 2. True 3. False 4. False 5. False 6. True 7. False **D.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **E.** 1. Roots carry water, minerals and nutrients from the soil, for the growth of the plant. 2. Stem carries food and water to all parts of the plant. 3. Leaf prepares food for the plant. 4. Flower changes into fruits. **F.** 1. Stem gives support to the

plant. It carries food and water to all parts of the plant. 2. Roots carry water, minerals and nutrients from the soil, for the growth of the plant. 3. A plant needs air, water and sunlight to grow. 4. The main parts of plants are roots, stem, leaf, flower and fruits. 5. The development of a plant from the seed is called germination. **G.** (a) Flower (b) Roots (c) Leaves (d) Fruit (e) Stem

CHAPTER 7 : PLANT ARE USEFUL

A. 1. (a) 2. (a) 3. (b) 4. (a) 5. (a) **B.** 1. Pulses 2. Neem 3. manure 4. Cumin seeds 5. Carrot **C.** 1. Neem, basil 2. Team, Bamboo 3. Balloons, Tyres 4. Cotton, Jute 5. Walnuts Almonds 6. Rose, Lily **D.** 1. (c) 2. (e) 3. (b) 4. (a) 5. (d) **E.** 1. We need oil to cook food items, to apply on our body and hair and to prepare soaps, creams, etc. 2. Plants give us fruits, vegetables, cereals, pulses, spices, etc. 3. Flowers are used to : (a) decorate houses and offices. (b) make garlands and bouquets. 4. The dried, dead, fallen plant parts when mixed with soil make manure which is used to make the soil fertile. 5. Plants provide us oil, fibres, wood, perfumes, soaps, cosmetics, medicines, etc.

UNIT-IV : ANIMAL LIFE

CHAPTER 8 : WE NEED ANIMALS

A. 1. (a) 2. (c) 3. (a) 4. (c) 5. (a) **B.** 1. Cow, Buffalo 2. Horse, Donkey 3. Dog, Cat 4. Hens, Ducks **C.** 1. Incorrect 2. Correct 3. Incorrect 4. Correct 5. Correct **D.** 1. Animals that live with us in our homes, farms or fields are called domestic animals. For example, cow, horse, etc. 2. Animals that give us milk are called milch animals. 3. Animals like horses, camels, donkeys, elephants, mules, etc., are used to carry heavy loads. These animals are called beasts of burden. 4. (a) We must give them good food and shelter. (b) We should not hurt or tease them. (c) We must be kind and loving towards animals. 5. Animals that we keep in our homes are called pet animals whereas Animals kept in our farms and fields for various uses are called domestic animals.

CHAPTER 9 : WILD ANIMALS

A. 1. (a) 2. (a) 3. (a) 4. (a) 5. (a) **B.** 1. wild 2. water, land 3. scavengers

4. pandas 5. lion **C.** 1. Wolf 2. Snake 3. Man 4. Octopus 5. Kite **D.** 1. Lion, Bear 2. Deer, Giraffe 3. Elephant, Deer 4. Parrot, Sparrow 5. Eagle, Vulture **E.** 1. Animals that live in dense forests are called wild animals. 2. Omnivores eat parts of plants as well as flesh of animals. 3. Endangered animals are the animals that are very likely to become extinct in the near future. 4. Scavengers are useful to our environment because they help to keep the forest clean. 5. Animals that eat grass, leaves of trees, green plants, etc are called herbivores.

UNIT-V : OUR SAFETY

CHAPTER IO : KEEPING SAFE

A. 1. (b) 2. (a) 3. (b) 4. (a) 5. (a) **B.** 1. fire 2. swim 3. road 4. electric 5. medicines 6. deep 7. moving **C.** 1. Red light 2. Electric wires 3. Zebra crossing 4. Footpath 5. Swimming tube **D.** 1. False 2. False 3. True 4. False 5. False 6. True **E.** 1. (c) 2. (d) 3. (e) 4. (a) 5. (b) **F.** 1. (a) Do not play with fire. (b) Never taste medicines on your own. 2. (a) Follow rules while playing the game. (b) We need to wait for our turn on swings. 3. (a) Walk on the footpath. (b) Cross the road only at the zebra crossing. 4. (a) Do not run around the pool. (b) Do not push or pull each other into the pool. **G.** 1. (a) Do not run on the road. (b) Walk on the footpath. (c) Cross the road only at the zebra crossing. 2. (a) Do not eat while swimming. (b) Do not run around the pool. (c) Do not go to the deep side of the pool. 3. Accidents happen if we are not careful. 4. (a) Do not stand in front of swings. (b) Play in a safe place like a park or a playground.

UNIT-VI : ENVIRONMENT

CHAPTER II : AIR AROUND US

A. 1. (a) 2. (c) 3. (a) 4. (c) 5. (a) **B.** 1. trees 2. breeze 3. smoke 4. weight, space 5. breathe **C.** 1. True 2. True 3. False 4. False 5. True **D.** 1. (c) 2. (a) 3. (b) 4. (e) 5. (d) **E.** 1. (a) Air is needed for burning. (b) Air is used to fill air in balloons, tyre tubes, footballs, etc. (c) Air is used to turn the blades of windmill. 2. (a) Air fills us space. (b) Air has weight. 3. Air contains water vapour, dust particles, germs, smoke, etc. 4. Plants keep the air fresh and clean, therefore, we must grow more and more plants to purify the air. 5. No, burning is not possible without air.

CHAPTER I2 : FORMS OF WATER

A. 1. (b) 2. (c) 3. (c) 4. (a) 5. (a) **B.** 1. form, water vapour, water, ice, melt. **C.** 1. The process of change of water into water vapour on heating is called evaporation. 2. The process of water vapour changing into water droplets on cooling is called condensation. 3. The process of change of ice into water is called melting. 4. The process of change of water into ice is called freezing. **D.** 1. False 2. False 3. True 4. False 5. False **E.** 1. The three states of water are solid, liquid and gas. 2. Water cycle is responsible for rains and maintains the level of water on earth. 4. The change of water vapour into water on cooling is called condensation. 5. The change of water into water vapour on heating is called evaporation.

CHAPTER I3 : WATER AND ITS USES

A. 1. (a) 2. (a) 3. (c) 4. (a) 5. (a) **B.** 1. Rain 2. rain 3. filtering 4. diseases 5. freezing **C.** 1. water 2. Groundwater 3. Pacific ocean 4. Ganga river **D.** Do it yourself. **E.** 1. We need water to drink, cook, bathe, wash clothes and so on. 2. The water found on the surface of the earth is called surface water whereas the water found under the ground is called ground water. 3. We should drink clean water to protect ourselves from diseases. 4. (a) Turn off the taps after using them. (b) Get leaking taps and pipes repaired. (c) Do not let the tap run when you brush your teeth. (d) Water the plants with the water left in your water bottles. 5. Animals need water to drink and bathe.

CHAPTER I4 : WEATHER

A. 1. (a) 2. (c) 3. (b) 4. (c) 5. (b) **B.** 1. winds 2. windy 3. storm 4. storm 5. different, different **C.** 1. True 2. True 3. True 4. True 5. False **D.** 1. Rainy day 2. Rainy day 32. Hot day 4. Cold day **E.** 1. The change in weather is caused by the wind, sun, clouds and rain. 2. People like ice-creams, cold drinks, etc on a hot day. 3. People make a fire on a cold day to keep themselves warm. 4. When it rains, it is called a rainy day. On a rainy day, the sky is overcast with clouds.

CHAPTER 15 : WIND

A. 1. (c) 2. (b) 3. (c) **B.** 1. wind 2. gale 3. storm 4. direction 5. force **C.** 1. Aeroplanes 2. Hot-air balloons 3. Windmill **D.** 1. False 2. True 3. True 4. True 5. False **E.** 1. Moving air is called wind. 2. Storms can cause damage of trees and animals. 3. Wind helps the blades of a windmill to turn. Wind helps a hot-air balloon to move up. It helps an aeroplane to fly. It helps clothes to dry. 4. Soft moving air is called breeze. 5. Weathercock tells us the direction in which the wind is blowing.



Start-Up Science-3

UNIT-I : ALL ABOUT ME

CHAPTER I : LIVING AND NON-LIVING

A. 1. (c) 2. (b) 3. (c) 4. (c) 5. (a) **B.** 1. plant parts; seeds 2. girls 3. Touch-me-not 4. Sunflower 5. human **C.** 1. False 2. True 3. True 4. True 5. True **D.** (c) 2. (d) 3. (a) 4. (e) 5. (b) **E.** Living things—Humans, plants and animals. Non-living things— Bat, book, table **F.** 1. Things like plants, animals, birds, insects, rocks, air, water, etc., are given by nature are called natural things whereas things which are created by humans like buildings, tables, roads, etc. are known as man-made things. 2. All living things produce more of their own kind. This is called reproduction. Animals reproduce by laying eggs or giving birth to babies. 3. Most of the animals feel things around them through their sense organs like eyes, ears, nose, skin and tongue. 4. (a) Plant as many trees as you can. (b) Do not waste paper. It will automatically increase deforestation. 5. Green plants prepare their own food using water, carbon dioxide, chlorophyll and sunlight.

CHAPTER 2 : HUMAN BODY—A LIVING MACHINE

A. 1. (b) 2. (c) 3. (a) 4. (b) 5. (b) **B.** 1. organ system 2. master organ 3. spinal cord 4. 206 5. skeletal **C.** 1. True 2. True 3. False 4. True 5. False **D.** 1. Brain 2. Lungs 3. Veins 4. Heart 5. Kidney **E.** 1. Circulatory System 2. Nervous System 3. Skeletal System 4. Digestive System 5. Muscular System **F.** 1. Our body is made up of many parts and organs. 2. The Nervous system consists of brain, spinal cord and nerves. The brain is the master organ of body. 3. The blood supplies food and oxygen to all body parts and brings back carbon dioxide and waste. 4. Respiratory system consists of nose, windpipe and lungs. We breathe in and out from our nose. The air passes the windpipe to reach the pair of lungs in our chest. Exchange of oxygen and carbon dioxide takes place in the lungs. 5. The kidneys, lungs and skin help in removing waste from our body.

CHAPTER 3 : FOOD WE EAT

A. 1. (b) 2. (c) 3. (b) 4. (c) 5. (b) **B.** 1. energy 2. nutrients 3. milk 4. meat 5. honeybees **C.** 1. True 2. True 3. True 4. False 5. True **D.** 1. Wheat, rice 2. Cloves, turmeric 3. Mustard oil, coconut oil 4. Onion, cucumber 5. Cow, Buffalo **E.** 1. We eat food because— (a) It gives us energy to work. (b) It helps in building and repairing body tissues. (c) It provides necessary nutrients to remain healthy and fight diseases. 2. People who eat plant products and milk products are called vegetarians whereas people who eat eggs and meat along with milk and plant products are called non-vegetarians. 3. Pulses are very important for growing children as they help to build and repair damaged body parts. 4. Spices are different parts of plants, it can be seeds, fruits, flowers, leaves or even bark of the stem. They add taste, aroma and flavour to our food.

CHAPTER 4 : CLEANLINESS, HEALTH AND HYGIENE

A. 1. (c) 2. (a) 3. (c) 4. (c) 5. (a) **B.** 1. dustbin 2. clean, ironed 3. Milk 4. fat 5. health **C.** 1. Do it yourself. **D.** 1. We need to look after our body to maintain good health and fitness. 2. Dustbins should be kept covered to keep away flies and insects. 3. Disinfectant is a liquid to keep away the germs. 4. We should play outdoor games because it makes our heart beat faster which increase the flow of blood in all parts. 5. We need rest after working for long hours because it relaxes our body. 6. Jumping, Yoga, Skipping and Martial art.

UNIT-II : FLORA AND FAUNA

CHAPTER 5 : PLANTS IN OUR SURROUNDINGS

A. 1. (b) 2. (c) 3. (b) 4. (a) 5. (a) **B.** 1. roots 2. stem 3. flower 4. flower 5. leaves **C.** 1. potato, onion 2. carrot, radish 3. spinach, mint 4. oxygen, carbon dioxide 5. Papaya, watermelon **D.** 1. True 2. True 3. False 4. True 5. False **E.** 1. Leaves use water and carbon dioxide in the presence of sunlight and chlorophyll to prepare sugar. This process of making food is called photosynthesis. 2. (a) Stem supports branches, leaves, flowers and fruits. (b) It carries water and minerals from the roots to leaves. 3. Tap roots are long thick tap like roots that grow downwards in the

soil whereas fibrous roots are made of many small roots growing out in all directions from the base of the stem. 4. Spinach, lettuce, mint, coriander, etc are the leaves that we eat. 5. The roots are found under the ground. They hold the plant in the soil firmly.

CHAPTER 6 : EATING HABITS OF ANIMALS

A. 1. (c) 2. (a) 3. (a) 4. (a) 5. (a) **B.** 1. Bear 2. Frog 3. Honeybee 4. Plants 5. Frog **C.** 1. Buffalo 2. Butterfly 3. Crow 4. dog 5. elephant **D.** 1. Do it yourself. **E.** 1. True 2. False 3. True 4. True 5. False **F.** 1. **Herbivores** are the animals which eat only plants and its parts. **Carnivores** are the animals which eat flesh of other animals. **Omnivores** are the animals which eat both plant and flesh of other animals. 2. Cud-chewing animals first swallow the plant parts quickly. Later on, they bring the food back into their mouth to chew it properly and swallow. This is known as chewing the cud. 3. Butterflies and honeybees have tube like tongue to suck their liquid food. 4. A food chain shows that all living things are dependent on each other for their food and for their food requirements. It shows that all living things get their food by eating other living things. This is like a chain that plants and animals form. It is called a food chain. 5. Animals need food for life. It gives them energy to work and play.

CHAPTER 7 : BIRDS OUR FLYING FRIENDS

A. 1. (b) 2. (c) 3. (c) 4. (c) 5. (a) 6. (b) **B.** Do it yourself. **C.** 1. beautiful 2. streamlined 3. feathers 4. down 5. teeth 6. woodpecker **D.** 1. Eagle, Vulture 2. Ostrich, emu 32. Cranes, Herons 4. Crow, Sparrow 5. Duck, Swan **E.** 1. True 2. True 3. True 4. True 5. True 6. False **F.** 1. (f) 2. (e) 3. (a) 4. (b) 5. (c) 6. (d) **G.** 1. Birds have hollow bones filled with air. It makes their body light in weight and helps them to fly easily. 2. Birds use their beaks to pick up food and eat. The shape of a bird's beak is suited to the type of food they eat. 3. Preying birds like eagles and vultures have sharp and strong claws called talons to hold the small preys while flying. 4. The mother bird lays the eggs sitting on them to keep them warm till the chicks are fully developed. They are well taken

care by their parents till they learn how to fly and protect themselves from their enemies. 5. Grain-eating birds have short, hard and horny beak. 6. Birds build nests to lay their eggs and to protect their eggs and chicks from bad weather and enemies.

CHAPTER 8 : COMMON INSECTS

A. 1. (b) 2. (a) 3. (c) 4. (a) 5. (a) **B.** 1. Earthworm, centipedes 2. Honeybee, silkworm 3. Malaria, dengue 4. Diarrhoea, dysentery **C.** 1. antennae 2. different 3. special 4. Honeybees 5. anthills **D.** 1. True 2. False 3. True 4. True 5. False **E.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **F.** 1. Insects have six legs. They have soft boneless bodies. Their body is divided into three parts— head, thorax and abdomen. 2. We should keep our food items covered because houseflies feed on garbage, waste food and human wastes. They pick up germs on their legs and transfer them to food on which they sit. Each such infected foods can cause diarrhoea, dysentery, cholera, etc. 3. (a) We get honey from honeybees. (b) We get silk from silkworm. 4. Worms are long creatures with tube like bodies and no bones. They have a flat head and segmented body which helps them in movements. For example— earthworm, centipedes. 5. Butterfly and bumble bee help in the process of pollination.

UNIT-III : NATURE AROUND US

CHAPTER 9 : WATER

A. 1. (b) 2. (a) 3. (c) 4. (c) 5. (a) **B.** 1. It pollutes the water bodies. 2. It happens because of condensation. 3. As it will help to save water. 4. Sunlight helps in the process of evaporation. **C.** 1. ice 2. three 3. light 4. clouds 5. three-fourth **D.** 1. False 2. True 3. True 4. True 5. True **E.** 1. (d) 2. (f) 3. (a) 4. (c) 5. (b) 6. (e) **F.** 1. One form of water changes to another form by heating or cooling. 2. There is shortage of drinking water because most of the water on earth is salty and marine which is unfit for human use. 3. The contamination of water by human activities is called water pollution. 4. (a) Repair all leaking taps and pipes in the house. (b) Keep the tap closed while brushing teeth, shaving or washing clothes. (c) Use a bucket and mug to take bath in place of shower. 5. Water gets polluted by human activities such as bathing,

washing clothes, throwing domestic and industrial wastes in rivers, etc.

CHAPTER 10 : MATTER AND ITS FORMS

A. 1. (b) 2. (a) 3. (a) 4. (c) 5. (a) **B.** 1. natural things 2. space 3. shape 4. three 5. mixture **C.** 1. False 2. True 3. True 4. True **D.** 1. Liquid 2. Liquid 3. Solid 4. Solid 5. Gas 6. Gas **E.** 1. Rubber 2. Wood 3. Wool 4. Ice 5. Metal 6. Wood **F.** 1. One common property of all materials is that they occupy space. 2. Solids have a definite shape whereas liquids do not have a definite shape. 3. The different forms of matter can be changed from one form to another on heating or cooling. 4. The process in which a liquid turns into gas on heating is called evaporation whereas the process in which a gas turns into a liquid on cooling is called condensation. 5. The things given to us by nature are called natural things whereas the things created by man are called man-made things.

G. 1. Book, Stone 2. Water, Juice 3. Oxygen, Carbon dioxide 4. Ice

UNIT-IV : OUR ENVIRONMENT

CHAPTER II : LIGHT AND FORCE

A. 1. (c) 2. (b) 3. (c) 4. (b) 5. (a) **B.** 1. energy 2. straight 3. muscular 4. mechanical 5. artificial **C.** 1. Mechanical force, muscular force, muscular force, muscular force **D.** 1. True 2. True 3. True 4. True 5. False **E.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **F.** 1. Electric bulbs, tubelights and lamps are artificial sources of light. 2. Luminous objects are those which emit light of their own such as sun, stars, etc. Non-luminous objects are those which do not have their own light such as moon, bulb, etc. 3. Force is a push or pull. We use force to walk, to lift any object, to throw anything to move any object from its place, etc. 4. Force applied by a machine is called mechanical force. For example- Force applied by bulldozer to move the soil. 5. The force applied by our muscles to carry out all our activities is called muscular force. We apply muscular force to lift a box, ride a cycle, swim, walk, etc.

CHAPTER 12 : SOIL

A. 1. (a) 2. (c) 3. (b) 4. (a) 5. (b) **B.** 1. Soil 2. Rocks 3. Loamy 4. Subsoil 5. Clayey soil **C.** 1. True 2. True 3. True 4. False 5. False **D.** 1. (c) 2. (e)

3. (a) 4. (b) 5. (f) 6. (d) **E.** 1. Ground level, Topsoil, Subsoil, Bedrock. 2. Sandy soil, Clayey soil, Loamy soil. 3. Beetles, Bugs, Snails. 4. Lavender, rosemary 5. Beaches, deserts. **F.** 1. Soil is made up of many things like tiny bits of rocks, air water and remains of dead plants and animals. 2. The sun heated up the rocks and rains cooled them. This process of heating and cooling over thousands of years broke down the big rocks into smaller rocks which further continued to break down and formed tiny pieces of soil. 3. (a) Sandy soil— Very few plants like bajra can grow in this type of soil. (b) Clayey soil— It is very useful for the potters to make toys, pots, diyas and handicrafts. (c) Loamy soil— It is best suited for the growth of crops. 4. The remains of dead plants and animals decompose and mix with the soil to form humus which is very good for the soil because it makes the soil fertile.

UNIT-V : OUR UNIVERSE

CHAPTER I3 : HEAVENLY BODIES

A. 1. (b) 2. (b) 3. (c) 4. (b) 5. (b) **B.** 1. revolution 2. satellite 3. constellation 4. sun 5. sun **C.** 1. Earth 2. orbit 3. equator 4. venus 5. constellation **D.** 1. The movement of the earth on its axis is called rotation. It causes days and nights. The movement of earth around the sun in a fixed orbit is called revolution. It causes seasons. 2. Stars are actually huge balls of hot gases which give out heat and light. Groups of stars are called constellations. **E.** 1. True 2. True 3. True 4. True 5. False **F.** 1. The sun and the eight planets around it form the solar system. 2. Ferdinand Magellan, a portuguese sailor sailed in ship from one point of the earth and returned back to it many years later without turning around. This proved that the earth is round in shape. 3. Days and nights are formed by the rotation of earth on its axis. 4. Many groups of stars which appear to form fixed patterns or shapes in the sky are called constellation. 5. The movement of earth on its axis is called rotation.

CHAPTER I4 : SPACE TRAVELLERS

A. 1. (b) 2. (a) 3. (b) 4. (b) 5. (b) **B.** 1. space 2. gravity 3. Yuri Gagarin 4. six times less 5. Earth **C.** 1. False 2. True 3. False 4. False 5. True **D.** 1. Yuri Gagarin of Russia was the first human to go into space. 2. Rakesh

Sharma is the only Indian citizen to travel in space. 3. Kalpana Chawla was the first woman of Indian origin to fly to space. 4. Edwin Aldrin became the second person to walk on the moon. 5. Neil Armstrong became the first human to step on the moon's surface. 6. Sunita Williams has made a world record by being in space for maximum time. **E.** 1. The earth is surrounded by a layer of air. Outside this layer of air is space. 2. Yuri Gagarin of Russia. 3. The earth has a power of attraction with which it pulls objects towards itself. This power is called the earth's gravitational force or gravity. 4. Life is not possible on the moon because there is no air and water on the moon. 5. Neil Armstrong said, "That's a small step for man, but giant leap for mankind".



Start-Up Science-4

UNIT-I : FOOD

CHAPTER I : FOOD WE EAT

A. 1. (b) 2. (a) 3. (b) 4. (c) 5. (a) **B.** 1. Butter, Ghee 2. Potato, Rice 3. Pulses, Eggs 4. Fruits, Vegetables **C.** 1. Energy 2. Flour 3. More 4. Cooking 5. Uncooked **D.** 1. True 2. False 3. False 4. True 5. False **E.** Boiling, Roasting, Frying, Steaming, Baking **F.** 1. We need food because it gives us energy to work, play and live. It keeps us healthy and strong too. 2. **Food is cooked to :** (a) make it edible and tasty. (b) make it soft, easy to chew and digest. (c) kill harmful germs present in food. 3. We need to store food carefully to keep it safe from many things like pests, microbes and moisture. 4. **The different methods of cooking food are—** (a) **Boiling—** Boiling means to cook in water (b) **Roasting—** It is a method of cooking directly over fire. (c) **Frying—** It means cooking food items in hot boiling oil. (d) **Steaming—** It means to cook food with the help of steam or heat in the cooker. (e) **Baking—** It is done in an oven or microwave at an accurate and particular temperature. 5. Preservation is a process by which food is protected from getting spoiled, so that it can be used later. Some of the ways to preserve food are : (a) Salting (b) Pickling (c) Sweetening **G.** 1. Puri, Pakora 2. Cake, Biscuits 3. Chicken, Popcorn 4. Mangoes, Chillies 5. Milk

CHAPTER 2 : TEETH TO CHEW

A. 1. (b) 2. (c) 3. (a) 4. (c) 5. (a) **B.** 1. enamel 2. dental caries 3. plaque 4. pulp 5. fresh fruits **C.** 1. True 2. True 3. False 4. True 5. False

D. 1.	Incisors	Canines	Permolars	Molars
Lower Jaw	4	4	4	6
Upper Jaw	4	4	4	6

E. 1. Teeth give proper shape to our face and help us to speak properly and clearly. They also help us to chew food nicely so that it gets digested completely. 2. There are two sets of teeth which we get in our lifetime : (a) **Temporary teeth :** When a baby is about six months old, primary teeth begin to appear. They are also called milk teeth. When the baby

is about 2 years old, he has total of 20 milk teeth. They are also called temporary teeth because they do not last long. (b) **Permanent teeth :** There are 32 permanent teeth : 16 in the upper jaw and 16 in the lower jaw. They last for our lifetime. If broken, they cannot be replaced. 3. There are four types of teeth : (a) **Incisors** : They are used for cutting or slicing the food. (b) **Canines** : They are used for tearing the food. (c) **Premolars** : They are used to chew and grind the food into a paste. (d) **Molars** : They are used for chewing and crushing food. 4. (a) Brush your teeth correctly and regularly twice a day. (b) Avoid eating too hot, too cold and too sweet foods. (c) Eat lots of fresh fruits and salad for healthy teeth. (d) Massage your gums daily for better blood circulation. 5. (a) Enamel is the outermost white part of the tooth. It is said to be the hardest part of our body. (b) Dentine lies below the enamel. It is also very hard. (c) Pulp is the soft innermost part of teeth. It has blood vessels and nerves.

CHAPTER 3 : DIGESTIVE AND EXCRETORY SYSTEM

A. 1. (b) 2. (c) 3. (a) 4. (c) **B.** 1. digestive organs 2. Digestion 3. Saliva 4. bile **C.** 1. True 2. False 3. True 4. True **D.** 3, 2, 1, 4 **E.** 1. The process of breaking down the food into simpler forms, so that they can be used by the body is called digestion. 2. Small intestine— A digestive juice called bile is poured into the small intestine from the liver which digest fats. The process of digestion is completed and ends in the small intestine. The nutrients are absorbed by the blood vessels in the walls of small intestine. **Large intestine**— The waste food that is not digested in the small intestine comes into the large intestine faeces. It absorbs water from the food and form faeces. 3. Kidneys filter blood to form urine. Urine is carried from the kidneys to tube like structures called ureters. This urine is stored in urinary bladder and is passed out of the body through the urethra. 4. The process by which wastes are removed from our body is called excretion. Urine, sweat and carbon dioxide are the different wastes of our body.

UNIT-II : MATERIALS

CHAPTER 4 : SAFETY AND FIRST-AID

A. 1. (b) 2. (a) 3. (c) 4. (a) 5. (a) **B.** 1. fire 2. stairs 3. wound 4. calamine 5. Prevention **C.** 1. False 2. True 3. False 4. True 5. False **D.** 1. (c) 2. (a) 3. (e) 4. (b) 5. (d) **E.** 1. Calamine lotion can be applied on insect bites to prevent itching. 2. Never wear synthetic clothes while burning crackers because they catch fire easily. 3. Never run when your clothes catch fire because it will exaggerate the level of fire. **F.** 1. Accidents occur due to carelessness. 2. Do it yourself. 3. Accidents can be avoided if people follow safety rules at home, at school and on the road. 4. If a person faints, lie him on flat surface with his head low. This helps in supply of extra blood to the brain. Allow fresh air to come in. Keep quiet and let him rest. **5.** (a) Place ice over the affected spot with lime water and apply a paste of baking soda and cold cream to give relief. (b) Place ice over the affected spot. It will also give some relief. (C) A Compress wetted with ammonia water also gives relief. (d) Apply calamine lotion if there is itching.

CHAPTER 5 : CLOTHES AND FABRICS

A. 1. (b) 2. (c) 3. (b) 4. (c) 5. (c) **B.** 1. Clean 2. care of 3. warm 4. antiseptic 5. silkworm **C.** 1. False 2. False 3. True 4. True 5. True **D.** 1. (c) 2. (a) 3. (d) 4. (b) **E.** 1. We wear clothes because they protect our body from dust, heat, cold, rain, germs and insect bites. 2. We wear cotton clothes in summer because they keep the body cool. They also absorb sweat easily and do not irritate the skin. 3. We wear woollen clothes in winter because they keep the body warm and do not allow body heat to escape. 4. Cotton is a natural fibre. We get cotton from the cotton plant. Nylon is a synthetic fibre. It is made by man. 5. We must take special care of our silk and woollen clothes. Once the season is over, the clothes must be duly dried in the sun or they must be dry cleaned before being packed.

UNIT-III : THE WORLD OF LIVING

CHAPTER 6 : ADAPTATIONS IN ANIMALS

A. 1. (a) 2. (c) 3. (a) 4. (a) 5. (a) **B.** 1. wide 2. Terrestrial 3. Aquatic 4. Start-Up Science 1 to 5

Aquatic 5. Amphibians **C.** 1. False 2. True 3. True 4. False 5. True **D.** 1. Birds, insects 2. Hyena, vulture 3. Licea Fleas 4. Siberian crane, Arctic tern 5. Fish, insect **E.** 1. Polar bears have thick skin to keep them warm. 2. Yaks have a layer of fat under their thick skin to keep their body warm. This layer of fat provides them with energy during the extreme winters, when food is unavailable. 3. Camels have broad, padded feet to walk easily on sand. Their bodies are adapted to store food and water for a long time. 4. Birds have hollow bones and streamlined bodies which help them to fly. 5. Fish have gills to breathe in water and a streamlined body which helps them to swim. **F.** 1. Elephant 2. Grasshopper 3. Bat **G.** 1. All living beings develop special body structures or abilities which help them to survive in their surroundings. These abilities are called adaptations. 2. Carnivores have special adapted sharp teeth (canines) to tear the flesh. Eagles and vultures have sharp beaks and strong claws to tear their prey. 3. Camouflage is the ability of an animal to change its colour, to blend or merge with its surroundings so that it becomes difficult for its enemies to spot it. For example-chameleon, grasshopper, etc. 4. Many animals survive in the extreme winter season by going into a kind of deep sleep called hibernation. For example-polar bear, lizard, snakes, frogs, etc. 5. The process by which animals reproduce their young ones of their own kind is called reproduction. Animals reproduction by two ways— (a) By laying eggs— Birds, fish, insects, turtles, etc. (b) By giving birth to young ones— mammals, dolphins, whale, etc.

CHAPTER 7 : ADAPTATIONS IN PLANTS

A. 1. (b) 2. (c) 3. (c) 4. (b) 5. (a) **B.** 1. Terrestrial 2. Deciduous 3. Spring 4. Cacti 5. Duckweed **C.** 1. False 2. False 3. True 4. True 5. True **D.** 1. Pine, cedar 2. Pondweed 3. Cactus, Acacia 4. Mangroves **E.** 1. Desert plants have tiny leaves or spines, so that there is less evaporation through the stomata on hot sunny days. 2. Mountainous trees have cones to allow snow to slide off easily from the tree and prevent damage by snow. 3. Roses have thorns to discourage animals from eating them. 4. Mangrove trees have breathing roots to help the plants breathe in

waterlogged soil. **F.** 1. The changes or characteristics which enable plant to live in their environment are called adaptations. Adaptation has enabled plants to survive in various habitats. 2. Desert plants have tiny leaves or spines, so that there is less evaporation through the stomata on hot sunny days. They have roots which spread out deep under the ground in search of water. 3. Insectivorous plants are green plants which grow in soil. These are poor in minerals. They fulfil their requirement of nitrogen by eating insects. 4. The process by which green plants use sunlight, water and carbon dioxide to make food is called photosynthesis. Chlorophyll, carbon dioxide, sunlight and water are needed for photosynthesis. 5. Cactus grow in deserts because it has a flat green stem to store water and prepare food by photosynthesis.

UNIT-IV : MATTER AND MOTION

CHAPTER 8 : FORCE

A. 1. (a) 2. (a) 3. (c) 4. (b) 5. (a) **B.** 1. Rough 2. Muscular 3. Gravitational 4. Opposite 5. Force **C.** 1. Astronauts float in space because there is no gravitational force in space. 2. We rub our palms to warm them because the friction between them generates heat. 3. Footballers have spikes under their shoes to prevent the players from slipping. **D.** 1. False 2. True 3. False 4. False 5. False **E.** 1. A push or a pull that can change the movement of an object is called force. 2. A force can make an object move. (a) A force can make an object move. (b) A force can speed up a moving object. (c) A force can slow down a moving object. (d) A force can change the direction of a moving object. (e) A force can change the shape of an object. 3. Whenever we throw any object high into the air, it comes back on earth. This is because earth has a very special force to attract the objects towards it, known as the gravitational force. 4. When two surfaces are in contact, they rub against each other and try to stop the movement of the other. This is called the frictional force. 5. (a) A force can make an object. (b) A force can speed up a moving object. (c) A force can change the direction of a moving object. (d) A force can slow down a moving object. (e) A force can change the shape of an object.

CHAPTER 9 : LIGHT

A. 1. (b) 2. (c) 3. (c) 4. (a) 5. (a) **B.** 1. Reflection 2. transparent 3. translucent 4. long 5. path **C.** 1. Sun, Stars 2. Reflection 3. Shadow 4. Bulb **D.** 1. False 2. False 3. False 4. False 5. True **E.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **F.** 1. The sun is the main source of light during daytime. It gives us heat and light. 2. Shadows are formed when the path of light is blocked by anything. shadows are always formed on the opposite side of the light. 3. The objects which allow light to pass through them are called transparent objects whereas the objects which do not allow light to pass through them are called opaque objects. 4. CFL's are energy-saving light bulbs, which last longer and use far less energy than traditional light bulbs. 5. Luminous objects are ones which emit light on their own, for example, all stars including sun are luminous objects. Non luminous objects cannot emit any light on their own, for example, moon, at it shines with the help of sunlight. **G.** 1. Sun-L 2. Candle-L 3. Bulb-L 4. Torch-L

CHAPTER 10 : MATTER AND SOLUTIONS

A. 1. (a) 2. (a) 3. (c) 4. (c) **B.** 1. Molecules 2. Matter 3. Water vapour 4. Solvent **C.** 1. False 2. False 3. True 4. True **D.** 1. Ice-cream will melt. 2. Juice will freeze. 3. Water will evaporate in the sun. **E.** 1. There are two basic properties of matter : (a) Matter occupies space. (b) Matter has weight. 2. **Solids :** Molecules in soild are very tightly packed. They are very close to each other. **Liquids :** Molecules in liquid are loosely packed. Liquids do not have a fixed shape. **Gases :** Molecules of gases are far apart. They are very loosely packed and hence gases have no fixed shape. 3. Matter can change from one state to another on either heating or cooling. 4. **Solute :** The solid substance which is being dissolved in a liquid is called solute. **Solvent :** The liquid in which the solute is dissolved is called a solvent. **Solution :** When a solute dissolve in a solvent, a solution is formed.

CHAPTER II : MEASUREMENT

A. 1. (a) 2. (c) 3. (c) 4. (a) 5. (a) **B.** 1. measurement 2. length 3. metre 4. grams 5. kilometres **C.** 1. True 2. False 3. True 4. False 5. True **D.** 1. (c)

2. (a) 3. (e) 4. (b) 5. (d) **E.** 1. We need standard units of measurement to make our judgement more reliable and accurate. 2. The instruments used to measure the capacity are measuring can, measuring cylinder and measuring flask. 3. Temperature is the degree of hotness of an object. We use a thermometer to measure the temperature of a body. 4. Shorter periods of time are measured in seconds and minutes while longer periods are measured in hours.

60 seconds = 1 minute

60 minutes = 1 hour

24 hours = 1 day

30 or 31 days = 1 month

5. Rain guage is a special container with markings used to measure the rainfall at a place.

UNIT-V : OUR SURROUNDINGS

CHAPTER I2 : SOIL

A. 1. (a) 2. (b) 3. (b) 4. (c) **B.** 1. broken, bits 2. soil, earth 3. three 4. humus 5. minerals **C.** 1. True 2. False 3. True 4. True 5. True **D.** 1. Soil forms the topmost layer of the earth's crust. Soil is made up of small bits of rocks, dead plants and animals, water and some air. 2. When rocks are exposed to high and low temperature, they get broken into bits. These broken bits are further broken down by rain water, when ice melts from mountain tops, a river is formed. This takes along with it bits of rocks. These bits of rocks get further broken up to form soil. 3. The different types of soil are— (a) Gravel— It contains small stones and does not keep water well. It has gaps between the stones that allow water to pass easily. (b) Sand— It is dry and light. In this soil, water passes easily. (c) Clay— In clayey soil, water does not pass freely. 4. Taking away the top layer of the soil by wind, water, etc., is called soil erosion. It is also caused by cutting down of trees. 5. (a) A large number of plants should be planted to replace the ones that are cut down. (b) Crop rotation should be followed. (c) Dams should be built across rivers to check floods.

CHAPTER I3 : CARBON DIOXIDE AND OXYGEN

A. 1. (b) 2. (c) 3. (b) 4. (b) **B.** 1. colourless, odourless 2. dissolve 3. baking soda 4. carbon dioxide 5. oxygen **C.** 1. (c) 2. (d) 3. (a) 4. (b) **D.** 1. Carbon dioxide is one of the most useful gas. It is produced when any form of carbon or almost any carbon compound is burned in an excess of oxygen. 2. (a) Carbon dioxide is a colourless and odourless gas. (b) Carbon dioxide does not support burning. 3. Carbon dioxide is used in fire extinguishers, for inflating life jackets, blasting coal, forming rubber, plastics, making aerated soft drinks and also plants use this gas to make their food in the presence of sunlight. 4. Oxygen is a very important gas. All living things need oxygen to live. Oxygen burns food in the body to release energy for growth and movement. 5. (a) Oxygen is a colourless, odourless and tasteless gas. (b) It is denser than air and is also soluble in water.

CHAPTER I4 : AIR, WATER AND WEATHER

A. 1. (a) 2. (c) 3. (a) 4. (a) 5. (a) **B.** 1. Decantation 2. Snow 3. Faster 4. sea breeze 5. blue planet **C.** 1. Evaporation 2. Condensation 3. Dew 4. Evaporation 5. Evaporation **D.** 1. three-fourth part of earth is covered with water. 2. water has a higher heat capacity than soil and rock. 3. its surface area becomes large. 4. it does not entirely purify it. **E.** 1. The day to day condition of the atmosphere of a place at any given time is called weather. The weather of a place depends on the following factors : (a) Wind (b) Air pressure (c) Clouds (d) Temperature (e) Moisture 2.

Land breeze— The air above the seawater is warmer than the air above the land. Warm air rises and cool air from the land rushes towards the sea. This is called land breeze. **Sea breeze—** The hot air from the land rises and the cool air from the sea rushes to take its place. So, the wind blows from the sea towards the land. This is called sea breeze. 3. The process by which water changes into water vapour on heating is called evaporation. The factors that affect evaporation are— (a) High temperature or heat of the sun. (b) When the exposed surface is larger. 4. The different forms of condensation in nature are— (a) Rain (b) Dew (c) Fog (d) Frost (e) Snow 5. Dew drops are found on plants leaves,

window panes on cold winter mornings when water vapour condenses whereas fog is formed in winters when water vapour condenses on the dust particles close to the ground.

UNIT-VI : NATURAL PHENOMENON

CHAPTER 15 : OUR PLANET EARTH

A. 1. (a) 2. (c) 3. (c) 4. (a) 5. (a) **B.** 1. three-fourth 2. rotation 3. revolution 4. satellite 5. constellations **C.** 1. The sun is a huge ball of fire. It is the star nearest to the earth. It is the main source of heat and light for all the planets in the solar system. 2. The moon is round like the earth. It moves around the earth. It is the natural satellite of the earth. 3. When we do not see the top face of the moon at all. It is called the New Moon. 4. The groups of stars forming patterns are called constellations. **D.** 1. False 2. True 3. True 4. False 5. True **E.** 1. People have sailed around the earth. They started from one place and kept on sailing and finally they came back to the same place where they had started. It is possible only if the Earth is round. 2. (a) When a ship sail away from us, we notice that first the lower part of the ship disappears, then the middle part and finally the top part disappears. It can happen only on round surface. (b) The people who have gone into space have taken photographs of the earth. The photographs also show that the earth is round in shape. 3. The spinning of earth on its axis is called rotation of earth. It causes days and nights. 4. The movement of the earth around the sun is known as revolution. It causes seasons. 5. Every night the moon appears to change its shape. However, the moon does not really change its shape. The phases of the moon are the shapes of moon's sunlit portion as seen from earth.

CHAPTER 16 : OUR SOLAR SYSTEM

A. 1. (b) 2. (c) 3. (c) 4. (a) 5. (a) **B.** Do it yourself. **C.** 1. natural 2. 63 3. Venus 4. gases 5. two **D.** 1. True 2. True 3. True 4. True 5. True **E.** 1. Venus 2. Earth 3. Sun 4. Saptarishi **F.** 1. Stars are huge balls of burning gases which emit heat and light whereas the heavenly bodies which revolve around the sun are called planets. 2. The different layers of earth are— (a) **Crust**— It is the outer solid surface of the earth with

different landforms and water bodies. (b) **Mantle**— Mantle is the layer below the crust made of thick layer of molten rocks and mantle. (c) **Core**— Core is the hottest and innermost part of the earth made of molten metals. 3. The spinning of earth on its axis is called rotation whereas the movement of earth around the sun in its orbit is called revolution. 4. The axis of the earth is an imaginary line which joins north pole to south pole. 5. There are eight planets in the solar system namely Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

CHAPTER 17 : OUR ENVIRONMENT

A. 1. (c) 2. (c) 3. (c) 4. (b) 5. (a) **B.** 1. 3R's 2. Reduce 3. Reuse 4. Factories 5. Trees **C.** 1. True 2. False 3. True 4. True 5. False **D.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **E.** 1. Our environment is made up of both living and non-living things. The living things include flora (plants), fauna (animals), human beings and micro-organisms. They are the biotic components of the environment. Various non-living things like soil, air and water are the abiotic components of the environment. 2. We can control air pollution by following these simple steps— (a) Walk for short distances or use bicycle. (b) Use public transports like buses, local trains, metro, etc. (c) Encourage car pooling for travelling. (d) Plant as many trees as possible. 3. Drinking polluted water causes waterborne diseases like typhoid, jaundice, diarrhoea. Irrigation of crops by polluted water affects the quality of crops. It affects the life of aquatic plants and animals. 4. We can do our bit to save the environment by following the 3R's. They are Reduce, Reuse and Recycle. (a) **Reuse**— It means to find new ways to use things before throwing them away. (b) **Reduce**— It means to use less. We should buy things only if we need them. (c) **Recycle**— Recycle means when you try to recycle things in one way or the other. 5. Trees purify the air by absorbing carbon dioxide and releasing oxygen. They help in making rain. Their roots hold the soil firmly and prevent it from being washed away in rains and floods.



Start-Up Science-5

UNIT-I : LIVING WORLD

CHAPTER I : REPRODUCTION IN PLANTS

A. 1. (b) 2. (a) 3. (b) 4. (c) 5. (a) **B.** 1. seeds 2. dispersal agents 3. agricultural 4. agriculture 5. wealth **B.** 1. False 2. True 3. True 4. True 5. True **D.** 1. (e) 2. (c) 3. (b) 4. (d) 5. (a) **E.** 1. Germination is the process of the conversion of a seed into a seedling under favourable conditions of air, water and sunlight. 2. The transfer of pollen grains from the male part (anther) to the female part (stigma) is known as pollination. 3. The crops which grow in winter season are called rabi crops. 4. The process of scattering of seeds away from the mother plant is called dispersal of seeds. **F.** 1. Rice, jute 2. Gram, peas 3. Onion, Potato 4. Cocunut, Palm 5. Maple, cotton **G.** 1. The crops which grow in winter season are called rabi crops. For example, gram, peas, wheat, etc. The crops which grow in summer season are called kharif crops. For example, Rice, jute, pulses, etc. 2. Seed coat is the hard outer covering which protects the seeds. The part of the seeds or embryo of the plant is called seed leaves. **H.** 1. The process of the conversion of a seed into a seedling under favourable conditions of air, water and sunlight. 2. The process of scattering of seeds away from the mother plant is called dispersal of seeds. It is very essential for seeds to be dispersed over a wider area to get favourable conditons for growth. 3. A flower has four important parts : (a) **Sepals**— They are the green leafy layers which protect the flower in the bud stage. (b) **Petals**— They are the bright colourful part with a sweet smell that attracts insects. (c) **Stamens**— They are the male parts of the flowers. (d) **Pistil**— It is the female part with a sticky top called stigma. 4. The following points should be kept in mind while cultivating a crop : (a) The field should be ploughed well to make the soil loose and airy. (b) Natural manures or fertilizers must be added to enrich the soil. (c) Healthy seeds should be sown at proper intervals in a crop cycle. (d) The crops should be properly and timely irrigated. 5. Some seeds are small and light in weight and can be carried away by wind. Some seeds have wings, hair, etc. For example, maple, cotton,

dandelion, etc. They have spongy or fibrous outer coats so they can also float on water.

CHAPTER 2 : VARYING LIFESTYLES IN ANIMALS

A. 1. (c) 2. (a) 3. (a) 4. (b) 5. (a) **B.** 1. six 2. hollow 3. forelimbs 4. spiracles 5. lungs **C.** 1. True 2. True 3. True 4. False 5. True **D.** 1. Frogs, Toads 2. Fish, Birds 3. Siberian crane, Arctic tern 4. Rats, squirrels 5. Frogs, Toads **E.** 1. Because it breathes through gills in water. 2. Rodents have short incisors to nibble into fruits and seeds. 3. Because snakes have scales on the underside of their bodies to move in a curvilinear fashion on the ground. **F.** 1. Dolphin 2. Polar bear 3. Tortoise 4. Insect **G.** 1. Animals without backbone are called invertebrates whereas animals with backbone are called vertebrates. 2. Birds have light and hollow bones to make their bodies light in terms of weight. They have a pair of wings attached to powerful muscles to help them fly. They use their legs to move, walk or hop. Lizards have four short legs to move. They crawl on their bellies. 3. Animals migrate over long distances every year to breed, escape harsh climates and to find food and shelter. They return to their original places when the weather becomes favourable for survival. 4. Herbivores have sharp incisors to bite plants and flat premolars and molars to chew plant parts. Carnivores have very sharp and pointed canines to tear flesh. Omnivores have both incisors and canines along with broad, strong grinding teeth. 5. All animals eat food to grow, get energy and stay healthy. Different animals have different types of mouth parts according to the food eaten by them.

CHAPTER 3 : INTERDEPENDENCE OF PLANTS AND ANIMALS

A. 1. (a) 2. (a) 3. (a) 4. (a) **B.** 1. water 2. worms 3. plants 4. producers **C.** 1. True 2. False 3. True 4. False **D.** 1. Plants, animals 2. Air, water 3. Oxygen, carbon dioxide 4. Worms, moles **E.** 1. Our environment is made up of biotic and abiotic components. Air, water, soil and sunlight are the abiotic components while plants and animals are the biotic components. 2. (a) Plants use carbon dioxide and give out oxygen. (b) Plants need water for growth and survival. (c) Roots of plants absorb water and minerals from the soil for growth. 3. Decomposers like

bacteria and fungi help in the decay of dead plants and the minerals present in the dead and waste materials get mixed up in the soil. This makes the soil fertile for plants. 4. Green plants are called producers because they prepare their own food by the process of photosynthesis.

UNIT-II : NATURAL RESOURCES

CHAPTER 4 : ROCKS AND MINERALS

A. 1. (a) 2. (a) 3. (b) 4. (b) 5. (a) **B.** 1. metamorphic 2. Coal 3. Gold and Silver 4. Limestone 5. Pumice **C.** 1. True 2. False 3. True 4. True 5. True **D.** 1. Pumice 2. Petroleum 3. Diamond 4. Ores 5. Millions **E.** 1. Igneous rocks are formed by the cooling of lava above or just under the surface of the earth. When the hot molten rocks, known as magma, pushes itself outside the earth, it is known as lava. 2. Pumice is called lava froth with gas trapped inside. These pockets of gas make it very light in weight. It is used as a scrubber to remove rough skin from the body. 3. Coal is a fossil fuel formed from the remains of dead plants and animals that lived millions of years ago. Due to heat and pressure of rocks and soil above them, the dead remains changed into coal. 4. Fossil fuels should be used carefully because if we continue to use fossil fuels at this rate, there will be no fuel left for our future generations. 5. The different kinds of rocks are : (a) **Igneous rocks**— Igneous rocks are formed by the cooling of lava above or just under the surface of earth. (b) **Sedimentary rocks**— Sedimentary rocks are formed by the sedimentation of pieces of rocks, mud, pebbles, gravel, sand from wind, rivers or ice. (c) **Metamorphic rocks**— Metamorphic rocks are formed from igneous and sedimentary rocks that have been subjected to extreme heat and pressure.

CHAPTER 5 : SOIL EROSION AND ITS CONSERVATION

A. 1. (c) 2. (a) 3. (b) 4. (a) 5. (b) **B.** 1. Soil erosion is the process of carrying away the top fertile layer of soil by different agents like wind and water whereas the protection of soil against erosion is called soil conservation. 2. Bunds are built around farms and have high boundaries of mud which are used to divide big farms into small fields, this reducing soil erosion whereas embankments are the big

and strong structures built along the course of a river for holding the water between river banks to control nearby land from being eroded.

C. 1. soil 2. wind 3. three 4. erosion 5. humus **D.** 1. False 2. True 3. True 4. False 5. True **E.** 1. (a) Soil holds the necessary nutrients for plants to grow. (b) Soil filters the rainwater. (c) Soil regulates the discharge of excess rainwater. 2. Soil is formed by the process of breaking down of rocks due to the action of air, water, heat and micro-organisms. This process is known as weathering of rocks. It takes millions of years for rocks to change into soil. 3. Rainwater flows rapidly down the hills, thus carrying the topsoil along with it. Hill slopes of flowing water gets reduced, and the soil carried from one step gets deposited on the other one. 4. The following steps should be taken to conserve the soil : (a) Afforestation (b) Step farming (c) Embankments (d) Growing cover crops 5. The agents of soil erosion are— (a) **Wind** : It blows away the top soil in places where there is poor or no vegetation. That is because there are no roots to hold the soil firmly. (b) **Water** : Running water, flooded rivers, and heavy rains carry the soil from the plains along with them.

CHAPTER 6 : AIR AROUND US

A. 1. (c) 2. (a) 3. (a) 4. (c) 5. (a) **B.** 1. Atmosphere 2. CNG 3. level 4. gases
C. 1. False 2. True
3. True 4. True **D.** 1. Oxygen 2. Helium 3. Carbon dioxide **E.** 1. (e) 2. (d)
3. (a) 4. (b) 5. (c) **F.** 1. (a) Oxygen present in atmosphere is essential for survival of all living beings. (b) Nitrogen, being an inactive gas, keeps the process of combustion under control. (c) Carbon dioxide is an ingredient for the process of photosynthesis. 2. We do not feel the pressure of air because the air inside our body balances the air pressure outside the body. 3. The Properties of air are:- (a) Air has weight (b) Air occupies space (c) Air is needed for combustion (d) Air exerts pressure
4. The different layers of the atmosphere are— (a) Troposphere (b) Stratosphere (c) Mesosphere (d) Thermosphere (e) Exosphere

CHAPTER 7 : OUR ENVIRONMENT

A. 1. (c) 2. (c) 3. (a) 4. (a) 5. (a) **B.** 1. Use blue and green dustbins for

disposing non-biodegradable and biodegradable wastes. 2. Promote the use of solar, wind and hydraulic energy to make man less dependent on fossil fuels. It will reduce the release of carbon dioxide into the atmosphere. 3. Do not use polybags because it is non-biodegradable. 4. Walk on bicycle to nearby places because it will reduce pollution. **C.** 1. Variety 2. Balance 3. Human beings 4. Vehicles 5. steps **D.** 1. True 2. True 3. True 4. False 5. True **E.** 1. Recycle 2. Manures 3. Reuse 4. Deforestation **F.** 1. ✓ 2. ✓ 3. ✓ 4. ✗ 5. ✓ **G.** 1. The natural process of trapping the heat of the earth is called greenhouse effect. It results in the warming of the earth's atmosphere in excess. 2. Due to the excess of greenhouse gases, the atmosphere traps and sends back more heat towards the earth, which results in rise in the temperature of the earth. This is called global warming. 3. The three R's are— (a) **Reduce**— We should reduce the use as well as wastage of resources. (b) **Reuse**— It means to use an item more than once. (c) **Recycle**— It involves processing used materials into new products for preventing wastage of useful materials. 4. Compost pits are used to make manures and fertile compounds by dumping decaying biodegradable items.

CHAPTER 8 : SOILD, LIQUID AND GAS

A. 1. (a) 2. (b) 3. (a) 4. (b) **B.** 1. three 2. elements 3. compound 4. solids 5. gases **C.** 1. (a) 2. (d) 3. (b) 4. (c) **D.** 1. False 2. False 3. False 4. True 5. True **E. Solid**— sand, ice, metal, wood, cork, glass. **Liquid**— custard, milk, coffee, lemonade, water. **Gas**— Helium, oxygen, steam, air. **G.** 1. Matter is made up of tiny particles. These particles are called tiny molecules of matter. 2. Atoms are the basic building blocks of matter that makes up the objects. Book, umbrella, air, water and even we are made up of atoms. 3. An element is a substance in which all its atoms are of the same kind. A compound is matter made up of more than one kind of atom. The molecules of a compound are made up of two atoms. 4. The three states of matter are— (a) **Solids**— In solids, the molecules are compact. They have a definite shape or volume. (b) **Liquids**— In liquids, the molecules are not very compact. They have a definite volume but have no shape. (c) **Gases**— In gases, the molecules

are loosely packed. Gases have no fixed shape or volume. 5. Volume is the amount of space occupied by an object. The heaviness, lightness or thickness of a body is called its density.

UNIT-III : HUMAN BODY AND HEALTH

CHAPTER 9 : SKELETAL SYSTEM

A. 1. (b) 2. (b) 3. (a) 4. (c) 5. (a) **B.** 1. Joint 2. Skull 3. Ribcage **C.** 1. skeleton 2. calcium, phosphorus 3. ligaments 4. ribcage 5. sunlight **D.** 1. True 2. True 3. False 4. True 5. False **E.** 1. The muscles which are under our control are called voluntary muscles whereas the muscles which are not under our control are called involuntary muscles. 2. The joints which can move are called movable joints whereas the joints which cannot move are called immovable joints. **F.** 1. (a) It gives shape and support to the body. (b) It helps us to stand upright. (c) It protects the delicate internal organs. 2. Cardiac muscles are special types of muscles present in our heart. They work all the time, throughout our life, without getting tired. 3. (a) Avoid unnecessary stress to your bones, joints and skeleton; avoid poor postures. (b) Eat foods rich in calcium and proteins to keep bones and muscles healthy. (c) Exercise regularly to keep the muscles fit and strong. 4. The place where one bone joins with the other is called joint. There are four types of movable joints, as follows : (a) Hinge joint (b) Ball and socket joint (c) Pivot joint (d) Gliding joint

CHAPTER 10 : THE CIRCULATORY AND THE NERVOUS SYSTEM

A. 1. (b) 2. (b) 3. (a) 4. (b) 5. (a) **B.** 1. smell 2. feeling 3. taste 4. see 5. veins **C.** 1. True 2. True 3. True 4. False 5. False **D.** 1. Arteries 2. Brain stem 3. Motor nerves 4. Reflex actions 5. 60 to 80 **E.** 1. Sensory nerves carry messages from sense organs to the brain or spinal cord. 2. Stethoscope is an instrument that a doctor uses for listening to your breathing and heartbeat. 3. Capillaries are the smallest of blood vessels. Both arteries and veins branch off to form very fine tube called capillaries. 4. Cerebellum is an egg-shaped structure lying below the cerebrum. It is responsible for the control and co-ordination of the movements of the voluntary muscles. 5. Medulla lies at the base of the brain and is also

known as brain stem. It controls functions of involuntary muscles like breathing, heartbeat, digestion, etc. 6. The automatic and quick actions of the body are called reflex actions. These actions are controlled by the spinal cord. **F.** 1. As the heart pumps blood, a series of valves open and close tightly. These values ensure that blood flows in only one direction. 2. The contraction and relaxation of the heart muscles produces a sound or beat, known as heartbeat. 3. Blood vessels are the tubes which run throughout our body like a network. There are three types of blood vessels:- (a) Arteries (b) Veins (c) Capillaries 4. The parts of human brain are— (a) **Cerebrum**— It is the largest and main part of brain with many grooves and folds. (b) **Cerebellum**— It is an egg-shaped structure lying below the cerebrum. It is responsible for cerebrum. It is responsible for the control and co-ordination of the movement of the voluntary muscles. (c) Medulla— It controls functions of involuntary muscles like breathing, heartbeat, digestion, etc. 5. Nervous system controls all the systems of our body. It is also known as the master system of our body.

CHAPTER II : FOOD, HEALTH AND DISEASES

A. 1. (b) 2. (c) 3. (b) 4. (a) **B.** 1. Nutrients 2. Balanced diet 3. Junk food 4. healthy **C.** 1. False 2. True 3. True 4. True **D.** 1. It causes obesity. 2. It boosts the body's vitamin D supply. 3. Stagnant water is considered as a breeding place for mosquitoes which act as the carriers for several diseases such as malaria. 4. Because it can cause chicken pox to another person. **E.** 1. Nutrients are the chemical substances present in our diet which are essential for our healthy growth and development of our body. The nutrients present in our food are— (a) Carbohydrates (b) Fats (c) Proteins (d) Vitamins and Minerals 2. A diet that includes a variety of food containing the right amount of each nutrient is called balanced diet. A balanced diet is different for different people, depending on the age, gender, and physical activity. 3. Communicable diseases spread from one person to another through a living or non-living agent. 4. There are many ways of preventing communicable diseases : (a) **Through sunlight and heat**— Expose the things used by a sick person

to sunlight after washing to kill germs. (b) **Clean water and food—** Wash hands frequently with soap and water. Eat fresh food cooked with clean hands and served in clean vessels. (c) **Prevent breeding of mosquitoes—** By not letting water stagnate near your house. You can spray kerosene or petrol to stop breeding of mosquitoes in coolers and bath tubs.

CHAPTER I2 : SAFETY SAVES FROM TROUBLE

A. 1. (a) 2. (a) 3. (a) 4. (a) 5. (a) **B.** 1. expiry 2. antiseptic 3. fracture 4. synthetic **C.** 1. True 2. True 3. False 4. True 5. False **D.** 1. (d) 2. (a) 3. (e) 4. (b) 5. (c) **E.** 1. Before crossing a road, first look to your right, then to your left and then to your right again. 2. The first help given to an injured person before the arrival of a doctor is called first aid. We need to learn first aid as it can save the life of a person. 3. If your clothes catch fire, then you should lie down on the floor and roll until the fire is put out. 4. In case of a fracture, use a roll of newspaper, magazine or cardboard on the fractured area for support, and tie it up. This support is called splint. 5. When an accident takes place, the injured person needs help. We should immediately inform an adult or a doctor. Till the doctor arrives, we can provide some relief to the patient.

UNIT-IV : THINGS AROUND US

CHAPTER I3 : SIMPLE MACHINES

A. 1. (b) 2. all 3. (b) 4. (c) **B.** 1. Simple machines 2. lever 3. Fulcrum 4. Load **C.** 1. True 2. True 3. True 4. True **D.** 1. In class one lever, the fulcrum is in the middle with load and effort on either side. For example, see-saw, scissors, etc. In class three lever, the effort lies between the load and the fulcrum. For example, a pair of tongs, stapler, etc. 2. A screw is an inclined plane wrapped around a cylinder in the form of a spiral whereas a wedge is a simple machine which has two inclined planes joined together back to back, with a sharp edge in the shape of a V. **E.** 1. Simple machines are the devices that help us to do a lot of work in a short time with less energy. They help us to get a work done easily by applying force at a convenient point, or by changing the direction of the force. 2. A pulley is a small wheel with grooves around its outer

edge. The groove can hold a rope in its position. A pulley can turn about a fixed rod that passes through its centre. The rod is called axle. There are two types of pulleys— (a) Fixed pulley (b) Movable pulley 3. A screw is an inclined plane wrapped around a cylinder in the form of a spiral. It has a winding edge with threads. Screws are used for holding things together so that they have a better grip while moving through long distances. Therefore, they are preferred over nails by carpenters and electricians. 4. An inclined plane is a simple sloping surface with one end higher than the other. It is used for pushing or rolling objects up a slope rather than lifting them up. The examples of inclined planes are the winding roads on hills, flyovers, hospital ramps, etc.

CHAPTER 14 : HOUSE

A. 1. (c) 2. (a) 3. (a) 4. (b) 5. (c) **B.** 1. permanent houses 2. surroundings 3. sloping roofs 4. drainage system 5. wire **C.** 1. True 2. False 3. True 4. False 5. True 6. True **D.** 1. (e) 2. (a) 3. (b) 4. (c) 5. (d) **E.** 1. Permanent houses are made from solid and strong materials like bricks, cement, tiles, iron, wood and steel. 2. The reasons behind the different shapes of houses are climate, place and availability of material. 3. Kutcha houses are made from bamboo, wood, mud, palm leaves, straw, etc. They are not strong. Pucca houses are made from bricks, cement, tiles, iron, wood and steel, etc. They are very strong. 4. (a) There should be proper drainage system in the house. (b) There should be wire netting to prevent flies and mosquitoes. (c) The drains of the house should be covered to keep away germs and mosquitoes. (d) The house should be properly ventilated.

CHAPTER 15 : LIGHT AND SHADOWS

A. 1. (a) 2. (a) 3. (a) 4. (a) **B.** 1. Solar eclipse 2. Lunar eclipse 3. earth 4. moon 5. Shadows **C.** 1. True 2. False 3. True 4. True **D.** 1. Sun, Stars 2. Wood, Plastic 3. Stone, Wood 4. Glass, Cellophane sheet **E.** 1. Opaque objects do not allow any light to pass through them, when light falls on them. They form shadows. Transparent objects allow light to pass through them totally. They do not form any shadows. 2. Solar eclipse occurs when the moon comes in between the sun and the earth. A

solar eclipse takes place on a new moon day. Lunar eclipse occurs when the earth comes in between the sun and the moon. It occurs on a full moon night. **F.** 1. If any object comes in the path of light, then a dark region is formed behind the object, as the light cannot pass through the opaque object. The dark region thus formed is called shadow. 2. (a) The size of the opaque object. (b) The size of the shadow also depends upon the size of the light source. (c) The distance between the object and the source of light. 3. Lunar eclipse occurs on a full moon night. When the earth comes between the sun and the moon, the shadow of earth falls on the moon, and prevents the sun's light from reaching it. 4. We should not look at a solar eclipse with maked eyes because it can damage your retina permanently.

UNIT-V : NATURAL CALAMITIES

CHAPTER 16 : NATURAL CALAMITIES

A. 1. (a) 2. (b) 3. (a) 4. (c) 5. (a) **B.** 1. Cyclones 2. Floods 3. Tsunami 4. intensity of earthquake 5. Government **C.** 1. True 2. True 3. True 4. False 5. False **D.** 1. (c) 2. (f) 3. (a) 4. (b) 5. (d) 6. (e) **E.** 1. Because smaller shocks, called aftershocks, many occur for some time. 2. Because it shows the speed of water currents. 3. Because it can save you from the effects of tsunami. **F.** 1. Forces of nature such as temperature, pressure, and magnetic forces keep on changing the conditions of the earth. Many times, they cause unusual changes on the surface of the earth, which lead to the loss of human life and property. Some calamities occur due to natural reasons, and we have no control over them. They are called natural calamities. For example, tsunami, earthquake, cyclone, flood, etc. 2. (a) Collapse of buildings, roads, flyovers and bridges. (b) Damage to life and property. (c) Many earthquakes result into floods due to the bursting of dams. 3. Do it yourself. 4. (a) To restore electricity and water supplies as early as possible. (b) To restore transport and communication networks. (c) To provide essentials like food, clothes, medicines, and blankets. 5. Drought is caused when there is a temporary reduction in water below the normal level in an area due to extreme shortage of rainfall during the monsoon season.

UNIT-VI : SPACE EXPLORATION

CHAPTER 17 : EARTH, SUN AND MOON

A. 1. (a) 2. (a) 3. (a) 4. (a) 5. (b) **B.** 1. planets 2. sun 3. Full moon 4. Ozone layer 5. egg-like **C.** 1. False 2. True 3. False 4. True 5. True **D.** 1. Moon 2. Eclipse 3. Gibbous moon **E.** 1. The phases of the moon are—(a) New moon (b) Crescent moon (c) Half moon (d) Gibbous mon (e) Full moon 2. Life is possible only on earth because of the presence of air and water on it. 3. Man has launched a number of man-made satellites into space. They revolve around the earth. They are called artificial satellites. They are used for various purposes like communication, weather forecasting and navigation. 4. The moon is made up of mountains and craters. Craters are saucer- shaped holes that have been made when lumps of rocks and iron, called meteorites hit the moon's surface. There are flat plains and high mountains also on the moon. There is no air and no water on the moon. 5. When the moon comes between the Sun and the Earth, the moon casts its shadow on the earth. The people in certain parts of the earth cannot see the Sun at all or see it only partially for sometime, this is called solar eclipse.

