

Exploring Science

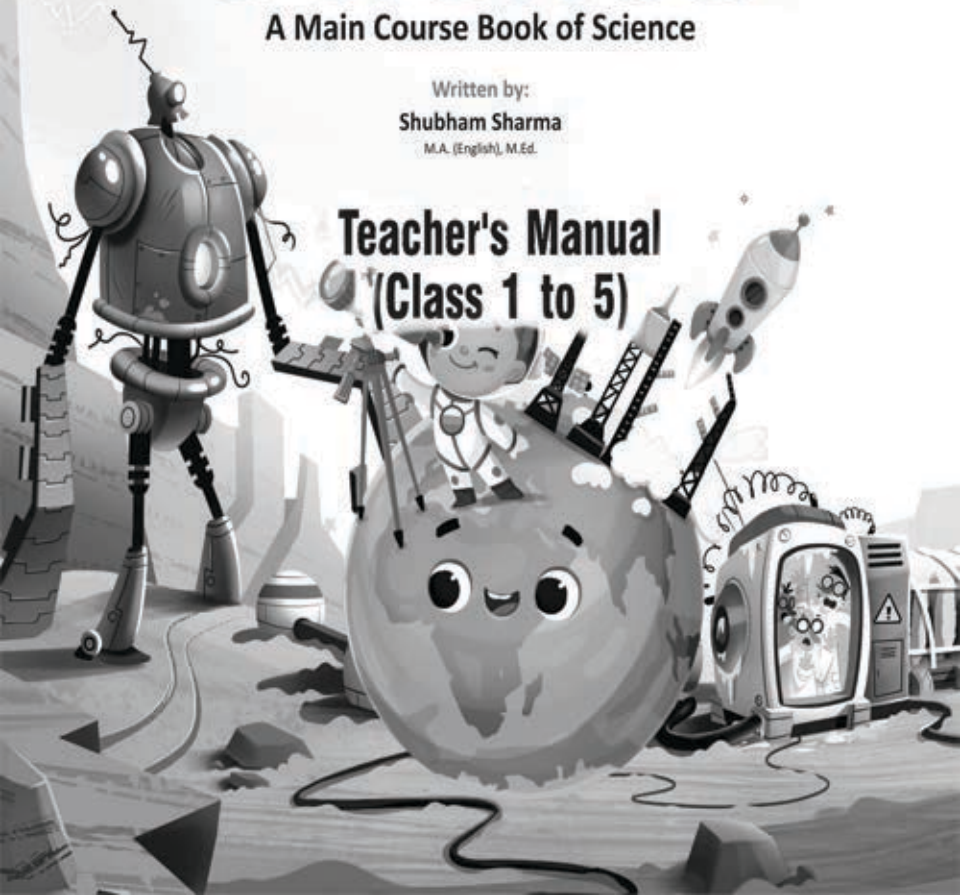
A Main Course Book of Science

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Teacher's Manual
(Class 1 to 5)



TEACHER'S HELP BOOK

MOTO SCIENCE WORLD-1

UNIT I : PLANT WORLD

Chapter 1 : Plants Around Us

A. 1. (a) 2. (c) 3. (c) 4. (b) **B.** 1. garden 2. Trees 3. Shrubs 4. Climbers 5. herb **C.** 1. (c) 2. (b) 3. (d) 4. (a) **D.** 1. Big plants are called trees. 2. Small and bushy plants are called shrubs. 3. Spinach, Grass 4. Those plants which need a support to grow are called climbers. 5. Climbers are such of plants which need Support to stand erect on their own.

Chapter 2 : Plants From Seeds

A. 1. (c) 2. (b) 3. (b) **B.** 1. Seeds 2. baby plants 3. food, air, water, sunlight. **C.** 1. G R A M 2. M A I Z E 3. B E A N 4. W H E A T **D.** 1. Yes, fruits are developed from flowers. 2. Seeds are found inside the fruits. **E.** 1. Apple, Papaya, Orange, Peas. 2. Yes, seeds have baby plants inside them. 3. Food, air, water and sunlight are necessary for a seed to germinate.

Chapter 3 : Food From Plants

A. 1. (b) 2. (c) 3. (a) **B.** 1. cereals 2. pulses 3. leafy 4. roots **C.** 1. T 2. T 3. T 4. T 5. T **D.** 1. Plants give us cereals, pulses, vegetables, fruits etc. so plants are useful to us. 2. Arhar dal, moong dal, urad dal 3. Wheat, rice 4. I like vegetable – potato, spinach, radish etc. and fruits – apple, mango, banana etc.

UNIT II : ANIMAL LIFE

Chapter 4 : The World Animals

A. 1. (a) 2. (a) 3. (b) **B.** 1. wild 2. domestic 3. pet animal 4. jungle 5. farm **C.** 1. a bird 2. an insect 3. at farms 4. in jungles 5. a wild **D.** 1. Cow and goat are two domestic animals. 2. Those animals who live in jungle are called wild animals. 3. Crow, cuckoo, sparrow, parrot. 4. Giraffe is the tallest animal in the world. **E.** 1. D 2. D 3. W 4. D 5. W 6. D 7. W 8. D

Chapter 5 : Food And Shelter For Animals

A. 1. (a) 2. (c) 3. (a) 4. (c) 5. (c) **B.** 1. den 2. rabbit 3. Bees 4. insects 5. grass **C.** 1. Horse, cow, rabbit 2. Lion, cat, leopard 3. Frog, lizard, spider 4. The home of a spider-web, a lion-den, a rabbit-burrow. 5. Horses are kept in stables. **D.** 1. (c) 2. (d) 3. (a) 4. (b)

UNIT III : AIR, WATER AND WEATHER

Chapter 6 : Air

A. 1. (b) 2. (a) 3. (b) **B.** 1. air 2. moving 3. wind 4. breathing 5. burning **C.** 1. (c) 2. (d) 3. (b) 4. (a) **D.** 1. F 2. F 3. T 4. F 5. T **E.** 1. Moving air is called wind. 2. Air is all around us it means air is everywhere. 3. When we pick an air filled balloon, it burst with a sound. 4. Because living things breathe in air day and night. 5. We cannot see air because air is invisible but we can feel it. **F.** 1. Plant 3. Lion 5. Burning candle

Chapter 7 : Water

A. 1. (c) 2. (c) 3. (a) **B.** 1. ponds 2. water 3. clean 4. boiling 5. water **C.** 1. F 2. T 3. F 4. F 5. T **D.** 1. (b) 2. (e) 3. (a) 4. (c) 5. (d) **E.** 1. Water is needed by all living things to remain alive. 2. Rivers, lakes, wells, ponds, rain and snow

are different sources of water. 3. Rain is the main source of water. 4. Drinking, bathing, cooking, washing the utensils etc. are the different uses of water to us. 5. We need water for cooking, washing the utensils, cleaning our house and clothes. **F.** 1. ✓ 3. ✓

Chapter 8 : Weather

A. 1. (a) 2. (b) 3. (b) **B.** 1. summer 2. cold 3. an umbrella 4. coat **C.** 1. Yes, we feel hot in summer season. 2. There are three seasons in our country. 3. In rainy season, we use to wear raincoat. 4. In winter season, we use to wear woollen clothes. 5. In March, April, May and June.

UNIT IV : OUR UNIVERSE

Chapter 9 : The Sun, The Moon And The Stars

A. 1. (c) 2. (b) 3. (c) **B.** 1. star 2. Sun 3. Moon 4. Earth **C.** 1. (d) 2. (c) 3. (b) 4. (a) **D.** 1. F 2. F 3. T 4. F 5. F **E.** 1. The Sun sets in the west. 2. We can see the moon and the stars shining in the sky at night. 3. The Sun is bigger than the Earth. 4. The Sun is the nearest star to the Earth.

UNIT V : THE HUMAN BODY, HEALTH AND HYGIENE

Chapter 10 : Keeping Clean

A. 1. (a) 2. (c) 3. (b) **B.** 1. brush 2. sneezing 3. clean 4. bite 5. fresh **C.** 1. G 2. G 3. G 4. G 5. B **D.** 1. F 2. T 3. T 4. T **E.** 1. Brushing protects our teeth from germs and helps to clean the mouth. 2. a. Brush your teeth twice a day. b. We must flush the toilet after use. c. We must bath daily. d. We must cut nails every week. 3. We should fresh ourself after getting up. 4. We should take a bath everyday, it cleans our bodies and we feel fresh. 5. We should put the waste material in dustbin. **F.** 1. Wash your eyes with cold and clean water

2. We must wash our hands with soap and flush the toilet.
 3. We must cover our mouth and nose with hanky. 4. One should use ear buds. 5. One should take rest.

Chapter 11 : Good Habits

- A.** 1. (c) 2. (c) 3. (c) **B.** 1. plate 2. eating 3. class 4. spit **C.** 1. F 2. T 3. F 4. T 5. F **D.** 1. We use our hanky when we suffer with sneezing and cough. 2. No, we should not. 3. No, we should not. 4. In the dustbin. **Do it yourself.**

Good Habits	Bad Habits
1. Washing hands before and after taking meal. 2. Do not waste food and water. 3. Keeping class room neat and clean. 4. Close the tap after use. 5. Do not make a noise in the class.	1. Plucking flower in the park. 2. Spitting anywhere. 3. Not taking bath everyday. 4. Not covering mouth and nose during cough and sneezing. 5. Talking while eating meal.

Chapter 12 : Keeping Fit

- A.** 1. (a) 2. (c) 3. (c) **B.** 1. fit 2. healthy 3. walk 4. night **C.** 1. F 2. T 3. F 4. T **D.** 1. Right food, regular exercise, proper posture and required rest make us fit and healthy. 2. Sleeping is necessary because after work and play we need rest. 3. Food, exercise, and proper rest make our body healthy and strong. 4. Playing in the open is a very good exercise.

Chapter 13 : Our Needs

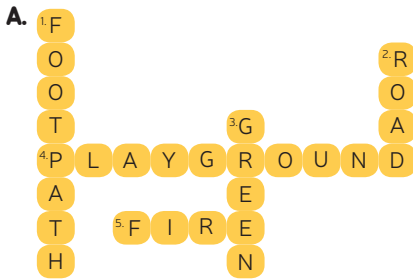
- A.** 1. (a) 2. (c) 3. (a) **B.** 1. fresh air 2. drinking 3. fast **C.** 1. We need a house to live in. 2. Food helps us to grow and stay healthy. 3. Vegetables, fruits and milk give us energy to work and play. **D.** Do it yourself

UNIT VI : SAFETY AND FIRST-AID

Chapter 14 : Safety Habits

A. 1. (a) 2. (c) 3. (c) **B.** 1. footpath 2. fire 3. queue 4. playground 5. head **C.** 1. We should play in a park or in a play ground. 2. If there is no footpath then we should walk on the left side of the road. 3. If we do not know how to swim well then we should not go alone for swimming.

Do it yourself.

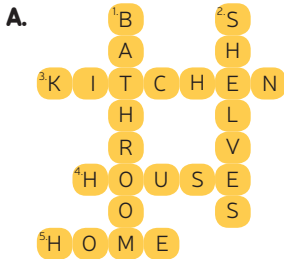


UNIT VII : HOUSING

Chapter 15 : Our Homes

A. 1. (c) 2. (c) 3. (c) 4. (c) **B.** 1. home 2. house 3. sleep 4. play 5. food **C.** 1. (b) 2. (a) 3. (d) 4. (c) **D.** 1. Our house. 2. We have cupboards and shelves for keeping our things. 3. We cook our food in the kitchen.

Do it yourself.



MODEL TEXT PAPER – I

A. 1. (c) 2. (b) 3. (c) 4. (a) **B.** 1. shrubs 2. climbers 3. jungle. 4. rabbit **C.** 1. true 2. true 3. false 4. true **D.** 1. Those plants which need a support to grow are called climbers 2. Arhar dal, moong dal, urad dal 3. We cannot see air because air is invisible but we can feel it. 4. Rain is the main source of water.

MODEL TEXT PAPER – II

A. 1. (b) 2. (b) 3. (c) 4. (c) **B.** 1. umbrella 2. sun 3. drinking 4. rest **C.** 1. (b) 2. (a) 3. (d) 4. (c) **D.** 1. In winter season, we use to wear woollen clothes. 2. Food helps us to grow and stay healthy. 3. Food, exercise, and proper rest make our body healthy and strong. 4. We cook our food in Kitchen.



MOTO SCIENCE WORLD-2

UNIT I : PLANT LIFE

Chapter 1 : The World of Plants

A. 1. (b) 2. (c) 3. (b) **B.** 1. trunk 2. trees 3. Herbs 4. support **C.** 1. T 2. F 3. F 4. T 5. F **D.** 1. (b) 2. (a) 3. (c) 4. (d) **E.** 1. Big and tall plants are called trees. 2. Shrubs are smaller than trees. They have thin and hard stems with many branches. 3. Some plants have weak stems. They need support of other plants or sticks to grow are called climbers as- grapevine, money plant. 4. Muskmelon, Watermelon, Bottle gourd.

F.

Trees	Shrubs	Herbs	Creepers
Mango	Mehndi	Brinjal	Muskmelon
Jamun	Rose	Tulsi	Bottlegourd
Neem	Cotton	Spinach	Watermelon

Chapter 2 : Uses of Plants

A. 1. (b) 2. (c) 3. (b) **B.** 1. food grains 2. sugarcane 3. medicines 4. bamboo 5. oil **C.** 1. T 2. F 3. T 4. F 5. T **D.** 1. (c) 2. (d) 3. (b) 4. (e) 5. (a) **E.** 1. Fruits, nuts, vegetables, fibres, medicines. 2. Fibres are useful. It is used to make sacks, mats, ropes and clothes. 3. For making furnitures, we use wood as fuel and making match sticks. 4. Tulsi, neem, eucalyptus are the medicinal plants.

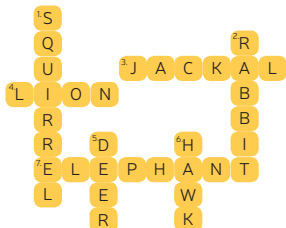
UNIT II : ANIMAL WORLD

Chapter 3 : Domestic Animals

A. 1. (b) 2. (c) 3. (a) **B.** 1. milch 2. ducks 3. Honey-bees 4. wool 5. leather **C.** 1. (d) 2. (a) 3. (e) 4. (b) 5. (c) **D.** 1. T 2. T 3. F 4. F **E.** 1. Our pet animals are called domestic animals. 2. Goat, cow, buffalo give us milk. 3. Sheep give us wool. 4. We make shoes, belts, suitcases, purses and many other things from the skin of the dead animals. **F.** 1. goat, cow 2. hen, fish 3 sheep, silkworm 4. cow, buffalo 5. horsecart, camelcart.

Chapter 4 : Wild Animals

A. 1. (c) 2. (b) 3. (c) **B.** 1. elephant 2. plant-eating 3. crow 4. nests **C.** 1. T 2. F 3. F 4. T 5. F **D.** 1. Animals that live in jungle are called wild animals. 2. Lion and elephant are big animals and fox and rabbit are small animals. 3. Monkey, deer and squirrel are plant-eating animals. 4. Tiger, lion and crocodile are flesh eating animals. **Do it yourself.**



UNIT III : OUR BODY

Chapter 5 : Bones and Muscles

A. 1. (a) 2. (c) 3. (b) **B.** 1. heart 2. kidneys 3. bones 4. joint 5. muscles 6. straight **C.** 1. T 2. T 3. T 4. F 5. F **D.** 1. (b) 2. (a) 3. (d) 4. (e) 5. (c) **E.** 1. If we press some parts of our body we feel certain hard structure inside. These hard structures are called bones. 2. The bones are joined to form a body frame work called skeleton. 3. If we press our palm, we feel something soft. This soft part around the bones are called muscles. 4. The place where two or more bones are joined is called a joint. 5. We need to exercise because regular exercise makes our body strong and fit. **F.** 1. It controls all other organs. 2. The heart pumps blood to all parts of our body. 3. Lungs help us to breathe. 4. Kidneys remove waste organ in the form of urine. 5. The stomach changes the food into a pulp and help us to digest. 6. Skeleton makes the frame work of the body. 7. Muscles help us to move every part of the body. 8. The joints allow us to bend our body at the different places. 9. A good posture keeps our body in proper shape. **Do it yourself.**

Chapter 6 : Safety and First Aid

A. 1. (c) 2. (c) 3. (c) **B.** 1. safe 2. queue 3. bus 4. gas stove **C.** 1. F 2. T 3. T 4. T 5. T **D.** 1. (d) 2. (a) 3. (b) 4. (c) **E.** 1. While walking on the road we should always use the footpath. Before crossing the road, first look to your right side then to left and again to right. 2. We should not play with blades, knives and fire. 3. Whenever we get hurt then we should tell our parents and elders. 4. If a pet bites us then we should wash the part where the pet has bite and after taking first-aid we should take advice from the doctor. **Do it yourself. A.**

1. Do not play with blades, knives and other sharp objects. Do not touch or play with electrical wires, plugs or switches. 2. Do not play or jump on desks and benches. Do not run down the staircase. 3. Do not play tricks on swings, slides and see-saws. Do not push or pull any body while playing. 4. Always use the footpath while walking. Always use zebra-crossing to cross the road.

UNIT IV : HUMAN NEEDS

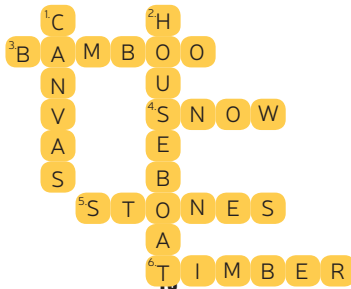
Chapter 7 : Our Food

A. 1. (b) 2. (c) 3. (c) **B.** 1. healthy 2. pulses 3. rice and butter 4. mouth 5. stale food **C.** 1. F 2. F 3. F 4. T 5. T **D.** 1. (c) 2. (a) 3. (b) **E.** 1. All living beings need food to remain alive because we cannot live without food. 2. We should not buy food from street vendors because this food has many germs and dust in it. **Do it yourself. A.** 1. a. milk b. pulses c. peas 2. a. bread b. maize c. rice 3. a. fruits b. vegetable c. milk

Chapter 8 : Our Houses

A. 1. (c) 2. (b) 3. (a) **B.** 1. tent 2. caravan 3. skyscraper 4. houseboat 5. igloo **C.** 1. (e) 2. (c) 3. (d) 4. (f) 5. (b) 6. (a) **D.** 1. T 2. F 3. T 4. T 5. F **E.** 1. We need a house to live in. 2. Kuchcha house and pucca house 3. Multi-storeyed pucca houses are called skyscrapers. 4. Floating house is called houseboat.

Do it yourself. A.



UNIT V : OUR ENVIRONMENT

Chapter 9 : Air

A. 1. (b) 2. (c) 3. (c) 4. (c) 5. (b) **B.** 1. dust 2. germs 3. smoke 4. weight 5. plants **C.** 1. T 2. F 3. T 4. F 5. T **D.** 1. (c) 2. (d) 3. (a) 4. (e) 5. (b) **E.** 1. Moving air is called wind. 2. Air contains dust particles, smoke, water vapour and germs. 3. Plants give us fresh and clean air. 4. Weight and space are the properties of air. **Do it yourself.**

Chapter 10 : Water

A. 1. (b) 2. (c) 3. (c) **B.** 1. sources 2. many 3. filter, cool 4. wells **C.** 1. T 2. T 3. T 4. F **D.** 1. (d) 2. (a) 3. (b) 4. (c) **E.** 1. Rivers, streams and lakes. 2. Well, tubewell, handpump. 3. Drinking, cooking and bathing. 4. colourless, tasteless and smell-less

Chapter 11 : Forms of Water

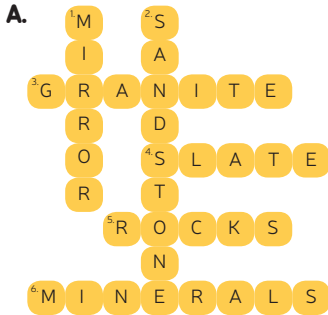
A. 1. (c) 2. (a) 3. (c) 4. (a) 5. (b) **B.** 1. cooled 2. water 3. steam 4. water cycle **C.** 1. T 2. T 3. F 4. T 5. T **D.** 1. (b) 2. (c) 3. (d) 4. (a) **E.** 1. Solid, liquid, gas. 2. In clouds, the waterdrops join to form large drops and the rain is formed. 3. The rain water goes into the lake, pond, river and well. 4. The heat of the Sun is like a pump making the water cycle go round and round. 5. The cool air and water vapour change into tiny drops of water. These drops join together and become clouds. **Do it yourself.** **A.** 1. steam 2. rain 3. vapour 4. cloud 5. water cycle **B.** 1. Water, Vapour 2. Water, Ice

Chapter 12 : Rocks and Minerals

A. 1. (c) 2. (c) 3. (a) **B.** 1. marble 2. building 3. slate 4. gypsum 5. hard **C.** 1. T 2. F 3. F 4. T 5. T **D.** 1. (c) 2. (a) 3. (d) 4. (b)

E. 1. Rocks are found almost everywhere. 2. Marble, granite and sandstone are hard rocks. 3. Coal, chalk and slate are soft rocks. 4. Gemstones are very hard minerals. 5. Granite is used to make floors.

Do it yourself.



UNIT VI : THE UNIVERSE

Chapter 13 : The Earth

A. 1. (a) 2. (a) 3. (a) **B.** 1. ball 2. Earth 3. three 4. clean 5. plant
C. 1. T 2. F 3. T 4. T 5. T 6. F **D.** 1. (c) 2. (d) 3. (a) 4. (b) **E.** 1. The small model of the Earth is called a globe. 2. The Earth is surrounded by a layer of air which is called atmosphere. 3. In some places the land rises very high. These are called mountains. 4. Some places on the Earth are covered with sand. They are called deserts. 5. Air, water and land are necessary for life on the Earth.

Chapter 14 : The Sun and The Shadow

A. 1. (b) 2. (c) 3. (c) **B.** 1. light 2. shadow 3. opposite 4. direction 5. three **C.** 1. T 2. F 3. F 4. F 5. T **D.** 1. (b) 2. (c) 3. (a) **E.** 1. The Sun, the moon, the stars, candle, lamp, electric bulb, burning fuel and tube light. 2. A shadow is a dark

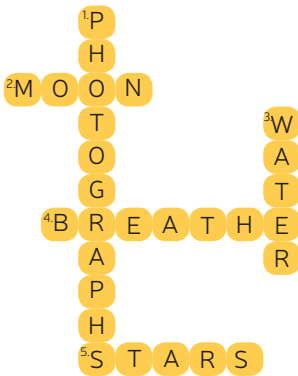
shape formed by an object that blocks light. 3. When the light falls on any object it formed a shadow by the opposite side of the light. 4. On the opposite side of the light. 5. At noon. **Do it yourself.** A 1. hot 2. bigger 3. minutes 4. one moon.

Chapter 15 : The Moon and The Stars

A. 1. (a) 2. (a) 3. (c) **B.** 1. different 2. pretty 3. fire **C.** 1. F 2. T 3. T **D.** 1. The moon shines at night. 2. The stars look very tiny because they are far-far away from us. 3. Neil Armstrong

Do it yourself.

A.



MODEL TEXT PAPER – I

A. 1. (c) 2. (c) 3. (a) 4. (b) **B.** 2. nests 1. support 3. safe 4. stale food **C.** 1. F 2. T 3. F 4. T **D.** 1. Shrubs are smaller than trees. They have thin and hard stems with many branches. 2. The place where two or more bones are joined is called a joint 3. we need to exercise because regular exercise make ur body strong and fit. 4. All living beings need food to remain alive because we cannot live without food

MODEL TEXT PAPER – II

A. 1. (c) 2. (b) 3. (c) 4. (a) **B.** 1. skycraper 2. sources 3. water cycle 4. plant **C.** 1. (c) 2. (d) 3. (a) 4. (e) 5. (b) **D.** 1. Air contains dust particles, smoke, water vapour and germs. 2. The heat of the sun is like a pump waking the water cycle go round and rounq. 3. The Earth is surrounding by a layer of air which is called atmosphere. 4. A shadow is a dark shape formed by an object that blocks light. 5. Neil Armstrong



MOTO SCIENCE SCIENCE WORLD-3

UNIT I : LIVING THINGS

Chapter 1 : The World Around Us

A. 1. (b) 2. (a) 3. (b) **B.** 1. food 2. living 3. animals 4. gills 5. natural **C.** 1. T 2. T 3. F 4. T 5. F **D.** 1. (c) 2. (e) 3. (d) 4. (b) 5. (a) **E.** 1. Things like mountains, rivers, stones, sand, clouds, water, sun, moon and stars which are found in nature are known as natural things. 2. They are the things like house, car, bicycle, chair, table, television, computer, ball, doll and many other things which are made by man. 3. The special feature of living things are - they need air to breathe, food and water. They reproduce their own kind. They grow and move. 4. Plants breathe through tiny holes called stomata.

UNIT II : PLANT LIFE

Chapter 2 : Part of a Plant

A. 1. (c) 2. (a) 3. (a) **B.** 1. tap root 2. fibrous root 3. leaf blade or lamina 4. stomata 5. oxygen **C.** 1. T 2. F 3. T 4. F 5. T **D.** 1.

(c) 2. (d) 3. (e) 4. (b) 5. (a) **E.** 1. The leaves make the food for the plant. 2. Roots absorb water and nutrients (salts) from the soil. 3. All the stem carries food and the roots carries water to all parts of plants. 4. Flower changes into fruit. 5. Roots hold the plant to the ground and absorb water and nutrients from the soil. These are the two main functions of the root. **Do it yourself.** 1. The fruit 2. The leaf 3. The stem 4. The root

UNIT III : ANIMAL LIFE

Chapter 3 : The World of Animals

A. 1. (b) 2. (b) 3. (b) **B.** 1. swallow 2. leech 3. omnivores animals 4. kennel 5. gnawers or rodents **C.** 1. T 2. T 3. F 4. F 5. F **D.** 1. Cows, buffaloes, bullocks, camels, deer, goats etc. eat grass. They are called herbivores. 2. Some animals eat plants as well as the flesh of other animals. Such type of animals are called omnivores. 3. Cows and buffaloes cut the grass and swallow it. These animals are called cud chewing animals. 4. They have sharp teeth and sharp claws. 5. Like humans, animals also need protection. So they need a shelter.

Chapter 4 : The Birds

A. 1. (b) 2. (c) 3. (b) 4. (c) **B.** 1. Peacock 2. long 3. prey 4. broad 5. long 6. hooked 7. strong, sharp **C.** 1. F 2. F 3. T 4. F 5. F **D.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **E.** 1. There are the two types of feathers— (a) down feathers b. flight feathers. 2. The main parts of a bird are – head, trunk, wings, tail and legs. 3. They flap their wings up and down and gradually go up into the air. 4. Kite, eagle, vulture and hawk are the flesh- eating birds. So, they have strong and sharp beaks. 5. They have webbed feet.

UNIT IV : THE HUMAN BODY AND ITS NEEDS

Chapter 5 : The Human Body

A. 1. (b) 2. (a) 3. (c) **B.** 1. Organ system 2. Eyelids 3. Vibrations 4. taste buds 5. bones 6. skeleton **C.** 1. T 2. T 3. T 4. T 5. F
D. 1. (e) 2. (d) 3. (b) 4. (a) 5. (c) **E.** 1. Organ systems which make it possible to work, play, grow, learn and carry out different activities throughout the life. 2. The place where two or more bones meet are called joints. 3. There are three muscles in our body. 4. A broken bone is called a fracture.
Do it yourself. 1. sour 2. bitter 3. sour 4. salty 5. sweet.

Chapter 6 : Safety First

A. 1. (a) 2. (c) 3. (a) **B.** 1. zebra crossing 2. terylene 3. signal 4. green 5. rules **C.** 1. F 2. F 3. T 4. F 5. F 6. T **D.** 1. (d) 2. (e) 3. (a) 4. (b) 5. (c) **E.** 1. Because if we do that we can get shocked. 2. Do not run down the stairs. You may fall down and get hurt. 3. You may fall down. You should go to the park or safe open ground to fly kites. Do not run across a road to catch a kite. It can be dangerous. 4. I shout to inform her / his elders and first-aid him/her before taking him/her to the doctor. 5. The first help given to the wounded person after an accident is called first-aid.

Chapter 7 : Our House

A. 1. (c) 2. (a) 3. (c) 4. (c) **B.** 1. covered 2. chimney 3. dustbin 4. proper 5. good **C.** 1. F 2. T 3. T 4. F 5. F **D.** 1. cleanliness keep us healthy. 2. Drawing room, study room, bed room, guest room. 3. We do many activities in our house such as sleeping, reading, eating etc. 4. A house protects us from rough weather, thieves, wild animals, robbers etc. 5. We should keep our waste in dustbin and keep every part of the house neat and clean.

UNIT V : MATTER AND ENERGY

Chapter 8 : Soil

A. 1. (b) 2. (b) 3. (c) **B.** 1. sand 2. soil 3. a loamy 4. plants 5. humus, manure 6. different **C.** 1. F 2. F 3. T 4. T 5. F 6. F **D.** 1. (c) 2. (a) 3. (b) 4. (e) 5. (d) **E.** 1. Soil is formed by the breaking up of rocks. 2. Humus is made up of pieces of dead animals and plants. 3. Farmers add manure and fertilizers to the soil to become a land fertile. 4. The top soil consists of house soil with roots of plants. 5. There are three kinds of soil : sandy soil, clayey soil and loamy soil. **Do it yourself.** 1. clay 2. humus 3. gravel 4. sand grains

Chapter 9 : Heat

A. 1. (b) 2. (b) 3. (a) **B.** 1. warmer, cooler 2. bigger 3. temperature 4. hot 5. thermometer **C.** 1. T 2. F 3. F 4. T 5. T **D.** 1. (d) 2. (a) 3. (e) 4. (b) 5. (c) **E.** 1. Heat comes from Sun. 2. If an object gets hotter, its temperature gets higher. Then heat changes objects like melt butter, coconut oil, ice-cream. 3. Wood, coal, natural gas (LPG and CNG) and oil (Kerosene, petrol, diesel) are fuels. 4. This is why the ground feels hot when we walk barefoot on Sunny days. 5. Doctors use thermometers to measure the temperature of our body.

Chapter 10 : Force

A. 1. (a) 2. (c) 3. (a) **B.** 1. force 2. strong 3. opposing 4. little **C.** 1. T 2. T 3. T 4. F **D.** 1. In a tug-of-war, forces act in the opposite direction. If the two opposing forces are equal, the object remains stationary. 2. A force which slows down a moving object is called force of friction or frictional force.

- Friction helps us to walk. The chances of falling on a wet slippery floor are high because there is little friction.
- Friction helps us to grasp things. It is easier to hold onto

a glass bottle when it is wet. Water makes things slippery. In other words, it reduces the friction between our hand and bottle. 3. There is a force which makes objects move towards the ground. It is called the force of gravity or gravitational force. 4. Mountaineers wear spiked solid shoes while climbing mountains.

UNIT VI : SPACE AND ENVIRONMENT

Chapter 11 : Air, Water and Weather

A. 1. (c) 2. (b) 3. (a) **B.** 1. three-fourths 2. weather 3. three 4. water-vapour 5. lighter 6. hotter **C.** 1. (b) 2. (a) 3. (d) 4. (e) 5. (c) 6. (g) 7. (f) **D.** 1. F 2. F 3. T 4. F 5. F 6. T **E.** 1. By keeping it in the freezer in our refrigerator after an hour we can turn water into ice. 2. The sources of water are— rain, rivers, ponds, lakes, oceans and wells. 3. Change of water into water vapour is called evaporation. Change of water vapour into water is called condensation. 4. This is because the clouds in the sky block the rays of the Sun. 5. The Sun keeps the day warm. At night the moon does not warm the night. So, days are warmer than nights.

Chapter 12 : The Earth and The Moon

A. 1. (b) 2. (c) 3. (b) 4. (b) **B.** 1. planet 2. west, east 3. axis 4. 28 5. natural 6. 24 **C.** 1. (e) 2. (d) 3. (b) 4. (c) 5. (a) **D.** 1. F 2. F 3. F 4. F 5. T 6. T **E.** 1. Day and night are formed due to the earth's rotation. 2. The moon is the natural satellite of the Earth. 3. The spinning of the Earth on its axis is called the rotation of the Earth. 4. The Sun looks small because it is very far away from us. 5. The stars are very far away than the Sun and moon. So the stars look much smaller than the Sun and the moon. 6. 1. Orion (Hunter) and Leo (Lion). **F.** Do it yourself.

MODEL TEXT PAPER – I

A. 1. (a) 2. (b) 3. (a) 4. (c) **B.** 1. living 2. leaf blade 3. hooked 4. green **C.** 1. true 2. true 3. false 4. false 5. false **D.** 1. Big plants are called trees. 2. Small and bushy plants are called shrubs. 3. Spinach, Grass 4. Those plants which need a support to grow are called climbers. 5. Climbers are such of plants which need support to stand erect on their own.

MODEL TEXT PAPER – II

A. 1. (c) 2. (b) 3. (b) 4. (a) **B.** 1. dustbin 2. different 3. strong. 4. hotter **C.** 1. (c) 2. (e) 3. (d) 4. (d) **D.** 1. Heat comes from sun. 2. If an object gets hotter. 3. There is a force which makes objects move towards the ground. 4. Mountaineers wear spiked solid shoes while climbing mountains.



MOTO SCIENCE WORLD-4

UNIT I : PLANTS LIFE

Chapter 1 : Our Green Friends

A. 1. (a) 2. (b) 3. (c) 4. (a) 5. (c) **B.** 1. water, soil, carbon dioxide 2. sunrays 3. chlorophyll 4. prepare 5. minerals, food, oxygen **C.** 1. T 2. T 3. F 4. T **D.** 1. (b) 2. (c) 3. (d) 4. (a) **E.** 1. Leaf makes food for the plant in the presence of sunlight, carbon dioxide, water etc. 2. Green plants are called producers because they make their own food. 3. The plants use the food to grow and live. Plants store some of the food for future use. 4. Carrot, radish and turnip are roots which store food. Sugarcane and lotus stem (kamal kakri) are the stems. 5. No, because they cannot get sunlight at night. **F.** 1. Leaves 2. Veins 3. Photosynthesis 4. Lamina.

Chapter 2 : Adaptation In Plants

A. 1. (b) 2. (c) 3. (c) 4. (b) 5. (c) **B.** 1. floating 2. breathing or aerial 3. spines 4. water plant 5. small insects **C.** 1. T 2. F 3. F 4. T **D.** 1. (iv) 2. (iii) 3. (ii) 4. (i) **E.** 1. Fir, Deodar, Pine 2. Mango, Peepal, Banyan 3. Tape grass, Pond weed, Vallisneria 4. Opuntia, Prickly Pear, Cactus 5. Pitcher plant **F.** 1. The climate is cold and dry in the hills. 2. It keeps water in its stem. 3. Mangroves grow in marshy areas. 4. It gets water from the underground water and its stems are protected by its wax layer. 5. There are three types of aquatic plants : submerged, floating and fixed. **G.** 1. Do it yourself.

UNIT II : ANIMALS LIFE

Chapter 3 : Adaptation in animals

A. 1. (a) 2. (a) 3. (b) **B.** 1. Birds 2. arboreal 3. camouflage **C.** 1. F 2. T 3. T **D.** 1. (c) 2. (a) 3. (b) **E.** 1. The home or natural environment in which an animal lives is called its habitat. 2. Their bodies are made according to the environment they live. 3. They can swim. They can breathe air mixed in water with the help of their gills. 4. Camel can live without water for many days or even a month. They have broad padded feet to help them walk easily on the desert sand. During sand storm the camel's nostrils close up to block out sand. 5. The furry hair of polar bear keep them warm in polar region.

Chapter 4 : Reproduction In animals

A. 1. (c) 2. (b) 3. (c) **B.** 1. aquatic 2. hundreds 3. some **C.** 1. T 2. F 3. F **D.** 1. The process by which animals produce young ones of their own kind is known as reproduction. 2. Both give eggs. Birds look after their young ones but

snake does not. 3. A frog can live both on land and in water because it breathes through the lungs on land and through the moist skin in water. 4. There are some mammals like spiny anteater and duck-billed platypus which lay eggs instead of giving birth to babies. 5. Butterflies complete their life cycle in four stages and cockroaches complete their life cycle in three stages. 6. Both live in water and give eggs in water. **E.** 1. cockroach, nymph 2. Crocodile 3. Horse, deer 4. Dolphin, whale 5. Butterfly, cockroach

UNIT III : HUMAN BODY AND NEEDS

Chapter 5 : Food and Digestion

A. 1. (b) 2. (a) 3. (c) **B.** 1. Oesophagus 2. Saliva 3. small 4. liver, small intestine, large intestine 5. rectum 6. bile, fats 7. mouth itself 8. anus **C.** 1. F 2. F 3. T 4. F 5. F 6. F 7. F 8. F 9. T 10. T **D.** 1. Digestion is the process in which food is broken down into a usable form. 2. The food pipe which connect the mouth and stomach is called oesophagus. It sends food from mouth to the stomach. 3. The strong muscles of the stomach use digestive juices to digest the food. 4. (a) Food is made up of useful substances called nutrients. (b) A diet with right amounts of Carbohydrates, proteins, fats, mineral, vitamins, roughage and water is called a balanced diet. (c) Roughage is the fibre present in our food. (d) The act of preventing food from getting spoilt. 5. The undigested food and water in the small intestine pass into the large intestine. **E.** 1. Proteins 2. Carbohydrates 3. Vitamins and minerals 4. Saliva 5. Food preservation

Chapter 6 : Teeth And Microbes

A. 1. (b) 2. (b) 3. (a) 4. (c) 5. (c) 6. (b) **B.** 1. twice 2. calcium 3. floss 4. small living 5. germs **C.** 1. T 2. F 3. F 4. T **D.** 1. (c)

2. (a) 3. (b) 4. (d) **E.** 1. Microscope 2. Fungi 3. Microbes are very small living things. 4. Microbes that cause disease are called germs. 5. By the age of three, the child has a set of 20 teeth. This set of teeth is called milk teeth or temporary teeth. 6. We should eat raw vegetables like carrots and fruits like apple. They make our gums and teeth strong. **F.** 1. Bacteria 2. Protozoa 3. Fungi **G.** 1. Do it yourself.

Chapter 7 : Sanitation of Food and Water

A. 1. (c) 2. (b) 3. (c) 4. (a) 5. (a) **B.** 1. food preservation 2. moisture 3. tight 4. impure 5. impure **C.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c) **D.** 1. T 2. T 3. F 4. T 5. F **E.** 1. Sanitation refers to keeping the food and water free from the attack of germs. 2. Water may contain germs which make us sick. To make this water germs-free we should boil it. 3. Food can be preserved in air tight containers because moisture and air cannot enter into it. This process is called canning. 4. Bacteria grow in moisture, but if the food is dried or dehydrated can be preserved for many days. Peas, pulses, etc. are preserved in strong sugar solutions. It is known as sweetening are preserved by this method. 5. Fruits like mango, apple, pineapple, guava and vegetables like carrot, amla etc. 6. Water can be purified by filtration and boiling. In filtration, suspended and floating impurities are removed but soluble impurities and germs are not. Boiling for 10 minutes kills most of the germs and then cool it. **F.** Do it yourself

UNIT IV : SOIL

Chapter 8 : Soil

A. 1. (b) 2. (a) 3. (c) 4. (b) **B.** 1. soil 2. soil erosion 3. organic matter 4. conservation of soil **C.** 1. (c) 2. (e) 3. (d) 4. (b)

5. (a) **D.** 1. T 2. F 3. T 4. T **E.** 1. When the tiny pieces of organic matter (dead plants and animals) and minerals mix in soil. These make the soil fertile. 2. The removal of fertile topsoil by the action of wind, rain and river water is called soil erosion. 3. The uppermost layer of earth that contains minerals, some amount of air, water, sand and organic matter is called soil. 4. The protection of soil from erosion is called conservation of soil. 5. The removal of fertile soil by the action of wind and water is called soil erosion. Two causes of soil erosion are–

- Strong winds and heavy rain and deforestation (cutting down of trees) in large numbers.

UNIT V : MATTER AND MATERIALS

Chapter 9 : States of Matter

A. 1. (b) 2. (c) 3. (c) 4. (b) **B.** 1. Molecules 2. shape, size, volume 3. higher, lower 4. directions 5. freezing **C.** 1. T 2. F 3. F 4. F **D.** 1. Anything which has weight and occupies space is called matter. 2. Molecules are the smallest substances in matter than can exist independently. 3. They do not have space between them to move. So, the solids have a definite shape, size and volume. 4. The ability of a liquid to dissolve other substances in it, is known as its solubility. 5. Do it yourself. **E. Do it yourself.**

UNIT VI : SAFETY RULES AND FIRST-AID

Chapter 10 : Safety and First-Aid

A. 1. (b) 2. (c) 3. (b) 4. (a) 5. (a) **B.** 1. Accidents 2. mopped 3. match box, match sticks 4. stairs 5. zebra-crossing **C.** 1. F 2. T 3. F 4. T 5. T **D.** 1. We should follow the safety rules. They save us from injures. 2. Always cross the road at the zebra- crossing. 3. • Make him/her lie with the head/lower

than the body. • Allow fresh air around the person. It gives blood to his/her brain. 4. • We should always keep the whole bathroom dry. If it is wet, dry it up using a wiper. • Do not leave any soap or shampoo on the bathroom floor. 5. The immediate help provided to an injured person before the doctor's arrival is called first-aid. **E.** Do it yourself.

UNIT VII : FORCE, WORK AND ENERGY

Chapter 11 : Force, Work and Energy

A. 1. (c) 2. (b) 3. (c) 4. (b) 5. (b) 6. (c) **B.** 1. (d) 2. (a) 3. (e) 4. (c) 5. (b) **C.** 1. direction 2. stop 3. energy 4. windmill 5. force **D.** 1. F 2. T 3. T 4. T 5. T **E.** 1. The force by which the Earth pulls the objects towards it, is called gravitational force (gravity). 2. (1) A bottle opener (2) A scissors 3. When a force changes the position of an object, work is said to be done. 4. No, on pushing the wall, no work is done because the position of the wall does not change. 5. **Lever** - A lever is a simple machine used to cut things, for example, scissors and open lids, for example, bottle opener. **Pulley** - A pulley is a simple machine used to draw water from the well. 6. The flowing water also has energy. It is called water energy. Electricity produced by the energy of flowing water is called hydro-electricity. **F.** 1. Axe 2. Screw 3. Scissors

UNIT VIII : OUR UNIVERSE

Chapter 12 : Solar System

A. 1. (b) 2. (a) 3. (b) 4. (a) 5. (b) **B.** 1. constellation 2. planet-earth 3. revolution 4. solar system 5. orbit **C.** 1. T 2. T 3. F 4. T **D.** 1. (f) 2. (d) 3. (c) 4. (e) 5. (a) 6. (b) **E.** 1. Water and air are necessary for all living beings. Air and water are found on the Earth only. So, only Earth has life on it. 2. The sun is

also a star, it looks big because it is the nearer than the other stars. 3. At night the moon does not get heat and light from the sun. So, we feel cool stand outside in moonlight.

4. (a)

The inner planets	The outer planets
<ul style="list-style-type: none"> The four inner planets are- Mercury, Venus, Earth and Mars. 	<ul style="list-style-type: none"> The four outer planets are-Jupiter, Saturn, Uranus and Neptune.
<ul style="list-style-type: none"> They are made of rocks. 	<ul style="list-style-type: none"> They are made of gases. They have no solid surfaces.

(b) Rotation - The earth rotates on its own axis. It is known as rotation. **Revolution** - The earth rotates on its axis, and revolves around the sun. This movement is known as revolution. **(c) Axis** - The earth rotates on its own axis. **Equator** - The imaginary line around the earth that divides it into equal north and south parts. **F.** •Earth •Jupiter • Mercury • Mars • Jupiter, Saturn, Uranus, Neptune

MODEL TEXT PAPER-I

A. 1. (c) 2. (a) 3. (a) 4. (a) **B.** 1. water plant 2. arboreal 3. saliva 4. small living **C.** 1. T 2. F 3. F 4. F **D.** 1. Green plants are called producers because they make their own food. 2. Microbes that cause disease are called germs. 3. Their bodies are made according to the environment they live. 4. Digestion is the process in which food is broken down into a usable form.

MODEL TEXT PAPER-II

A. 1. (a) 2. (b) 3. (b) 4. (a) **B.** 1. freezing 2. stairs 3. energy 4. solar system **C.** 1. True 2. True 3. False 4. False **D.** 1. Water and air are necessary for all living beings. Air and water are found on the Earth only. So, only Earth has life

on it. 2. The ability of a liquid to dissolve other substances in it, is known as its solubility. 3. The protection of soil from erosion is called conservation of soil. 4. Their bodies are made according to the environment they live.



MOTO SCIENCE WORLD-5

UNIT I : PLANT LIFE

Chapter 1 : Reproduction in Plants

A. 1. (b) 2. (b) 3. (a) **B.** 1. cotyledons 2. cotyledons 3. ladyfinger 4. rabi crops 5. Harvested **C.** Do it yourself **D.** 1. When a new plant grows from a seed, it is called germination. 2. Some seeds are very light. The seeds of orchid are almost as fine as dust. These are carried to a new place by the wind. 3. The seeds of some juicy fruits pass into animals and birds excretion and which are left in different places. The human beings throw the seeds of eaten fruits. Some fruits have seeds with hooks. These catch on the fur of animals are carried away 4. They build a fence around the field. A scare crow also helps to keep the birds away.

UNIT II : ANIMALS LIFE

Chapter 2 : Animals : Living and Surviving

A. 1. (c) 2. (c) 3. (c) **B.** 1. gills, fins 2. Birds 3. the lungs, the moist skin 4. Locusts **C.** 1. F 2. T 3. T 4. F **D.** 1. (c) 2. (d) 3. (a) 4. (e) 5. (f) 6. (b) **E.** 1.

	Insects	Mammals
1.	They have their body covered with tiny hard scales.	Their body are covered with hair, fur, wool or bristles.

2.	They have six legs to move, crawls, hop or walk.	They have four limbs, two forelimbs and two hind limbs.
3.	They lay eggs.	They give birth to young ones like cow gives birth a calf, bitch gives birth puppy.

2. An insect have six feet. Their body are covered with tiny hard scales. 3. Frogs are amphibians that live on both on land and in water. Frog lay soft-shelled eggs. While lizard lay hard-shelled eggs. Lizard, has four short legs to move. They crawl on their bodies. 4. Snakes do not have legs. They have scales on the underside of their body which enable them to move.

UNIT III : HUMAN BODY AND HEALTH

Chapter 3 : Our Skeletal System

A. 1. (a) 2. (b) 3. (c) 4. (a) **B.** 1. frame work 2. 22 3. thigh 4. joints **C.** 1. (a) 2. (d) 3. (b) 4. (c) **D.** 1. F 2. T 3. T **E.** 1. The bones of the skeleton form a body framework. They help us to stand upright. 2. Bones join together to form joints. 3. arms, legs, hands 4. The skeletal can move at our will and involuntary muscles are not in our control. They move on their own.

Chapter 4 : Our Nervous System

A. 1. (b) 2. (a) 3. (a) 4. (a) **B.** 1. the control 2. three 3. nerve 4. iris **C.** 1. F 2. F 3. T 4. T **D.** 1. (d) 2. (a) 3. (b) 4. (c) **E.** 1. Nerves are the thin thread - like structures spread throughout the body. 2. The three main parts of the brain are—the cerebrum, the cerebellum and the medulla.

3. Nerves link every part of the body to brain. 4. • We should have bath with soap and clean water. • We should wear clean clothes.

Chapter 5 : Safety and First-Aid

A. 1. (c) 2. (c) 3. (b) **B.** 1. time, place 2. Carelessness 3. electric fault 4. fire brigade 5. rabies 6. subway, at the zebra - crossing 7. slipping 8. electric **C.** 1. T 2. T 3. F 4. T **D.** 1. (d) 2. (a) 3. (b) 4. (c) **E.** 1. Carelessness leads to accidents. 2. By following certain safety rules one can avoid accidents. 3. In this we should close the gas immediately and open all windows and doors. 4. If the oil in the pan catches fire, control the fire by throwing baking soda on the burning oil. or corer it with a suitable lid 5. (a) Fracture– Use a splint slip to give support to the broken limb. (b) Sprain– Tie an elastic bandage around the joint to protect it from moving. (c) Nose bleed– Press the bleeding side of the nose firmly with your fingers. (d) Dog bite– Wash the wound with soap and water to wash away the germs. (e) Snake bite–A person bitten by a poisonous snake must be rushed to the hospital and a tight bandage can be tied around the wound. 6. Throw lots of sand on the fire. Never throw water, as petrol is lighter than water and will float on the surface of water and keep burning. 7. (a) First-aid is the immediate help given to a wounded person. (b) Fracture - A fracture is a crack in a bone. (c) Fire - extinguisher is a device used to put out small fires. (d) Splint is a piece of cardboard or sheet of newspaper used to hold a broken bone.

Chapter 6 : Food and Health

A. 1. (a) 2. (b) 3. (c) 4. (c) 5. (c) **B.** 1. Fats 2. protein 3. citric fruits 4. Vitamins 5. digestive, excretory system **C.** 1. F 2. T

3. F 4. T 5. F **D.** 1. (c) 2. (d) 3. (a) 4. (b) **E.** 1. (i) Proteins (ii) Carbohydrates (iii) Fats (iv) Vitamins (v) Minerals 2. They are called protective food because they help our body to fight with disease. Fresh fruits and vegetables are rich source of vitamins. 3. There are four types of vitamins. 1. Vitamin A 2. Vitamin B 3. Vitamin C 4. Vitamin D 4. The functions of different minerals are : a. **Iron** - builds red blood cell, helps us to be active. b. **Iodine** - gives proper growth of the body. c. **Calcium** - builds bone and teeth, strengthens gums, help the body to use vitamin C. d. **Phosphorus** - improves appetite, helps in growth. 5. It is the fibre present in the food. It helps the body to get rid of wastes from our stomach through anus. 6. It moves the food through digestive and excretory system. It protect delicate body parts like eyes, brain and spinal cord. It maintains body temperature and digests materials. 7. A diet that contains all the nutrients, roughage and water in the right proportion is called a balanced diet. 8. It makes our heart beat faster. It helps the nervous system by supplying extra blood to brain. It leads to more sweating. It helps the body wastes to be excreted.

UNIT IV : OUR RESOURCES

Chapter 7 : Air and Water

A. 1. (b) 2. (c) 3. (b) 4. (a) 5. (a) 6. (c) **B.** 1. filtration 2. chlorine 3. soluble 4. germs **C.** 1. F 2. T 3. F 4. T **D.** 1. 21% oxygen. 2. Barometer is an instrument used to measure air pressure. 3. (a) **Boiling** : Boiling kills the germs present in water and makes the water pure. (b) **Water purifies** : we get purified water from electrical water purifier. 4. Loading is adding chemicals like alum in a mixture to improve the rate of sedimentation. 5. See book page 50. 6. See book page 52.

UNIT V : MATTER, ROCKS AND MATERIALS

Chapter 8 : Solid, Liquid and Gas

A. 1. (c) 2. (b) 3. (b) 4. (a) **B.** 1. seen 2. pattern 3. solutions, liquids 4. miscible 5. heating 6. solutions **C.** 1. T 2. F 3. F 4. F 5. T 6. F **D.** 1. (b) 2. (c) 3. (d) 4. (a) 5. (f) 6. (e) **E.** 1. By comparing their shapes, sizes, colours. They are made by different molecules. 2. Both have molecules in them. 3. Solid are arranged in a pattern and are held together by a strong pull. Liquid are not arranged in any particular pattern and are held together by a weaker pull. 4. Matter is made up of very tiny particles called molecules. Solutions are generally solids dissolved in liquids. 5. A temporary change is a physical change; a permanent change is a chemical change. In a chemical change, the molecules of a substance change and a new substance of formed. 6. • A solid (ice) changes into a liquid (water) on heating. • A liquid (water) changes into a gas (water vapour) on heating. • A liquid (water) changes into a solid (ice) on cooling. • Heating Wax • Melting of butter • Burning of candle.

Chapter 9 : Rocks and Minerals

A. 1. (c) 2. (b) 3. (a) 4. (a) **B.** 1. colour, shape 2. metamorphic 3. igneous 4. rock **C.** 1. Rocks are naturally formed solids made up of one or more substances. 2. Minerals are naturally formed in the earth and are the building blocks of rocks. 3.

Minerals	Rocks
<ul style="list-style-type: none">Minerals do not contain plant or animal matter.	<ul style="list-style-type: none">Rocks may contain plant and animal matter.

<ul style="list-style-type: none"> Minerals usually have a uniform colour and shape. 	<ul style="list-style-type: none"> Rocks differ in colour and shape.
<ul style="list-style-type: none"> Some of them have crystals and are usually pretty. 	<ul style="list-style-type: none"> They do not have crystals.

4. Sedimentary rocks are formed due to pressure on pieces of old rocks that have collected at one place– (a) Sandstone (b) Shale 5. Igneous rocks are formed due to cooling of molten (or liquid) rocks. 6. Rocks have many uses. They are used for building houses, making medicines, cosmetics and in various other useful ways. Rocks are also present in many things that we use everyday. Electronic machines have parts made of mica.

UNIT VI : WORK, FORCE AND ENERGY

Chapter 10 : Simple Machines

A. 1. (b) 2. (b) 3. (c) **B.** 1. single 2. lever 3. third 4. Less 5. screw 6. wedge **C.** 1. F 2. T 3. F 4. T 5. T **D.** 1. (e) 2. (b) 3. (a) 4. (d) 5. (c) **E.** 1. A simple machine is a machine that uses a single force. It does not increase or decrease that amount of work but makes it easy by :

- Changing the direction of force.
- Increasing the distance and reducing the amount of force needed.

2. There are six types of simple machines :Lever Pulley, inclines plane, wedge, screw and wheel and axle. 3. A lever is any simple machine that turns around a fixed point. This problem is solved by fixing the door on hinges. the entire door is a simple machine called the lever. 4. There are three parts of a lever.

- First class lever : scissors, claw, hammer, pliers etc.
- Second class lever : wheelbarrow, bottle opener, nut cracker etc.
- Third class

lever : ice tongs, fishing called rod, forceps, etc. 5. (a) An inclined plane is a simple machine with a flat surface with one end higher than the other. (b) Wheel and Axle- It is a simple machine, helps into easily turn a heavy vehicle in any direction. (c) Wedge is a simple machine made up to two inclined planes. (d) Screw is an inclined plane that goes around a cylinder.

Chapter 11 : Sources of Energy

A. 1. (a) 2. (b) 3. (b) 4. (c) 5. (c) **B.** 1. falling water 2. stock 3. pollute 4. geothermal **C.** 1. F 2. T 3. F 4. F **D.** 1. (c) 2. (a) 3. (b) 4. (e) 5. (d) **E.** 1. Petroleum, natural gas and coal are called fossil fuels. 2. Renewable energy does not damage the earth and will last forever. These are called alternative sources of energy. 3. Because some sources are limited and judicious uses of energy sources to make them available for future generation. 4. It is the energy of moving air. This energy is used by windmills to generate electricity or draw water from underground. 5. There are many sources of energy such as coal, petroleum, water, wind etc.

UNIT VII : OUR UNIVERSE

Chapter 12 : The Universe

A. 1. (c) 2. (c) 3. (c) **B.** 1. moon 2. sunlight 3. shadow 4. weather satellites **C.** 1. F 2. T 3. F 4. F 5. F **D.** 1. (c) 2. (d) 3. (a) 4. (b) **E.** 1. Rocks, dust and mountains cover the surface of the moon. The surface of the moon has ditches called craters. 2. Because there is no oxygen and water on it. 3. The sound moves through atmosphere. There is no atmosphere on the moon. So we cannot hear sounds on the moon. 4. Tides are caused by the gravitational pull of the moon. Tides are the regular rise and fall of water in the sea.

UNIT VIII : OUR ENVIRONMENT

Chapter 13 : Natural Calamities

A. 1. (b) 2. (c) 3. (b) **B.** 1. seismograph 2. Richter scale 3. harbour wave **C.** 1. Disasters caused in nature are called natural calamity. 2. It is caused by sudden movements under the surface of the Earth. 3. Tsunamis are caused by undersea earthquake, volcanic eruption, etc. 4. Floods rise in the water level in rivers due to excessive rainfall.

- When floods occur, the people affected by damage crops, property, life. The conditions of famine and disease spread everywhere. 5. They are caused when big rocks and stones slide down along with mud during the rainy season.

Chapter 14 : Pollution

A. 1. (a) 2. (b) 3. (c) 4. (a) 5. (c) **B.** 1. Non-biodegradable 2. Non-biodegradable 3. water 4. Harmful effect of air pollution 5. compost **C.** 1. T 2. F 3. F 4. T 5. T **D.** 1. (c) 2. (d) 3. (e) 4. (b) 5. (a) **E.** 1. Animals, human beings, Plants are biotic components of the environment and air, water, soil, light, temperature etc. are abiotic components of the environment. 2. The thing which is not useful for us is called waste. 3. Substances or wastes that decompose into smaller particles due to action of micro-organisms or animals, are called biodegradable substances. 4. Substances or wastes that do not decompose into smaller particles due to action of micro-organisms, are called non-biodegradable substances. 5. Environmental pollution is of five types : (a) Soil pollution (b) Air pollution (c) Water pollution (d) Noise pollution (e) Thermal pollution 6. • Insecticides like DDT enter the food chain and finally enter our body. • Poisonous effects of

fertilizers make our body weak. • The crops growing in polluted soil are not healthy so they do not produce good quality of crops. 7. • Vehicles should be regularly checked to ensure that harmful gases do not exhaust from these. • Green plants should be grown in cities to reduce the air pollution. • Industries and factories should be away from the cities. 8. Industries wastes, sewage, garbage, oil spills, etc. are the main cause of water pollution.

Chapter 15 : Save Our Environment

A. 1. (a) 2. (a) 3. (b) 4. (c) **B.** 1. greenhouse 2. average 3. conservation of forest, conservation of wildlife 4. afforestation, deforestation 5. extinct **C.** 1. F 2. F 3. F 4. F 5. F 6. F 7. F **D.** 1. The act of trapping heat from the Sun in the atmosphere by some gases is called the greenhouse effect. 2. When the temperature on the Earth's surface rises then there is a huge effect of Global warming. The polar ice caps melt. Sea levels to rise and the plants, animals and buildings along coastlines would be in danger. Because, it may cause of flood. We can do some things to stop greenhouse effects such as - plant more trees, follow, the three R's rule - (i) Reduce (ii) Reuse (iii) Recycle. 3. Effect of the global warming : The warmer weather could harmful for living things. It could also cause the polar ice caps to melt. Plants, animals, and buildings along coastlines would be in danger. 4. In our daily life, we should use the three 'R's - Recycle, Reuse and Reduce. 5. There are five precautions to save the Earth. • Conservation of forest. • Conservation of wildlife. • Plantation of more and more trees. • We should follow the three 'R's rule. • We should spread awareness for the clean environment. Thus, we can save our Earth. 6. Forests give shelter and food to animals and trees give us

life-giving oxygen, food and medicines. So, the protection of forest is important for all of us. 7. Some animals are killed for medicinal value and some animals are killed for their flesh. Elephant is killed for his teeth which are very useful for making showpiece. The tiger is killed for its soft skin. Rhinoceros are killed for his horn. Their horns are very useful for weapon tools.

MODEL TEXT PAPER – I

A. 1. (b) 2. (b) 3. (c) 4. (c) 5. (c) **B.** 1. cotyledones 2. iris 3. three 4. vitamins 5. chlorine **C.** 1. false 2. true 3. true 4. false 5. true **D.** 1. When a new plants grows from a seed, it is called germination. 2. The skeletal can move at our will and involuntary muscles are not in our control. They move on their own. 3. The three main parts of the brain are—the cerebrum, the cerebellum and the medulla. 4. A diet that contains all the nutrients, roughage and water in the right proportion is called a balanced diet. 5. (a) **Boiling** : Boiling kills the germs present in water and makes the water pure. (b) **Water purifies** : we get purified water from electrical water purifier.

MODEL TEXT PAPER – II

A. 1. (b) 2. (a) 3. (c) 4. (c) 5. (a) **B.** 1. seen 2. compost 3. life, property 4. weather satellite 5. extinct **C.** 1. false 2. true 3. True 4. False 5. False **D.** 1. Both have molecules in them. 2. Matter is made up of very tiny particles called molecules. Solutions are generally solids dissolved in liquids. 3. When the temperature on the Earth's surface rises then there is a huge effect of Global warming. The polar ice caps melt. Sea levels to rise and the plants, animals and buildings along coastlines would be in danger. Because, it may cause of

flood. We can do some things to stop greenhouse effects such as - plant more trees, follow, the three R's rule - (i) Reduce (ii) Ruse (iii) Recycle.

4. Substances or wastes that decompose into smaller particles due to action of micro-organisms or animals, are called biodegradable substances. 5. The act of trapping heat from the Sun in the atmosphere by some gases is called the greenhouse effect.



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