Fly Leaf

ANSWER KEY

SCIENCE TODAY

CLASS 1 TO 5

PURPLE STROKE

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Science Today

Class - 1

CH. 1 THE WORLD - ITS THINGS Exercise (A) 1. (c) 2. (c) 3. (a) **(B)** 1. Living things. 2. Man, cow, tiger and dear. 3. The things that do not move, grow, expand and feel are known as non-living things e.g., water, stones. **(C)** 1. man made, 2. grow 3. food, energy 4. non-living things **Activity –** Students will do by themselves.

CH. 2 THE GREENERY Exercise (A) 1. (b) 2. (a) 3. (b) 4. (a) **(B)** 1. Climbers are small plants with weak stems. 2. Plants prepare their own food in the presence of sunlight. 3. Climbers have very weak stems so they can't stand by their own. 3. Big and strong plants with a trunk are known as trees. **(C)** 1. trunks 2. trees 3. climbers 4. creepers **(D)** 1. Mango, Banyan 2. Water-melon, Pumpkin 3. Money plant, Grapevine **Activity –** Students will do by themselves.

CH. 3 NOURISHING PLANTS Exercise (A) 1. (b) 2. (a) 3. (a) **(B)** 1. Wheat, Corn, Rice, Barley 2. Mustard seeds, Ground nut seeds, Sunflower seeds 3. Apple, Mango, Banana, Orange, Grapes **(C)** 1. oil 2. spice 3. dry fruit 4. cauliflower **Project Work –** Do yourself.

CH. 4 ANIMALS : THEIR VARIETIES Exercise (A) 1. (a) 2. (b) 3. (c) **(B)** 1. Insects have six legs. 2. They have wings which help them to float in the air. 3. Parrot and sparrow have two legs and tail. **(C)** 1. hop 2. scale 3. feather 4. wings

CH. 5 LIFE OF ANIMALS Exercise (A) 1. (a) 2. (c) 3. (c) **(B)** 1. Wild animals live in natural place like caves. Lions or tigers live in a 'den'. 2. The birds and hen eat grains and seeds. 3. Cows and buffaloes kept in a shed. 4. Cow, buffaloes, horse, dog are domestic animals. **(C)** 1. grains 2. flesh 3. insect 4. bear 5. plants **(D)** 1. STABLE 2. SHED 3. COOP **(E)** 1. (c) 2. (d) 3. (b) 4. (a)

CH. 6 PHYSICAL APPEARANCE Exercise (A) 1. (c) 2. (a) 3. (c) **(B)** 1. Five sense organs. 2. The tongue tells about food being tasted. 3. Fingers help in performing many activities. 4. Nose helps one to breathe and smell. **(C)** 1. help 2. walk 3. write 4. machine 5. sense **(D)** 1. (c) 2. (d) 3. (b) 4. (a) **Project –** Do yourself.

CH. 7 BASIC NECESSITIES Exercise (A) 1. (a) 2. (b) 3. (b) **(B)** 1.Milk, fruits, vegetables, cereals, pulses etc. 2. Rain coat protects from rain. 3. Drink neat and clean water because safe water good for our health. 4. Bed room, bathroom, drawing room, kitchen. **(C)** 1. clean 2. washed 3. fresh air 4. two **(D)** 1. (d) 2. (c) 3. (b) 4. (a) **Project –** Do yourself.

CH. 8 BEING HEALTHY Exercise (A) 1. (b) 2. (a) 3. (b) **(B)** 1. Posture is the manner of standing, walking or sitting. It must be proper. 2. One must walk in an upright and stand straight. 3. Physical exercise is necessary to have a strong and well built body. 4. (a) Wear clean night clothes and sleep on neat and tidy bed. (b) Never cover face while sleeping. (c) Breathe through nose and never through mouth. (d) Brush teeth regularly before sleeping. **(C)** 1. eight 2. never 3. strong 4. proper **(D)** 1. T 2. F 3. F 4. F **Project –** Do yourself.

CH. 9 BEING SAFE Exercise (A) 1. (c) 2. (c) 3. (b) (B) 1. Stand in a queue to enter the bus. 2. A medical assistance before the arrival of doctor is called First-aid. 3. In the play ground, one should – (a) Not play on the road. (b) Put on proper shoes. (c) Play in safe place. 4. Not pull or push anyone. (C) 1. moving, 2. street 3. pointed 4. objects (D) 1. (e) 2. (d) 3. (b) 4. (a)

CH. 10 ETIQUETTES Exercise (A) 1. (a) 2. (b) 3. (b) **(B)** 1. Everyone respects and loves person with a pleasing personality. 2. After cleaning mouth we feel fresh. 3. It is necessary to cut nails because we eat with our hands and if we don't cut then the germs will enter in our body. 4. (a) Avoid throwing waste papers all around. (b) Place things at their proper place (c) Avoid writing on table or walls. (d) Do not spit on floor or on the road. (e) Turn off taps after use. **(C)** 1. handker-chief 2. dust 3. rinse 4. towel **(D)** 1. (d) 2. (c) 3. (b) 4. (a) **Activity –** Do yourself.

CH. 11 OUR SURROUNDINGS Exercise (A) 1. (c) 2. (a) 3. (b) **(B)** 1. A village is a semi-developed area. It has open space and agricultural lands. The roads are not well developed. Houses are built of mud and thatched roofs. It lacks proper drainage. 2. Because neighbourhood must be clean, neat and tidy. 3. Our surrounding should be clean and green. 4. The city roads remain busy with the movement of cars, buses and other transport. **(C)** 1. night 2. beautiful 3. water-bodies **(D)** 1. F 2. F 3. T 4. F **Activity –** Do yourself.

CH. 12 AIR Exercise (A) 1. (b) 2. (a) 3. (c) **(B)** 1. Air is very necessary for all the living creatures. If there is no air, one cannot survive. 2. The strong movement of air is known as Strom. 3. It helps in breathing, to burn the fire, kites to float in the sky and in drying the washed clothes. 4. When air is blown in a balloon, it expands. The expansion shows that it occupies space. **(C)** 1. wind 2. plants 3. light 4. fly **(D)** 1. F 2. F 3. T 4. F **Activity –** Do yourself.

CH. 13 WATER – THE ESSENTIALITY Exercise (A) 1. (c) 2. (c) 3. (c) **(B)** 1. Roots of a plant carry the water to various parts of the plant. 2. No, if water is not regularly supplied, the plants may perish. 3. It is used for drinking, brushing teeth, cleaning houses, bathing, cleaning utensils, swimming, cooking, washing clothes and putting out fire. 4. Water gives life to all the living objects. So, it is necessary that water should be stored in clean containers. **(C)** 1. animals 2. thirsty 3. waste 4. clean and dry **(D)** 1. (d) 2. (c) 3. (b) 4. (a) **(E)** 1. F 2. T 3. F 4. F **Activity –** Do yourself.

CH. 14 CLIMATIC CONDITIONS Exercise (A) 1. (b) 2. (c) 3. (a) **(B)** 1. Cloudy day is a day when sky is covered with dark and black clouds. These clouds bring rain and the earth become green and cheerful. 2. There are three main seasons – summer, winter and rainy days. 3. Woollen clothes are used in winter season. 4. When days are very hot than we drink cold drinks and ice-creams and protect our body from heat. **(C)** 1. monsoon 2. windy 3. winter 4. hot **(D)** 1. (c) 2. (a) 3. (b) 4. (d) **Activity –** Do yourself.

CH. 15 HEAVENLY BODIES (A) 1. (c) 2. (c) 3. (a) **(B)** 1. The sun rises in the East and sets in the West. 2. In the night sky we see moon and millions of stars. 3. The vast sky where sun, stars, moon and cloud are present is known as space. 4. If there is no sun than it will be darkness around us as the sun gives us light and head. **(C)** 1. no 2. starts 3. different 4. The sun **(D)** 1. far 2. foot-ball 3. vitamin-D **Activity –** Do yourself.

CH. 16 MATERIALS AROUND US Exercise (A) 1. (c) 2. (d) 3. (d) **(B)** 1. The wheels of all the vehicles move with the help of rubber tyres. 2. Glass material can break easily. 3. We need to save our nature. 4. Gold, silver, copper, steel etc. 5. Plastic is strong, light and cheap. **(C)** 1. (d) 2. (e) 3. (b) 4. (c) 5. (a) **Activity –** Do yourself.

CH. 1 HUMAN BODY (A) 1. (d) 2. (c) 3. (c) 4. (b) 5. (b) **(B)** 1. Bones and muscles gives shape to our body. 2. Three types of posture :– (a) sitting posture (b) standing posture (c) walking posture 3. Bones support and protect the soft inner parts of the human body and muscles are fleshy bundles of the elastic material in the body muscles are attached to the bones. 4. Skeleton gives shape and support to our body. It also helps us to stand up right. **(C)** 1. Shoulders 2. Bones 3. Machine 4. Joint (D) 1. (e) 2. (d) 3. (b) 4. (a) 5. (c) **Activity** – Do yourself.

CH. 2 EAT WELL BE HEALTHY (A) 1. (a) 2. (c) 3. (a) 4. (a) **(B)** 1. (1) Wash your hands before and after having your meals. (2) Do not eat too much. It may make you sick. (3) Eat only fresh and clean food. (4) Chew your food well and eat slowly. (5) Drink 6 to 8 glasses of water everyday. 2. There are three kinds of food :– (a) Energy – giving food. (b) Body – building food. (c) Protective food 3. We also need plenty of water to stay fit and healthy and fibres help us to get rid of undigested food from our body. 4. We should not eat little food because it may make us weak. 5. We should not eat junk food because it may make us sick. **(C)** 1. Water 2. Same 3. Sick 4. Potatoes 5. Slowly **(D)** 1. (c) 2. (d) 3. (a) 4. (b) **Activity** – Do yourself.

CH. 3 CLOTHES WE NEED (A) 1. (d) 2. (c) 3. (a) 4. (c) 5. (d) **(B)** 1. We wear clothes to protect our body from heat, cold, dirt, dust and insects. 2. Cotton clothes are very light, absorb sweat easily and keep us cool in summer. 3. We get wool from the body hair of sheep. 4. A doctor wear white dress. **(C)** 1. Soap, detergent 2. Uniform, 3. Silk worm 4. Summer **(D)** 1. Cotton plant 2. Sheep hair 3. Silk-worm 4. Skin of animals **(E)** 1. DOCTOR 2. CHEF 3. SOLDIER 4. NURSE **Activity** – Do yourself.

CH. 4 HOUSES WE LIVE IN (A) 1. (a) 2. (a) 3. (b) 4. (c) **(B)** 1. There are two types of houses :– (a) Kutcha houses (b) Pucca houses 2. A kutcha house is a house made of mud, bamboo, straw, wood, leaves etc. (3) (a) Stilt house (b) Igloo house (c) House boat (d) Tent house 4. Pucca houses cost a lot of money but last for a long time. They are permanent buildings which don't break easily. 5. In big cities, we can see very tall modern buildings called sky scrapers. **(C)** 1. (c) 2. (d) 3. (b) 4. (f) 5. (a) 6. (e) **(D)** 1. Kutcha 2. Pucca 3. Sloping 4. House boat **Activity** – Do yourself.

CH. 5 OUR SAFETY (A) 1. (b) 2. (c) 3. (a) 4. (c) **(B)** 1. (1) (a) Always follow the rules of the game. (b) Never push or kick same one from swings or slides. (2) (a) Never play with sharp objects such as knives, blades, scissors etc. (b) Never climb on a chair or a table to get things from the upper shelves. 2. First aid is the immediate help given to an injured person, before the medical help is available. 3. Use the zebra crossing while crossing a road. 4. (a) You can avoid hurting each other by walking and not running. (b) Make a queue while boarding the school bus. **(C)** 1. Push 2. Careful 3. Railing 4. Elders **Activity** – Do yourself.

CH. 6 PLANTS – THE GREEN WORLD (A) 1. (b) 2. (c) 3. (c) 4. (b) **(B)** 1. Shrubs are smaller than trees. They have thin and woody stems. 2. (1) Morning glory (2) Water melon 3. Climbers are delicate plants with weak stems. They cannot grow straight on their own. They need support to grow upwards. Such plants are called climbers. 4. Peepal, Palm 5. Medicine, food products rubber, tea, spices, wood etc., are obtained from plants. So plants are useful to us. **(C)** 1. Creepers 2. Mint 3. Wood 4. Shrubs **Activity** – Do yourself.

CH. 7 USEFUL PLANTS (A) 1. (c) 2. (c) 3. (b) 4. (c) 5. (b) (B) 1. We get pulses and cereals from the grass family of plants. 2. Sunflowers, groundnut, coconut. 3. Tea, coffees and cocoa are beverages. 4. Carrot, Potato **(C)** 1. Medicinal 2. Cotton 3. Rubber 4. Fruits **(D)** 1. (b) 2. (d) 3. (a) 4. (e) 5. (c) **Activity** – Do yourself.

CH. 8 ANIMALS AROUND US (A) 1. (c) 2. (a) 3. (c) 4. (c) 5. (a) **(B)** 1. Some animals live in the forests. These are called wild animals. 2. Horse, donkey, elephant and camel. 3. Horse, camel, bull are used to move from one place to another. 4. We get honey from beehives. **(C)** 1. Faithful 2. Honey bee 3. Sheep 4. Dog 5. Milk **(D)** 1. (e) 2. (d) 3. (a) 4. (c) 5. (b) **Activity** – Do yourself.

CH. 9 WILD ANIMALS (A) 1. (b) 2. (c) 3. (b) 4. (c) **(B)** 1. Some animals can be tamed and live in farms and homes. These are called domestic animals. 2. Elephant, Zebra 3. Deer, Elephant 4. Lion, tiger, wolf and jackal are flesh eating animals. **(C)** 1. Pet 2. Den 3. Plant 4. Flesh 5. Sugar cane **(D)** 1. (c) 2. (d) 3. (a) 4. (e) 5. (b) 6. (f) 7. (g) 8. (h) **Activity** – Do yourself.

CH. 10 AIR EVERY WHERE (A) 1. (c) 2. (a) 3. (b) 4. (b) **(B)** 1. When air moves gently it is called breeze. 2. Clean and fresh air is called pure air. 3. Because plants help in cleaning impure air. So we should plant more trees. 4. (1) Air has water vapour, smoke and dust in it. There are germs in the air also. (2) Air also contains dust and smoke. 3. Air has germs. **(C)** 1. Breathe 2. Germs 3. Pure 4. Wind 5. Sick **(D)** 1. (b) 2. (a) 3. (e) 4. (c) 5. (d) **Activity** – Do yourself.

CH. 11 WATER (A) 1. (b) 2. (e) 3. (a) 4. (b) **(B)** 1. We need water to drink, bathe, brush our teeth. 2. (a) We must turn off tap while brushing and shaving. (b) The water left in your water bottles can be used to water plants. (c) We must get dripping and leaking taps repaired. 3. We can boil or filter water to make it pure. Boiling kills most of the germs in water. 4. The solid form of water in called Ice. 5. Hand pumps, wells are two sources of water. **(C)** 1. Water 2. Underground 3. Germs 4. Waste (D) 1. (c) 2. (d) 3. (a) 4. (b) 5. (e) Activity – Do yourself.

CH. 12 THE SUN LIGHT AND SHADOW (A) 1. (a) 2. (c) 3. (b) 4. (b) **(B)** 1. The sun is the main source of energy on the Earth. 2. Shadow is a dark area appears on the ground. 3. It is shortest at noon. 4. (a) The sun gives us heat and light. (b) Heat and light help the plants to prepare food. (c) Sun is an important source of energy. Life on the earth cannot be imagined without the sun. **(C)** 1. East 2. Noon 3. Day 4. Earth 5. Light **(D)** 1. (c) 2. (d) 3. (a) 4. (b) **Activity** – Do yourself.

CH. 13 SEASONS & WEATHER (A) 1. (a) 2. (a) 3. (b) 4. (b) 5. (b) **(B)** 1. The days are hot and long during summer. 2. We wear cotton clothes to keep ourselves cool in summer. 3. We drink plenty of water, juices and other drinks to keep us cool. 2. We wear woollen clothes to keep ourselves warm in winter. 3. When the weather remains the same for a long time, it is called a season. 4. A rainbow is a curved area of light of seven colours across the sky. Rainbow is caused by the sun's rays shining through drop of water during or after rain. (B) (a) Summer season (b) Winter season (c) Rainy season (d) Spring season (e) Autumn season **(C)** 1. Rainy 2. summer 3. Winter 4. Cotton 5. Short **(D)** 1. (b) 2. (a) 3. (d) 4. (c) **Activity** – Do yourself.

CH. 14 ROCKS AND MINERALS (A) 1. (a) 2. (c) 3. (b) 4. (c) 5. (b) (B) (a) **(B)** 1. (a) Tajmahal is in Agra. (b) Lotus temple is in Delhi. 2. The Red Fort in Delhi is made of sand stone. 3. **Rocks :** The solid mineral material forming part of the surface of the Earth. 4. You will see that almost all of them are made up of small grains. These grains are called minerals. 5. Coal is a rock formed from the remains of dead plants and animals. **(C)** 1. Shapes 2. Minerals 3. Rock 4. Sand stone 5. Chalk **(D)** 1. (b) 2. (e) 3. (d) 4. (c) 5. (a) **Activity** – Do yourself.

CH. 15 POLLUTION (A) 1. (a) 2. (c) 3. (b) 4. (a) **(B)** We use many things like soil, water, coal, petroleum oil etc., in our daily life. They are called natural resources. 2. Pollution is the process of making the air, water, or land dirty by adding harmful substance. 3. Smoke produced by burning of coal and petrol in factories causes air pollution. 4. (a) We should plant more and more trees. Trees clean the air. (b) Recycle paper, plastic and aluminium cans to reduce garbage in landfills. **(C)** 1. Air 2. Soil, Water 3. Substance **(D)** 1. Plant 2. Plant 3. Close 4. Low **Activity** – Do yourself.

CH. 16 THE EARTH (A) 1. (c) 2. (b) 3. (a) 4. (a) **(B)** 1. The earth is surrounded by a thick layer of air. This layer is called atmosphere. 2. Due to the earth's rotation only half of the earth which faces the sun, receives the sunlight and hence it will be day. The other half of the earth which does not face the sun does not receive sunlight and hence it will be night. 3. The earth's shape is like an orange. Initially people thought that the shape of the earth was flat. In the long run scientists discovered that our Earth is actually spherical in shape. 4. The earth moves around the sun in a fixed path called the earth's orbit. The movement of the earth around the sun in an orbit is called revolution. 5. There are three layers of the earth :– 1. Crust 2. Core 3. Mantle **(C)** 1. Spins 2. Axis 3. Day, night 4. 365 **(D)** 1. True 2. True 3. True **(E)** 1. Mantle 2. Rotation and Revolution 3. Atmosphere **(F)** 1. (a) 2. (d) 3. (e) 4. (b) 5. (c) **Activity** – Do yourself.

Class - 3

CH. 1 FOOD AND FEEDING HABITS OF ANIMALS (A) 1. (c) 2. (d) 3. (a) 4. (a) **(B)** 1. gnaw 2. snakes 3. proboscis 4. carnivores 5. sharp 6. a frog **(C)** 1. f 2. e 3. b 4. d 5. c 6. a **(D)** 1. Butterfly, Mosquito 2. Cows, Buffaloes 3. Bear, Crow 4. Cat, Dog 5. Mice, Rabbit **(E)** 1. Carnivore 2. Herbivore 3. Omnivore 4. Chew the cud **(F)** 1. Carnivores have sharp, pointed and curved teeth to tear the flesh. 2. Animals need food to grow and remain healthy. They get energy from food. 3. Butterflies and mosquitoes have a feeding tube in place of mouth this tube is called proboscis. A mosquito uses it to suck food. 4. Frogs have a long sticky tongue. They shoot out the tongue to catch insects. 5. Cows and buffaloes swallow their food after chewing once. Later they bring it back into their mouth and keep chewing it for hours. This is called chewing the cud. Example cow and buffalo. 6. A chain that shows how plants are eaten by animals and then animals are eaten by other animals is called food chain. Example a zebra eats grass and lion eats zebra. **Let's Recall –** 1. Chew the curd 2. gnaw 3. tear the flesh 4. swallow 5. suck their food 6. sticky **Activity –** Students do by themselves.

CH. 2 OUR FOOD (A) 1. (b) 2. (d) 3. (a) 4. (b) **(B)** 1. nutrients 2. proteins 3. milk 4. milk 5. caries **(C)** 1. True 2. False 3. False 4. True 5. False **(D)** 1. Vegetable and fruits 2. Rice and potato 3. Milk and eggs 4. Milk and permanent **(E)** 1. If we do not eat enough proper food we will become weak and unhealthy. Then we are not able do work. 2. Food gives us energy to do work. 3. Proteins are necessary for the growth and repair of the wear and tear of our body. 4. (a) We use our teeth for eating food. (b) We also use our teeth while speaking. **(F)** 1. Whenever we eat, some food particles get stuck in our teeth or in the gaps between the teeth. The food particles remain in our mouth that gives us bad breath and our teeth start decaying. 2. To prevent tooth decay we should brush our teeth twice a day, massage our gums and should visit dentist regularly. 3. Foods that have different nourishing substances which we need to live and grow. These substances are called nutrients. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 3 SAFETY RULES (A) 1. (c) 2. (a) 3. (b) 4. (a) **(B)** 1. cupboard 2. face 3. climb 4. rules 5. strangers **(C)** 1. False 2. False 3. True 4. True 5. True **(D)** 1. d 2. e 3. a 4. c 5. b **(E)** 1. Scissor and knife 2. Yellow and green 3. Dettol, cotton **(F)** 1. Accident 2. Subway 3. Go **(G)** 1. We can avoid injuries by following simple safety rules. 2. We should use subway when we have to cross a busiest roads. 3. The immediate help given to an injured person is called first aid. **(H)** 1. If someone has burnt his finger, pour cold water on the burn. Then apply an antiseptic burn ointment and cover it. 2. (a) Do not fight with your classmates. (b) Do not run around the classroom and climb on the desk. (c) Do not throw things around. 3. (a) Do not hide in the cupboards. (b) Do not play with matchsticks. (c) Do not play with electrical appliances. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 4 HOUSING AND CLOTHING (A) 1. (c) 2. (a) 3. (c) 4. (d) **(B)** 1. house 2. strong 3. spun 4. covered 5. natural **(C)** 1. True 2. True 3. False 4. True 5. False **(D)** 1. e 2. d 3. a 4. b 5. c **(E)** 1. Dustbin and wire netting 2. Cotton, jute 3. Wool, silk 4. Nylon, rayon **(F)** 1. Dustbin 2. Spinning wheel 3. Waterproof material 4. Cocoon **(G)** 1. A good house must have (a) Wire netting on door and windows to stop the entry of insects. (b) Floors should be cleaned daily. (c) Covered dustbin should be kept. 2. Door and windows should have wire netting to stop the entry of insects like mosquito and flies. 3. We need clothes to protect our body from sun, wind, rain, cold and dust. 4. Fibres that are produced in factories are called synthetic fibres. Example – Nylon and Rayon. 5. Fibres that we get from plants and animals are called natural fibres. Example – Cotton and Jute. **(H)** 1. The three ways to keep house clean are – (a) Household wastes should be thrown into dustbins. (b) Bathrooms and toilets should be cleaned regularly. (c) Objects should be kept at their right places. 2. In summer we wear light coloured cotton clothes. Such clothes allow heat to escape from our body. Light coloured clothes absorb very little sunlight. They keep us cool. 3. In winter we wear dark coloured clothes made from woollen clothes do not allow the body heat to escape, so we feel warm. Dark coloured clothes absorb sunlight. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 5 SOLIDS, LIQUIDS AND GASES (A) 1. (b) 2. (d) 3. (a) 4. (d) **(B)** 1. three 2. cannot 3. liquid 4. watervapour 5. gases **(C)** 1. True 2. False 3. True 4. True 5. False **(D)** 1. c 2. d 3. a 4. e 5. b **(E)** 1. melting, evaporation 2. furniture, brick 3. milk, oil 4. oxygen, carbon dioxide **(F)** 1. Solid 2. Liquid 3. Evaporation 4. Melting 5. Condensation **(G)** 1. solid, liquid and gas 2. Things that have a definite shape are called solids. Examples – pen, eraser. 3. Liquid are substances that do not have any shape and flow easily. Example – water, milk. 4. Gases do not have definite shape and spread out in all directions. Example – oxygen, carbon dioxide **(H)** 1. When water is boiled it changes into water vapour. 2. (a) Solid have a definite shape but liquid do not have any definite shape. (b) Solid cannot flow whereas liquid flow easily. 3. The process of changing liquid into gas on heating is called evaporation. Whereas condensation is a process in which gas changes into liquid on cooling. 4. Ice is the solid state of water. It turns into liquid if you keep it outside the refrigerator. And if we boil this water it changes into water vapour. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 6 LIVING AND NON-LIVING THING (A) 1. (c) 2. (c) 3. (a) 4. (b) **(B)** 1. eggs 2. food and shelter 3. green 4. non-living 5. stomata **(C)** 1. True 2. True 3. False 4. True 5. True **(D)** 1. c 2. d 3. a 4. b **(E)** 1. nose, air holes 2. snake, duck 3. growth, flower 4. food, water 5. cat, dog **(F)** 1. reproduction 2. antennae 3. wings 4. stomata 5. table, chair **(G)** 1. Living things need food to get energy to do work. 2. Animals move from one place to another in search of food and shelter. 3. Human and animal. 4. Plants can feel the presence of sunlight and their branches try to grow towards it. Plants root grow towards

the area where water is easily available. **(H)** 1. We breathe through our nose. Several other animals breathe through their noses. Cockroaches, butterflies and mosquitoes breathe through air holes in their body. Plants breathe through tiny pores called stomata present in their leaves. 2. Most animals feel or sense changes around them with the help of their sense organs. Animals like cockroaches and butterfly have special body parts called antennae which help them to feel changes around them. 3. The process by which living things produce more of their own kind is called reproduction. Plants reproduce with the help of seeds. Some plants also give rise to new plants with the help of their roots, stems or leaves. 4. Dogs – Dogs walk by using their legs. Fish – Fish swim with the help of fins and tail. Bird – Birds use wings to fly. 5. The four difference between living and non-livings things are – (a) Living things can move on their own but non-living things cannot move on their own. (b) Living things grow with time but non-living things do not grow with time. (c) Living things need air to breathe but non-living things do not breathe. (d) Living things need food to grow but non-living things do not need food. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 7 PARTS OF A PLANT (A) 1. (c) 2. (a) 3. (c) 4. (a) 5. (c) 6. (d) **(B)** 1. carrot 2. seed 3. oxygen 4. shoot 5. fibrous **(C)** 1. True 2. False 3. False 4. True 5. True **(D)** 1. d 2. e 3. a 4. b 5. c **(E)** 1. Carrot, Turnip 2. Sugarcane, Potato 3. Spinach, Cabbage 4. Papaya, Peach 5. Mustard, Cumin **(F)** 1. Root 2. Trunk 3. Veins 4. Chlorophyll 5. Germination **(G)** 1. The two main parts of plant are – root and shoot. 2. When a seed gets the right amount of air, water and light, it grows into a healthy plants. 3. Tap root consists of single, thick root from which small root grows. Where as fibrous roots consist of many thread like roots which grow into the soil. 4. Leaves are known as the kitchen of the plant because they make food for the plant. 5. Flowers are important to a plant as they help it to reproduce. 6. Seeds that can be eaten by us are called edible seeds. Example – wheat, corn. **(H)** 1. The three importance of stems are – (a) It keeps plant upright and straight. (b) Leaves, buds, flowers and fruits grow on stem. (c) The stems help in carrying water and food to different parts of the plant. 2. The three importance of roots are – (a) It helps the plant to stay fixed to the soil. (b) It takes in water and minerals from the soil. (c) Some plants store food in their roots. 3. The three importance of leaves are – (a) Leaves give out gas called oxygen which is essential for life. (b) Leaves make food for plant. (c) Leaves of some plant store food. 4. The growth of a seed into a new plant is called germination. A seed needs right amount of air, water and light to grow into a healthy plant. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 8 BIRDS: FOOD AND MORE (A) 1. (b) 2. (c) 3. (d) 4. (a) 5. (b) **(B)** 1. weaver 2. down 3. webbed 4. strong muscles 5. different (C) 1. False 2. True 3. True 4. False 5. False (D) 1. e 2. f 3. a 4. c 5. d 6. b (E) 1. Sparrow, Peacock 2. Woodpecker 3. Humming bird 4. Hen 5. Crane, Herons (F) 1. beak 2. talons 3. wings 4. feather (G) 1. The woodpecker has a strong and pointed beak because it acts like a chisel to remove bark and find insects hiding inside. 2. The body of a bird is shaped like a boat. Their bones are hollow and light. The tail helps with the speed and direction. These features of a bird help it to fly easily. 3. Like humans birds also need a place to live in so they build a home which is known as nest. 4. The bird parent push food down the baby bird's throats. 5. Hens scratch the ground for seeds and worms. They have strong legs with three toes in front and one at back. (H) 1. The sparrow, pigeon and peacock eat nuts and seeds. They have short, hard and pointed beaks to pick up seeds and worms. Parakeets have a strong and curved beak to crack open fruits and nuts. The swallow feeds on insects while flying in air. It has a short and broad beak which is sticky on the inside. The insects get stuck

inside the sticky beak. The woodpecker has a strong and pointed beak which acts like a chisel to remove bark and find insects hiding inside. A humming bird has a long, thin and pointed beak to suck nectar from flowers. A hoopoe has a long, thin and slightly curved beak to pull out insects from holes in the ground. Ducks and swans have broad and flat beaks with tiny holes at the sides. They scoop muddy water along with plants and insects. Kingfishers and herons eat fish. They have long, broad and pointed beaks to pick up fish from water. Birds of prey like eagles, hawks, kites and vultures have strong, sharp and hooked beaks to tear the flesh. 2. Birds like sparrow and crows have three toes in front and one at the back. They use these toes to firmly hold on to the branch of a tree and sit on it. This is called perching. The grip is so firm that they do not fall off even when they are sleeping on the branch. Perching birds use their feet to sit whereas flesh eating animals use their feet to capture their prey. 3. Swimming birds like ducks have webbed feet. They have three toes in front and one at the back. The front toes are joined by flaps of skin called web. They use the webbed feet like paddles to push back the water while swimming. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 9 MAN : THE LIVING MACHINE (A) 1. (c) 2. (a) 3. (d) 4. (b) 5. (d) **(B)** 1. organs 2. circulatory 3. blood vessels 4. bones 5. inhaled 6. brain **(C)** 1. False 2. False 3. True 4. False **(D)** 1. c 2. d 3. e 4. b 5. a **(E)** 1. Mouth, Stomach 2. Nose, Lungs 3. Brain, Spinal cord 4. Heart, Blood vessel 5. Kidney, Large Intestine (F) 1. Cells 2. Digestion 3. Brain 4. Nerves 5. Heart **(G)** 1. Cells are the building blocks of our body. 2. Muscles help us to move different parts of our body. 3. In the stomach, food get mixes with the digestive juice. The food then goes to small intestine. 4. The nervous system controls all our actions. **(H)** 1. The bones in our body make up the skeleton system. All bones are joined together to form the skeleton. The skeleton gives shape and support to our body. Bones help us to stand, walk and move. The skeleton also protects the internal organs of our body. 2. The digestive system helps to break the food that we eat into simple form so that it can be used by the body. The digestive system starts in the mouth. The food is broken down into smaller pieces by chewing with the help of our teeth. The food is mixed with a juice called saliva in the mouth. Then it goes through the food pipe to the stomach. In the stomach, it mixes with the digestive juices. The food then goes to the small intestine. Here the useful part of the food is taken in by the blood and sent to different parts of the body. The undigested food passes from the small intestine to the large intestine. From there it is thrown out of the body through the anus. 3. The nose, the windpipe and the lungs are the organs which work together to form the respiratory system. We use our nose to breathe. The air we breathe in is called inhaled air. The air goes down the windpipe and reaches the lungs after which the air is breathed out. The air we breathe out is called exhaled air. 4. The heart, the blood and the blood vessels make up the circulatory system. The heart pumps the blood to all the parts of the body. The blood goes to all the parts of your body through thin tubes called blood vessels. Blood is a red-coloured liquid that transports gases and nutrients throughout the body. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 10 MEASUREMENT (A) 1. (b) 2. (a) 3. (d) 4. (a) 5. (b) **(B)** 1. thermometer 2. litres 3. m 4. ^{0}C **(C)** 1. True 2. False 3. False 4. True 5. True **(D)** 1. d 2. e 3. b 4. a 5. c **(E)** 1. Metres 2. Mass of object 3. Capacity 4. Time **(F)** 1. Kg 2. Grams 3. L 4. *ml* 5. hours **(G)** 1. Handspan and footspan 2. Meter and centimeter 3. The amount of material an object contains is known as mass. The unit for measuring mass is kilogram and grams. 4. We use weighing balance to find the mass of an object. 5. We use a thermometer to

measure temperature. **(H)** 1. In the olden days, people used to measure length by comparing them with the length of some of their body parts like hand, arm, foot or steps. They used stones of various sizes to weigh solid objects and pots or containers of their own choice to measure the quantity of grains or liquids. 2. The length of an object differed from person to person depending on the length of their arms. Similarly, stones used by different persons differed in weights and the sizes of containers used were also different. These differences often led to confusion and quarrels between people. So people felt the need to keep the measure of a thing uniform for everyone. They developed fixed measures to find out the quantity of different things. These fixed measures are called units. 3. The quantity of liquid a container can hold is known as capacity. Liquids are measured in units called litres (*l*). Litres is the commonly used unit for measuring capacity. Smaller amounts of liquid are measured in millilitres, litres is written as 'L' and millilitres is written as '*ml*'. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

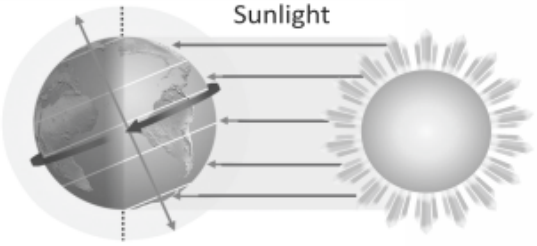
CH. 11 LIGHT, SOUND AND FORCE (A) 1. (c) 2. (d) 3. (d) 4. (a) 5. (a) 6. (b) **(B)** 1. opposite 2. shortest 3. unpleasant 4. force 5. straight **(C)** 1. True 2. False 3. False 4. True 5. True **(D)** 1. c 2. d 3. e 4. a 5. b **(E)** 1. Touch, Candle 2. Paper, Table 3. Music, Chirping of birds 4. Cracker, Loudspeaker 5. Horns of vehicle, Cracker **(F)** 1. Shadow 2. Ear 3. Force 4. Friction 5. Noise **(G)** 1. Sun is the main source of heat and light on Earth. 2. Loud sound is called noise. 3. We hear with our ears. 4. Objects that give out light are called luminous objects. Example – Torch, lamp. 5. Things move when we apply force on them i.e. by pushing or pulling. **(H)** 1. Luminous – (a) Objects that give out light are called luminous objects. (b) We get light from these objects. Examples – torch, lamp. Non Luminous – (a) Objects that do not give out light are called non-luminous objects. (b) We can see these only when light falls on them. Example – paper, table. 2. When an object blocks the path of light, a dark area is formed on the ground or wall behind it. This area is called shadow. A shadow is always formed on the opposite side of the light. 3. Sound is produced by vibrations. Vibrations are fast to-and-fro movement. When air vibrates, sound is produced. We hear sounds when the vibrations reach our ears. Some sounds are soft and pleasant. Music is a pleasant sound. Some sound are loud and unpleasant. Sound of crackers and horns of vehicles are unpleasant sounds. 4. Pushes and pulls are called force. Force can do the following – (a) Force can move an object. (b) Force can stop a moving object. (c) Force can change the direction of a moving object. (d) Force can bend and break things. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 12 WEATHER (A) 1. (d) 2. (b) 3. (b) **(B)** 1. afternoon 2. humid 3. weather 4. flood 5. summer **(C)** 1. True 2. False 3. True 4. False 5. True **(D)** 1. e 2. a 3. f 4. b 5. d 6. c **(E)** 1. Sun 2. Cloud 3. Air **(F)** 1. Breeze 2. Humidity 3. Meteorologist 4. Drought **(G)** 1. The morning and evening are cooler parts of the day because we receive slanting rays of the sun. 2. It is humid. 3. When hot air rises up, cold air from surrounding areas rushes in to take its place and a wind is produced. 4. A season is a division of the year marked by changes in weather. 5. No weather keeps on changing it does not remain same. **(H)** 1. The Sun, humidity, wind, clouds and rains. 2. The Sun's heat plays an important role in evaporation of water. When there is more heat, we see more evaporation. This leads to the presence of more water vapour in air. The weather is said to be humid. Humidity is the amount of water vapour present in air. Humid air can store a lot of heat. So, humid days are generally warm. 3. A storm causes a lot of damage. It can uproot trees, old and weak building too collapse. 4. Less rains cause drought. If there is drought, the crops do not grow and there will be shortage of water. 5. We get mangoes, watermelon,

muskmelon, guava. **Let's Evaluate –** Students do by themselves. **Activity – 1.** (a) W (b) R (c) W (d) S (e) S (f) R (g) S (h) W **2.** 1. Cloud 2. Storm 3. Oxygen 4. Noon 5. Loo

CH. 13 POLLUTION (A) 1. (d) 2. (a) 3. (d) 4. (a) **(B)** 1. air 2. poisnous 3. smoke 4. deafness 5. fewer **(C)** 1. Water 2. Chemicals 3. Cities 4. Noise **(D)** 1. b 2. e 3. d 4. c 5. a **(E)** 1. Horns, Crackers 2. Chemicals, Human waste 3. Garbage, Chemicals 4. Burning fire, Smoke of vehicles **(F)** 1. Typhoid 2. Trees 3. Chemical 4. Pollution **(G)** 1. Noise Pollution, Air Pollution, Water Pollution and Soil Pollution. 2. Three sources of smoke are – (a) Burning fire (b) Vehicles (c) Crackers 3. When we burn something smokes is released into the air. Poisnous gases are given out and get mixed in the air around us. 4. The two causes of water pollution are – (a) Waste materials from factories are released into streams, lakes and rivers. (b) Washing clothes and vehicles near water sources also pollutes water. **(H)** 1. Farmers spray chemicals to kill insects which eat the crops. But along with the insects it also kills small living things which are good for the soil. Plant roots absorb these chemicals along with water. These chemicals then reach leaves and fruits through the stems. When anyone eats the leaves and fruits, they fall ill. 2. Sometimes people throw a lot of garbage and harmful chemicals into the soil. The chemical gets mix with the soil. This pollutes the soil. 3. Many people live in cities. The living areas are very crowded. There is a lot of garbage. There are plastic bags thrown around. There are slums where people do not live in a healthy environment. There are too many vehicles on roads which give out fumes. There are factories which give out smoke. Therefore, our cities are very polluted. 4. Typhoid and cholera are caused by drinking polluted water. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

CH. 14 OUR EARTH & ITS NEIGHBOURS (A) 1. (b) 2. (d) 3. (a) 4. (b) 5. (c) **(B)** 1. 24 hours 2. one year 3. mercury 4. satellite **(C)** 1. False 2. True 3. False 4. True 5. True **(D)** 1. d 2. e 3. a 4. b 5. c **(E)** 1. Earth, Mars 2. Aryabhatta, Bhaskar **(F)** 1. Orbit 2. Neptune 3. Axis 4. Crescent Moon 5. Craters **(G)** 1. Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. 2. The shape of the Earth is round. 3. A group of stars together form a pattern known as constellation. 4. Aryabhatta was the first person to state that the Earth is round and rotate on its own axis. 5. Half of the Earth is always facing the Sun and the other half is away from the Sun. The part of the Earth facing the sun receives sunlight and has day. The other half which is away from the Sun is in darkness and has night. As the Earth rotates, the side of the Earth which was in darkness gradually comes to face the Sun and has daytime. As a result, the side which had day is now in darkness and has night. Thus, rotation causes day and night. **(H)** 1. When human beings travelled to space and looked at the Earth from thousands of kilometres up in the sky, they found it to be a round body floating in the sky. The photographs taken by them also showed that the Earth is round. 2. See the answer no. (G) 5. 3. Galileo Galilie an Italian scientist made the first telescope. The stars and the planets can be seen in much larger size and more clearly through telescope. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.



CH. 15 GOING INTO SPACE (A) 1. (a) 2. (d) 3. (b) 4. (c) 5. (b) **(B)** 1. atmosphere 2. astronauts 3. Neil Armstrong 4. Rakesh Sharma **(C)** 1. True 2. False 3. False 4. False 5. True **(D)** 1. c 2. b 3. d 4. e 5. a **(E)** 1. Rakesh Sharma, Kalpana Chawla 2. Aryabhatta, Bhaskar 3. Chandrayan-I 4. Oxygen, Temperature Control 5. Sunita Williams, Kalpana Chawla **(F)** 1. Space Shuttle 2. Yuri Gagarin 3. Columbia 4. Space 5.

Aryabhatta **(G)** 1. Beyond the atmosphere is the never-ending zone called space. 2. The force of gravity attracts and holds the things on Earth from falling into space. 3. Neil Armstrong was first person to set foot on the Moon on 20 July, 1969. 4. People who travel in space are known as astronaut. 5. Aryabhatta and Bhaskar. **(H)** 1. Kalpana Chawla and Sunita Williams 2. Atmosphere is the layer of air surrounding the Earth. 3. Astronaut wear special spacesuit which provide oxygen, temperature control and protection from harmful rays. 4. They carry many machines with them to carry out experiments. **Let's Evaluate –** Students do by themselves. **Activity –** Students do by themselves.

MODEL TEST PAPER – 1 (A) 1. Mosquito have a feeding tube in place of mouth. This tube is called proboscis. 2. (a) Our teeth help us to chew food. (b) Teeth help us to speak. 3. Nutrients are different nourishing substances which we need to live and grow. 4. The immediate help given to an injured person is called first-aid. 5. (a) Do not run around the classroom or climb on the desk. (b) Do not fight and run on stairs. **(B)** 1. frog 2. probosics 3. nutrients 4. strangers 5. caries **(C)** 1. Dettol, Cotton 2. Vegetable, Fruits 3. Temporary, Permanent 4. Cow, Buffalo 5. Deer, Cow **(D)** 1. True 2. False 3. False 4. True 5. False

MODEL TEST PAPER – 2 (A) 1. (a) A good house must have proper ventilation. (b) It should be cleaned regularly. (c) Wire netting should be used to avoid mosquitoes. 2. The process in which a liquid changes into gas on heating is called evaporation. 3. Difference between living things & non-living things – Living Things – (a) Living things can move on their own. (b) Living things grow with time. (c) Living things need air to breathe. (d) Living things need food to grow. (e) Living things feel changes around them. (f) Living things reproduce. (g) Human beings, plants and animals are examples of living things. Non-Living Things – (a) Non-living things cannot move on their own. (b) Non-living things do not grow with time. (c) Non-living things do not breathe. (d) Non-living things do not need food. (e) Non-living things do not feel changes around them. (f) Non-living things do not reproduce. (g) Book, pencil and chair are examples of non-living things. 4. The growth of a seed into a new plant is called germination. 5. Tap roots are single, thick root whereas fibrous roots are consists of many thread like roots. **(B)** 1. strong 2. oxygen 3. vapour 4. food 5. stomata **(C)** 1. d 2. a 3. e 4. b 5. c **(D)** 1. Melting 2. Reproduction 3. Table 4. Coccoon 5. Veins

MODEL TEST PAPER – 3 (A) 1. The parents bird push food down the baby bird's throats. 2. The digestive system helps to break the food that we eat into simple form so that it can be used by the body. The digestive system starts in the mouth. The food is broken down into smaller pieces by chewing with the help of our teeth. The food is mixed with a juice called saliva in the mouth. Then it goes through the food pipe to the stomach. In the stomach, it mixes with the digestive juices. The food then goes to the small intestine. Here the useful part of the food is taken in by the blood and sent to different parts of the body. The undigested food passes from the small intestine to the large intestine. From there it is thrown out of the body through the anus. 3. The nose, the windpipe and the lungs are the organs which work together to form the respiratory system. We use our nose to breathe. The air we breathe in is called inhaled air. The air goes down the windpipe and reaches the lungs after which the air is breathed out. The air we breathe out is called exhaled air. 4. Time is measured in hours, minutes and second. The smallest unit of time is a second. Large periods of time are measured in minutes and hours. 1 hour = 60 minutes, 1 minutes = 60 seconds 5. Sound is produced by vibrations. Vibrations are fast to-and-fro movement. When air vibrates, sound is produced. We hear sounds when the vibrations reach our ears. Some sounds are soft and pleasant. Music is a pleasant sound. Some

sound are loud and unpleasant. Sound of crackers and horns of vehicles are unpleasant sounds. **(B)** 1. noise 2. force 3. litres 4. respiratory 5. webbed **(C)** 1. Hens 2. Brain, Spinal cord 3. Metre, Centimetre 4. Torch, Candle 5. Sweat, Carbon Dioxide **(D)** 1. Saliva 2. Talons 3. Cells 4. Hours 5. Shadow

MODEL TEST PAPER – 4 (A) 1. The Sun's heat play an important role in evaporation of water when there is more heat, we see evaporation. This leads to presence of more water vapour in air. The weather is said to be humid. 2. A season is a division of the year marked by changes in weather. 3. Plants roots absorb these chemicals along with water. These chemicals then reach leaves and fruits through the stems. 4. Half of the Earth is always facing the Sun and the other half is away from the Sun. The part of the Earth facing the sun receives sunlight and has day. The other half which is away from the Sun is in darkness and has night. As the Earth rotates, the side of the Earth which was in darkness gradually comes to face the Sun and has daytime. As a result, the side which had day is now in darkness and has night. Thus, rotation causes day and night. 5. The Earth is surrounded by a layer of air which is several kilometres thick. It is called atmosphere. **(B)** 1. Astronaut 2. Mercury 3. Satellite 4. Smoke 5. Weather **(C)** 1. Meteorologist 2. Space 3. Craters 4. Typhoid 5. Drought **(D)** 1. True 2. False 3. True 3. True 4. False 5. False

Class - 4

CH.- 1 ANIMALS: HOW LIFE GOES ON (A) (1) a (2) a (3) a (4) a (5) a **(B)** 1. Mammals 2. Nests 3. Maggot 4. Snakes **(C)** 1. False 2. True 3. False 4. True 5. False **(D)** 1. c 2. b 3. a 4. e 5. d **(E)** 1. Lizard, Snakes 2. Cockroaches, Grasshopper 3. Sparrow, crow 4. Bat **(F)** 1. Caterpillar 2. Yolk 3. Pigeon 4. Life cycle **(G)** 1. Grasshopper and cockroaches are the insects which have three stages in their lifecycle. 2. The four stages in the lifecycle of a butterfly are egg, caterpillar, pupa, adult butterfly. 3. The birds reproduce by laying eggs. They build nests to lay their eggs. They sit on the eggs to keep them warm. The eggs hatch after some time and baby birds come out. 4. The animals reproduce in two different ways. Some give birth to young ones, whereas some lay eggs. 5. The mother cares for the young. She feeds the babies, cleans them and keeps them warm. She protects them from enemies. 6. The baby insect which comes out of the eggs is called a nymph. **(H)** 1. The lifecycle of a frog has four cycles. The egg cluster of the frog is called spawn, develops into a tadpole. Then it grows and changes into a young frog. The legs grow longer and tail grows shorter and the adult frog has no tail. 2. The process of growing into an adult frog from the tadpole is called metamorphosis. 3. Each egg has a hard protective outer shell. Within the shell is the egg white called albumin. Within the albumin is the round , yellow yolk. 4. Fish reproduce by laying eggs in water. They lay thousands of eggs at a time. Out of these, only a few hundred grow into baby fish. **(LETS EVELUATE THEM) : Ans.** Humans are also called mammals. They give birth to their babies and take care of them. They feed them and protect them from bad climate. **ACTIVITY :** Children will visit a pond to observe the young ones of frogs and fishes. **PROJECT WORK :** Children will read the project themselves. **(GROUP DISCUSSION) :** Reproduction is important to keep the cycle of species in existence. It ensures the survival of the same beings on the earth.

CH. - 2 ANIMALS: LIVING AND SURVIVING (A) (1) a (2) c (3) a (4) c (5) c (6) a **(B)** 1. fins 2. fur, heat 3. herbivores 4. quills 5. hibernation **(C)** 1. True 2. False 3. True 4. False 5. False 6. True **(D)** 1. b 2. a 3. e 4. e 5. c **(E)** 1. Vulture, Eagle 2. Deer, Buffalo 3. Mosquito, Leeches 4. Tiger, Chameleon **(F)** 1. Omnivores 2. Adaptation 3. Scale 4. Host **(G)** 1. The ability to change with their surroundings is called adaptation. 2. Herbivores animals have long and strong legs to travel long distance in search of food. 3. Aerial

animals have light bodies because of light bones and feathers. 4. Animals protect themselves from their enemies by camouflage. It helps them to merge with their surroundings. 5. The animals like leaf insects look like a leaf so it becomes easy for them to protect themselves from their enemies. **(H)** 1. The different types of animals on the basis of the food they eat are as follows:- (i) Herbivores: They are plant eating animals. They have sharp biting and strong grinding teeth to chew food. (ii) Carnivores: They are the flesh eating animals. They have sharp teeth or beaks and claws to catch their prey. (iii) Omnivores: They are the animals who can eat both plants and animals. (iv) Parasites: They are the animals who live on or inside the bodies of other animals for their food. 2. Animals who live on the land are called the terrestrial animal like camel, giraffe etc. while the animals who live in water are called the aquatic animals like fish, turtles etc 3. Parasitic animals live on or inside the bodies of other animals for their food. **(I)**

	TERRESTRIAL	AQUATIC	AMPHIBIAN	AERIAL	ARBOREAL
MOVEMENT	Legs	Fins	Limbs	Lungs	Claws
BREATHING ORGANS	Lungs	Gills	Moist skin (Water) Lungs (Land)	Lungs	Lungs
EXAMPLES	Cow	Fish	Frog	Bird	Monkey

(LETS EVALUATE) : Ans. Arctic fox cannot be easily spotted in polar regions because they blend their skin with the surroundings with the help of camouflage. It helps it to protect itself from its enemies. **(ACTIVITY) :** Children will draw pictures themselves. **(PROJECT WORK) :** Children will paste pictures themselves. **(GROUP DISCUSSION): Ans.** Fish hide itself from its enemies .The elephants use their strength to save themselves from their enemies while the leaf insect which appears like a leaf itself easily protect itself from its enemies.

CH. - 3 GREEN PLANTS: PROCEDURE OF FOOD (A) (1) a (2) a (3) c (4) b (5) b **(B)** 1. photosynthesis 2. producer 3. chlorophyll 4. stomata 5. mushrooms 6. oxygen **(C)** 1. False 2. False 3. True 4. False 5. True **(D)** 1. c 2. e 3. b 4. d 5. a **(E)** 1. Moulds , Mushroom 2). Chipko Movement, Appiko Movement 3. Leaf, Stem 4. Spinach, Peas **(F)** 1. Stomata 2. Chlorophyll 3. Photosynthesis **(G)** 1. The thick fleshy stem of the cactus plant prepares food for the plant. 2. We need to take a leaf. Boil it in water and then boil it in alcohol. Wash it in cold water. Add few drops of iodine . If the starch is present, the leaf will turn blue-black otherwise remain brown. 3. The plant use their food to get energy and for growth. The extra food is stored in the form of starch in leaves, stems and roots. 4. The plants without chlorophyll survive by photosynthesis. They need a sunny day to perform their photosynthesis. 5. A balance between plants and animals is essential for life to survive on the Earth. **(H)** 1. The flat part of a leaf is leaf blade. It is attached to stem by stalk. Each leaf generally has one main vein called midrib and many side veins. 2. If there is a sudden increase in the number of plants , the carbon dioxide breathed out by animals may not be enough for the plants. 3. The green plants trap the Sun's energy during photosynthesis to prepare food. This energy is passed on to humans and animals when they eat the plant. This way energy flows from the Sun to plants and then to animals and human beings. 4. The people can be made aware of the importance of trees by organizing programmes like Van Mahotsav. **(LETS EVELUATE) Ans.** A cactus plant produce their food through photosynthesis that occurs in their pads, which are modified stems. **ACTIVITY :** Children will prepare a plant book themselves. **PROJECT WORK :** Children will prepare the project work themselves. **(GROUP DISCUSSION) : Ans.** Plants use their resources they

have produced from photosynthesis and respiration to grow, flower, seed or produce fruit which is another form of plant seed.

CH. - 4 PLANTS: LIVING AND SURVIVING (A) (1) b (2) c (3) b (4) a (5) a **(B)** 1. Direct 2. Small 3 Hot, Damp 4. Mangroves 5. Leaves **(C)** 1. True 2. False 3. true 4. True 5. False **(D)** 1. b 2. a 3. c 4. d 5. f 6. e **(E)** 1. Duckweed, Water Lettuce 2. Pine, Fir 3. Mango, Peepal 4. Teak, Coconut **(F)** 1. Aquatic 2. Insectivorous 3. Conifers 4. Breathing Roots **(G)** 1. Pitcher plant and Venus Flytrap are the two insectivorous plant. 2. A cactus is the plant which has spines instead of leaves. 3. The roots of the plants grown in marshy places do not get air as the soil is covered with water. So, the roots grow out of the soil and water to breathe. 4. The stem of the Lotus plant is hollow and light which keeps the leaves and the flowers afloat. The leaves are broad and have stomata only on the upper side. 5. People eat parts of grasses. Corn, wheat, barley, oats, rice and millets are cereals, common grains whose seeds are used for food. **(H)** 1. The plants that grow in water are called aquatic plants. They are of the following types:- (a) Floating plants : These plants float in water because they are either light or small in size. Examples are: Duckweed and Water Lettuce etc. (b) Fixed plants : These plants are fixed to the bed of the pond. Examples are Lotus and Water Lily etc. (c) Underwater plants : These plants have long, ribbon-like narrow leaves. They breathe through their body surface. Examples are. Tape grass and Pondweed etc. 2. The deciduous trees grow in the plains and shed their leaves in the winter season only. Examples are Mango and Sheesham. But the evergreen trees remain green throughout the year. Examples are Coconut and Teak. 3. The insectivorous plants have leaves that is folded into two halves as soon as an insect sits on the leaf. The two halves close and the insect is trapped. The non-green plants are not able to make their own food because they do not have chlorophyll .So they cannot make their own food by photosynthesis. **(LETS EVALUATE) : Ans.** The seeds of grass are not sown again and again because the seeds and stems remain alive in the soil. **ACTIVITY :** Children will paste the pictures themselves. **PROJECT WORK:** Children will divide themselves in teams and perform the task. **(GROUP DISCUSSION) :** Ans. The climate of Rajasthan is extremely hot in summers and cold in winter. Cacti and Aloe vera are grown in abundance in this region.

CH. -5 FOOD RESOURCES (A) (1) b (2) a (3) b (4) c **(B)** 1. Amino acids 2. Fats 3. growth 4. proteins 5. Fibre **(C)** 1. False 2. True 3. False 4. True 5. True **(D)** 1. c 2. a 3. b 4. e 5. d **(E)** 1. Rice, Pulses 2. Wheat, Rice 3. Freezing, Canning 4. Calcium, Iron **(F)** 1. Preservation 2. Protective food 3. Body-building 4. Lemon **(G)** 1. Milk and cheese are source of proteins. 2. Fruits, Vegetables, Eggs and Wheat are four sources of vitamins and minerals. 3. The function of the fat is to keep body warm. 4. Carbohydrates, fats ,Proteins and Minerals are the four components of food. 5. Fruits and vegetables are sprayed with chemicals to protect them from diseases so they should be washed before eating. 6. The process of protecting food from getting spoilt is called preservation. 7. Steaming, roasting, baking, frying and boiling are the different methods of cooking food. **(H)** 1. The different methods of preservation are canning, freezing, drying, salting, adding vinegar, sugar and oil etc. Sometimes artificial substances called preservatives are added to the food. 2. water is needed by our body to function properly. Food contains some amount of water. But our body needs more water. So, we must drink atleast four to five glasses of water everyday. 3. Food should be cooked in just enough water. Extra water in cooked food also contains nutrients. If the extra water is thrown away, the nutrients in it are also lost. **(LETS EVALUATE) Ans.** The sports persons should add the diet rich in carbohydrates because they are instant energy boosters. They can provide enough stamina to play in their games. **ACTIVITY:** Children will draw

themselves. **PROJECT WORK :** Children will do themselves. **(GROUP DISCUSSION) : Ans.** The various types of the food nutrienst are carbohydrates, fats, proteins, minerals and vitamins.

CH. - 6 THE DIGESTIVE SYSTEM (A) (1) b (2) a (3) c (4) d (5) c **(B)** 1. Liver 2. Mouth 3. Intestine 4. Anus **(C)** 1. True 2. True 3. False 4. False **(D)** 1. c 2. d 3. e 4. a 5. b **(E)** 1. Stomach, liver 2. Oats, Wholegrains 3. Pizza, Burger **(F)** 1. Balanced-diet 2. Roughage 3. saliva 4. Orange **(G)** 1. Digestion of food starts in the mouth. Then the food goes through the food pipe and pass to the stomach. The stomach breaks the nutrients in more simpler form. It is then passed into the small intestine. The liver and pancreas pass their juices into the intestine. The liver secretes bile that helps to digest food. 2. The four best ways for easy digestion are as follows:- (i) Take food at regular intervals. (ii) Drink plenty of water. (iii) Chew food properly. (iv) Do not over eat. 3. The role of the large intestine is to absorb water from the remaining indigestible food matter and transmit the useless waste material from the body. 4. Digestion is the process in which food is broken into simple substances and is absorbed by the blood. **(H)** 1. The main digestive organs of our body are salivary glands, esophagus, stomach, small intestine, large intestine , liver, gall bladder and pancreas 2. Saliva helps in breaking the starch into sugar. 3. The maximum of the digestion and absorption of food take place in the small intestine. The main function of the small intestine is absorption of nutrients and minerals from food. 4. The undigested food goes into large intestine. The blood vessels in the walls of large intestine absorb the extra water and carry it to the kidneys. The semi solid waste is thrown out from the anus. 5. For proper digestion of the food, we should take food at regular intervals. We need to chew our food properly. We should include balanced diet. **(LETS EVALUATE): Ans.** It is advisable to drink plenty of water . Though, it is not a nutrient but it helps to keep away dehydration from our body. It aids in the proper digestion of food and removes toxins from our body. **ACTIVITY :** Children will observe themselves. **PROJECT WORK :** Children will write their observations themselves in their notebooks. **(GROUP DISCUSSION) : Ans.** We can add carbohydrates, fats, proteins, minerals and vitamins in our diet to maintain proper development and growth of our body.

CH. - 7 TEETH AND MICROBES (A) 1. a 2. c 3. c 4. a **(B)** 1. Sweets 2. bacteria 3. Germs 4. Athlete's foot **(C)** 1. False 2. False 3. True 4. True 5. True **(D)** 1. d 2. a 3. f 4. b 5. c 6. e **(E)** 1. Typhoid, Pneumonia 2. Milk, Fruits 3. Milk Teeth , Permanent Teeth 4. Virus, Bacteria 5. Apple, Carrot **(F)** 1. Canines 2. Germs 3. Viruses 4. Enamel 5. Root **(G)** 1. The enamel, dentine and pulp are the three layers of a tooth. 2. Teeth give proper shape to our face. They enable us to bite and chew food. 3. Tooth decay results in severe pain and cause great difficulty in chewing food. 4. Microbes are tiny living things. Viruses, bacteria, protozoa and fungi are the different types of microbes. 5. Some microbes are useful for our health . They can be used to make yoghurt and curd from the milk. **(H)** 1. The various ways to keep our teeth healthy are as follows:- (a) We must visit the dentist for regular check-ups. (b) Do not eat too much of sticky foods, sweets and soft drinks. (c) Rinse your mouth after every meal. (d) Eat food that contains calcium and vitamin A,C, and D. 2. Germs feed on the leftover food particles and give out a substance called acid. The acid damages the enamel and slowly a hole called cavity is formed. 3. The premolars and molars help us to grind and chew the food properly. 4. The root is the sensory portion of the tooth, containing the nerve which leads to the brain. It holds the tooth in place in the jawbone. 5. Cavities cause pain, bad breath and indigestion. A visit to the dentist becomes necessary in such cases. **(LETS EVALUATE) Ans.** Doctors advice us to take good care of our teeth because once they are damaged and broken, they cannot be grown again. Therefore, we need to take care of their hygiene by brushing

twice a day and eating foods good for their health. **ACTIVITY :** Children will make the poster themselves. **PROJECT WORK:** Children will complete their project themselves. **(GROUP DISCUSSION)** Ans. The reasons behind tooth decay can be eating sticky food and over eating of sweet eatables like chocolates, toffees, cold drinks and ice-creams.

CH. - 8 SAFETY FIRST (A) 1. b 2. c 3. b 4. c **(B)** 1. avoided 2. stand 3. zebra-crossing 4. wet 5. stairs **(C)** 1. True 2. False 3. True 4. True 5. False **(D)** 1. a 2. c 3. e 4. b 5. d **(E)** 1. Cutter, Bottle lids 2. Acids, Alkalis 3. Soframycin, Nitrofurazone 4. Electric wire, Switches **(F)** 1. Zebra crossing 2. Antiseptic 3. Doctor 4. First Aid Box **(G)** 1. The first help given to a wounded person before the arrival of proper medical aid. 2. When children push each other and indulge in fight than the accidents can take place in schools. 3. It is dangerous to wear nylon clothes in the kitchen because it can catch fire. 4. We should not listen to music while riding a bicycle because it can keep us away from hearing the sound or horn of a moving vehicle. 5. The two common emergencies where we need first aid are minor cuts and minor burns. **(H)** 1. A first-aid box usually has the following things :- A First aid box, small pieces of clean cloth, a pair of forceps, a small roll of sterilized gauze and cotton pads, a thermometer, a first-aid book, a crepe bandage, a pencil torch, a small cotton roll, a pair of scissors and a small soap. 2. We should not throw things and objects out of the train because it can hurt people in the train or even us. 3. We should follow the following safety rules in the playground :- (a) Do not go too close to the moving swings. (b) Do not use sports equipments to hurt others. (c) Do not push others. Wait for your turn. (d) Be careful while playing on the swings, slides and jungle gym. **(LETS EVALUATE) Ans.** Safety begins at home so it becomes our duty to follow some safety tips at home which are as follows :- (a) We should not touch electric appliance with wet hands. (b) We should not run slippery and wet floors. (c) We should not touch sharp objects and chemicals. (d) We should not play near hot objects and pans. **ACTIVITY :** Children will draw the pictures themselves. **PROJECT WORK :** Children will make a first aid box themselves **(GROUP DISCUSSION) Ans.** We should use footpath to walk on the road. Use zebra crossing wherever it is available. We should look first to our right and then to the left to see if any vehicle is coming. Cross the road only when you are sure that the road is clear.

CH. - 9 CLOTHING : OUR BASIC NEED (A) 1. c 2. b 3. a 4. b 5. a **(B)** 1. Warm 2. Cotton 3. Winter 4. Uniforms 5. Woven **(C)** 1. True 2. False 3. True 4. True 5. True 6. True **(D)** 1. b 2. a 3. d 4. c 5. e 6. f **(E)** 1. Cotton, Linen 2. Rayon, Nylon 3. Sweater, Jacket **(F)** 1. Cocoon 2. Detergent 3. Wrinkle 4. Loom **(G)** 1. Clothes are useful to us as they protect us from heat, cold and rain. 2. We can take care of our clothes by washing them with mild detergents and ironing them. 3. We should store our clothes at a safe and clean place. 4. Silk fibres are made by an insect called silkworms. 5. The natural fibres are obtained by the plants and animals. 6. Fibres that we get from plants and animals are called natural fibres while man-made fibres are known as synthetic fibres. **(H)** 1. The following are the natural fibres:- (a) Cotton: The cotton plant bears light and fluffy cotton balls which burst open. These cotton balls have thin fibres in them (b) Linen: It is produced from the stalk of the flax plant. The stems of flax plant are allowed to rot. Then they are beaten to separate the long fibres. 2. Plants and animals are the few sources of fibres. 3. Woolen clothes are made from woollen fibres obtained from the thick coat of hair on the skin of animals. 4. The cotton plant bears light and fluffy cotton balls which burst open. These cotton balls have thin fibres in them. 5. The clothes are selected according to the climate because the capacity to resist any climate depend mostly on the kind of clothes we wear. **(LETS EVALUATE IT) Ans.** If we have to move out in rain , we have to wear water proof clothes which may protect us from getting wet.

ACTIVITY : Plant fibres, Animal fibres and Synthetic fibres are used to make varieties of fabrics. **PROJECT WORK :** Children will do themselves. **(GROUP DISCUSSION) Ans.** The neat clothes play an important role in personal hygiene. These clothes are free from germs.

CH. - 10 SOLIDS, LIQUIDS AND GASES (A) 1. d 2. b 3. c 4. d 5. b 6. c **(B)** 1. Volume 2. Solute 3. Molecule 4. Solution **(C)** 1. True 2. False 3. False 4. True 5. True **(D)** 1. d 2. e 3. b 4. a 5. c **(E)** 1. Sugar, Salt 2. Mud, Oil 3. Milk, Water 4. Oxygen, Nitrogen 5. Stone, Brick **(F)** 1. Molecules 2. Solvent 3. Solution 4. Evaporation 5. Water **(G)** 1. Anything that occupies space and has mass is called matter. 2. In solids, the molecules are very closely packed. They do not have space between them to move. That is why solids have a definite shape, size and volume. 3 Molecules in gas are placed far apart from each other. There is a lot of space between them. So, they can spread in all direction. 4. Yes, the molecules in a liquid have more space between them than the solids. 5. The ability of a solute to dissolve in a solvent is known as its solubility. **(H)** 1. Water is known as universal solvent because it can dissolve a wide variety of substances. 2. When a gas is cooled, its molecules condense or come closer. The gas changes back into liquid. This process is called condensation. 3. We cannot hold smoke in our hands because it is a gas . The molecules of gas take up all the space around. 4. The different states of matter are as follows:- (a) Solid: The solids have a definite mass and definite shape. They are hard to compress. It is difficult to move them. (b) Liquid : The liquids have definite mass but no definite volume. They take up the shape of container. They are hard to compress but easy to move. (c) Gas : The gas has no definite mass and no definite volume. It flows in all direction. It is easy to compress and move. 5. When a liquid dissolves, a solid substance in, it is called a solution. Mixture of solvent and solute is called solution. The solid substance which dissolves in liquid is called a solute, and the liquid is called a solvent. **(LETS EVALUATE) Ans.** Gas is packed in a closed container because the molecules of gas are placed far apart and they spread in all directions. **ACTIVITY :** Children will do themselves **PROJECT WORK :** Children will draw the diagram themselves **(GROUP DISCUSSION) Ans.** Heat energy is required to turn ice into steam. It takes a certain amount of heat energy or thermal energy to turn ice into water and water into steam.

CH. - 11 ENERGY, FORCE AND WORK (A) 1. b 2. c 3. b 4. b 5. a **(B)** 1. solar energy 2. mass 3. plants 4. energy 5. sun **(C)** 1. True 2. False 3. True 4. False 5. True **(D)** 1. d 2. e 3. c 4. b 5. a **(E)** 1. Knife, Axe 2. Bicycle pedal, Giant wheel 3. Plier, Tong 4. Kinetic energy, Mechanic energy **(F)** 1. Geothermal energy 2. Simple machine 3. Solar energy 4. Force **(G)** 1. Mascular force is used to pull a trolley. 2. Lever, Wedge, Pulley, Screw, Inclined Plane and Wheel and Axle are some simple machines. 3. The energy of moving water is used to generate electricity called hydro electricity. 4. Solar heater and solar cooler are the two devices which use solar energy. 5. Mascular energy is used to fly a kite. **(H)** 1. The devices which make our work easier and faster are called machines. 2. We apply force in our daily lives to complete our work like we apply force to open and close the door. Work cannot be done without applying force. 3. Dams store water. They have gates. These gates are opened to release the water with great force. The water pushes down and turns the wheels called turbines to produce electricity. This type of energy is called hydro electricity. 4. The three forms of energy are as follows :- (a) Electrical energy is a form of energy which runs on electricity. Examples are moving fan and Air conditioners. (b) Kinetic energy is the energy generated due to the movement. Examples are running car and a football kicked by a player. (c) Light energy is the form of energy which our eyes can detect .Examples are tubelight, sunlight. **(LETS EVALUATE) : Ans.** The burning of fuels like wood and coal should be stopped because it emit carbon dioxide in air which is responsible of causing air pollution. **ACTIVITY :** Children will draw a picture of

simple machine. **PROJECT WORK :** Children will collect the necessary information themselves. **(GROUP DISCUSSION) : Ans.** The pull or force of the earth to attract everything towards itself is called the gravitational force. For example we throw a ball in air, it falls on the ground. It is due to the gravitational pull of the earth.

CH. - 12 WATER, WEATHER AND AIR (A) 1. c 2. d 3. b 4. d 5. a **(B)** 1. faster 2. sun 3. germs 4. slower 5. large **(C)** 1. False 2. False 3. False 4. True 5. True **(D)** 1. a 2. b 3. d 4. e 5. c **(E)** 1. Hail, Dew 2. Rabi crop, Kharif crop 3. Summer, Winter 4. Land Breeze, Sea Breeze 5. Forest, River **(F)** 1. Filtration 2. Frost 3. Land Breeze 4. Soluble impurities 5. Rain **(G)** 1. The Sun plays an important role in causing changes in weather. 2. When it is cold, the raindrops freeze and turn into ice. This is called hail. 3. In winters, when water vapor condenses on cold objects, dew is formed. The dew when freezes into tiny crystals due to extreme coldness, it is called frost. 4. The amount of moisture in the air is called humidity. 5. Water on the surface of rivers, lakes, ponds and oceans get heated by the heat of the sun and evaporates. It rises up in air. As the water vapour reaches the upper parts of the atmosphere, it cools down and condense as tiny droplets of water to form clouds. Due to condensation these drops of water come down to the Earth as rain. 6. When water vapour cools suddenly, it freezes into snow while the raindrops which freeze and turn into ice in cold are called hail. 7. Soluble impurities cannot be seen with like salt and sugar etc. The insoluble impurities can be seen and separated like mud, stones etc. **(H)** 1. The rain water ultimately flows down to fill the different water bodies. This cycle of evaporation, condensation and subsequent return of water to the surface of the Earth is called the water cycle. 2. The various forms of water found on the Earth are hail, dew, frost, fog and snowflakes. 3. The three methods to remove impurities from water are as follows :- (a) Sedimentation : The process of settling down of heavy insoluble impurities present in water is called sedimentation. (b) Decantation: This follow sedimentation, the clean water above the sand is poured into another container leaving the sand behind. (c) Filtration: Removal of impurities by straining is called filtration. 4. Rainbow is formed by sunlight falling on raindrops. When sunlight enters a raindrop, it gets separated into seven colors and a rainbow is formed. (5) The contamination of water bodies is called water pollution. It occurs when pollutants are directly or indirectly discharged into water bodies. **(LETS EVALUATE) : Ans.** If the water purifier stops working in my home ,I would remove the impurities of water by filtration. I would also boil water to kill germs in it. **ACTIVITY :** Children will draw the picture themselves **PROJECT WORK :** Children will observe the process of filtration themselves **(GROUP DISCUSSION) Ans.** We should save water by not wasting it. We need to save the rain water also by rain harvesting structures. We should stop contaminating the water bodies otherwise no water will be left for drinking on the earth. Many water born diseases are caused due to drinking such water.

CH. - 13 SOIL: VERY IMPORTANT SUBSTANCE ON THE EARTH (A) 1. b 2. b 3. a 4. b 5. a **(B)** 1. topsoil 2. soil 3. sandy, clayey, loamy 4. dead plants 5. red soil **(C)** 1. False 2. True 3. True 4. False 5. False **(D)** 1. e 2. b 3. a 4. c 5. d **(E)** 1. Topsoil, Subsoil 2. Sandy, Loamy 3. Tea, Coffee 4. Earthworm, Ant **(F)** 1. Topsoil 2. Soil Conservation 3. Humus 4. Soil Erosion **(G)** 1. Topsoil, subsoil and bedrock are the three layers of soil. 2. There are three different types of soil: sandy, clayey and loamy. 3. Earthworms move through soil creating tunnels. Plants are able to absorb more water and air through these tunnels. 3. The carrying away of the top fertile layer of soil by agents like wind and water is called soil erosion. It can be prevented by planting more and more trees. 4. Earthworm, ant and centipede are the creatures which live in the soil. **(H)** 1. The cutting down of trees, blowing of strong winds, heavy rains and the

faulty methods of crop growing are the causes of soil erosion. 2. Soil is important to us because of its ability to let plants grow on it. It contains the necessary substance needed for a plant to survive. 3. Soil can be conserved by planting more and more trees. Plants bind the soil firmly with their roots. It cannot be blown away by wind and water. Dams should be constructed across the river to stop floods. 4. Soil can be divided into four types:- (a) The bigger particles of soil which are of the size of rice grains are called gravel. (b) Smaller particles which are somewhat of the size of sugar grains are called sand. (c) The very fine powder- like particles are called clay. (d) Particles which are between the size of sand and clay are called as silt. **(LETS EVALUATE) : Ans.** I would plant more trees and grass at my home to conserve soil. **ACTIVITY :** Children will draw the diagram themselves **PROJECT WORK :** Children will do themselves **(GROUP DISCUSSION) Ans.** Soil is formed by the breaking down of rocks into tiny particles. Rocks are hard and strong. But, they are constantly attacked by forces of nature such as water, wind and heat.

CH. - 14 THE EARTH AND ITS NEIGHBOURS (A) 1. b 2. c 3. b 4. a 5. b **(B)** 1. different 2. constellation 3. Aryabhata 4. crust 5. revolution **(C)** 1. True 2. False 3. True 4. True **(D)** 1. b 2. a 3. e 4. d 5. c **(E)** 1. Active, Dorman 2. Mercury, Venus 3. Aryabhata, Chandrayaan **(F)** 1. A star is huge ball of gases and give out its own heat and light while a planet is a heavenly body that moves around the Sun in a fixed orbit. 2. The Sun and the planets moving around it are called solar system. 3. Rotation of the Earth causes day and night. 4. Artificial satellites are scientific instruments sent by scientists to orbit around the Earth. 5. The Earth's revolution and its tilted axis cause change in seasons on the Earth. **(G)** 1. The surface of Jupiter has thick clouds of gas which form bands around it. A huge red spot can be seen in the clouds of Jupiter. 2. The Sun is a fiercely hot ball of gases. It lies at the centre of our solar system. It gives out its own heat and light therefore it is called a star. 3. The artificial satellites take photographs and send information to the Earth about storms, clouds and weather etc. They also help in transferring telephone calls and sending radio and television signals. They also assist in navigation of ships and aeroplanes. They monitor crops, locate minerals deposits etc. 4. The outer part of the Earth is called crust. Under the crust, is a rocky layer called the mantle. The rocks in the mantle contain different types of minerals. Beneath the mantle, is a layer of hot, molten metal called the core **(H)** 1. Draw a diagram of layer of the Earth 2. Draw a diagram of volcano **(LETS EVALUATE) Ans.** The countries situated near the equator remain usually hot throughout the year because it lies in the centre of the equator. Where the rays of the Sun fall directly on them. **ACTIVITY :** Children will make a chart themselves **PROJECT WORK :** Children will do themselves **(GROUP DISCUSSION) Ans.** The Indian Space Research Organisation (ISRO) launched 104 satellites into orbit aboard the Polar Satellite launch Vehicle last night Feb.14), setting a new record for the most satellites.

CH. - 15 RESOURCES IN OUR DAILY LIFE (A) 1. b 2. c 3. a 4. a 5. c **(B)** 1. wind-energy 2. CLFs 3. natural 4. solar 5. million **(C)** 1. False 2. True 3. True 4. True 5. False **(D)** 1. c 2. e 3. d 4. b 5. a **(E)** 1. Precious stone, Gemstone 2. Wind, Solar 3. Coal, Oil 4. Steel, Copper 5. Coal, Petroleum **(F)** 1. Ores 2. Resources 3. Compact Fluorescent Lamps 4. Non-renewable resource **(G)** 1. Soil and forests can be conserved by preventing the cutting of trees. 2. Water can be conserved by not wasting a drop of it. Coal and petroleum can be conserved by judicious use of it. 3. Paper , rubber and honey are obtained from forests. 4. Minerals are substances found naturally in the Earth. They make up the rocks that cover the Earth. 5. The resources that we get from nature are called natural resources. 6. Hydro electricity is generated by water. **(H)** 1. Natural resources can be divided into two groups:- (a) Natural Resources:

The resources which never get exhausted naturally within a specific period are called renewable resources. For example: sunlight and wind. (b) Non-renewable Resources: The resources that cannot be replaced within a reasonable period of time once used up. For example minerals and soil. 2. Minerals are basic and essential raw materials in our daily lives, and are vital for economic, social and technological development. 3. Coal and petroleum are formed by the remains of plants and animals that got buried under the ground millions of years ago. Due to heat and pressure, these dead plants and animals converted into coal and petroleum. 4. Forests are very vital to us. They are the store house of various resources. They can be called the lungs of the Earth. They help to purify air. 5. We need to conserve our resources because they are limited . So they need to be used judiciously. **(LETS EVALUATE)** Ans. We would conserve resources in our daily life by reusing, reusing and recycling them. **ACTIVITY :** Children will write slogans themselves. **PROJECT WORK :** Children will search themselves. **(GROUP DISCUSSION)** Ans. The appropriateness of adding Refuse in the Three R's of resource conservation has increased. It indicates to refusing the use of plastic materials.

MODEL TEST PAPER : 1 – (A) 1. a 2. b 3. d **(B)** 1. Starch 2. Deciduous 3. Growth 4. Tadpole 5. Hump 6. Lungs **(C)** 1. True 2. True 3. True 4. False 5. True **(D)** 1. Aquatic 2. Roughage 3. Stomata 4. Omnivores 5. Spawn **(E)** 1. e 2. a 3. d 4. b 5. c **(F)** 1. The butterfly has four stages in their life cycle. The young one that hatches from the egg of these insects is called a larva. The larva of a butterfly is called a caterpillar. The larva eats leaves and grows rapidly. After sometime, it stops eating and forms a covering called a pupa around itself. Later the pupa bursts open and the butterfly comes out. 2. The green plants prepare their own food by the process of photosynthesis in the presence of sunlight. 3. The various nutrients found in the food are carbohydrates, fats, proteins, minerals and vitamins. 4. The ability to change itself to suit the environment by a creature is called adaptation. 5. We should not wash vegetables and fruits after cutting them . We should avoid overcooking as it destroys nutrients.

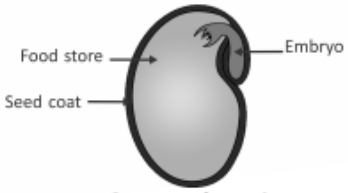
MODEL TEST PAPER : 2 – (A) 1. Silkworm 2. Solvent 3. Carelessness, hurry 4. Mouth 5. Salivary 6. Protozoa **(B)** 1. b 2. a 3. d 4. e 5. c **(C)** 2. a 3. a **(D)** 1. True 2. False 3. True 4. False 5. True **(E)** 1. Solution 2. Detergent 3. Zebra crossing 4. Germs 5. Crown **(F)** 1. Digestion of food starts in the mouth. Then the food goes through the food pipe and pass to the stomach. The stomach breaks the nutrients in more simpler form. It is then passed into the small intestine. The liver and pancreas pass their juices into the intestine. The liver secretes bile that helps to digest food. 2. There are four types of microbes: Viruses are smaller and can be seen only through microscopes. They cause diseases like smallpox, common cold and polio. Bacteria are single celled micro-organism. They cause diseases like typhoid, tuberculosis and pneumonia. Protozoa are single-celled micro organism. Malaria and dysentery are caused by them. Fungi are plants that grow on decaying matter and cause diseases like ringworm. 3. A first-aid box usually has the following things: A First aid box, small pieces of clean cloth, a pair of forceps, a small roll of sterilized gauze and cotton pads, a thermometer, a first-aid book, a crepe bandage, a pencil torch, a small cotton roll, a pair of scissors and a small soap. 4. Water is known as universal solvent because it can dissolve a variety of substances. 5. Natural fibres are obtained by plants and animals. They are friendly to our skin while man made fibres are called synthetic fibres. They are less friendly to our skin.

MODEL TEST PAPER : 3 (A) 1. c 2. d 3. c **(B)** 1. Sun 2. Minerals 3. Red soil 4. Aryabhata 5. CFL **(C)** 1. True 2. True 3. True 4. True 5. True **(D)** 1. Solar energy 2. Land Breeze 3. Soil Erosion 4. Non-

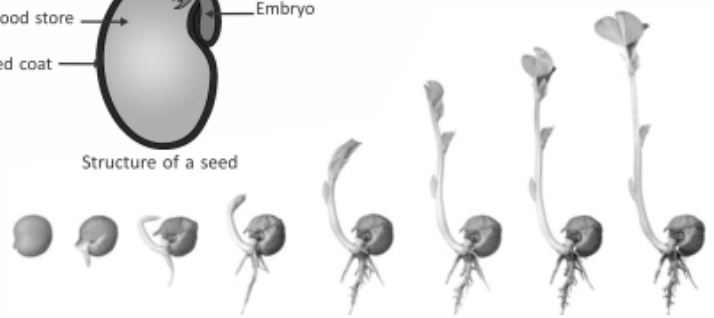
Renewable 5. Ores **(E)** 1. Land Breeze, Sea Breeze 2. Hail, Dew 3. Knife, Axe 4. Kinetic energy, Potential 5. Earthworm, Centipede **(F)** 1. We apply force in our daily lives to complete our work like we apply force to open and close the door. Work cannot be done without applying force. 2. The three methods to remove impurities from water are as follows:- (a) Sedimentation: The process of settling down of heavy insoluble impurities present in water is called sedimentation. (b) Decantation: This follow sedimentation, the clean water above the sand is poured into another container leaving the sand behind. (c) Filtration: Removal of impurities by straining is called filtration. 3. Soil is important to us because of its ability to let plants grow on it. It contains the necessary substance needed for a plant to survive. 4. The outer part of the Earth is called crust. Under the crust, is a rocky layer called the mantle. The rocks in the mantle contain different types of minerals. Beneath the mantle, is a layer of hot, molten metal called the core. 5. Coal and petroleum are formed by the remains of plants and animals that got buried under the ground millions of years ago. Due to heat and pressure, these dead plants and animals converted into coal and petroleum.

Class - 5

CH. -1 NEEDS OF PLANTS FOR GROWTH AND DEVELOPMENT A. (1) a (2) b (3) a **B.** 1) seed 2) cotton, madar 3) flowers 4) agriculture 5) manures **C.** (1) False (2) True (3) True (4) False (5) False **D.** (1) DDT (2) Water Lily (3) Dahlia (4) Wheat (5) Mango **E.** (1) The crops grown in summer season from June to October are called kharif crops while the crops grown in winter season from November to April are called rabi crops. (2) In some fields, water is lifted by a pump and through pipes with sprinklers and sprayed on the crops. This method is called sprinkler irrigation. In some fields, the pipes have holes through which water drips in the soil. This method is called drip irrigation. (3) A substance used for destroying insects or other organisms harmful to cultivated plants is called pesticide. An animal dung used for fertilizing crops is called manure. (4) Conversion of seed into seedling is called germination while the act of supplying water to land or crops is called irrigation. (5) The weather conditions prevailing in an are in general or over a long period is called climate. Each of the four divisions of the year is marked by particular weather patterns namely spring, summer, autumn and winter. **F.** (1) The embryo root pushes through the seed coat and grows downwards into the soil. The roots start growing and the cotyledons are pulled upwards. The body plant called seedling starts coming our, of the cotyledons. The stem grows longer and first leaves start developing. The leaves develop completely and the cotyledons fall off. The process of germination is thus completed. (2) The grown crops can be protected against any diseases and harmful insects by spraying insecticide and pesticide on it. (3) There are three practices of agriculture. A) Shifting agriculture B) Plantation agriculture C) Subsistence farming (4) The process of dispersal is carried out by animals, birds ,water and wind. They are called agents of dispersal. Light, hairy or winged seeds are dispersed by winds. Plants that grow along the river and sea shore disperse their seeds through water currents. Men, animals, birds also eat fruits and throw seeds at distant places. (5) The embryo root pushes through the seed coat and grows downwards into the soil. The roots start growing and the cotyledons are pulled upwards. The body plant called seedling starts coming our, of the cotyledons. The stem grows longer and first leaves start developing. The leaves develop completely and the cotyledons fall off. The process of germination is thus completed.



Structure of a seed


Germination of seed

G. (1) The crops are sprayed frequently with pesticides so that they can protect themselves from diseases and harmful insects. (2) Climate plays an important role in growth of plant. The different plants are adapted to different climate for example Hydrilla grow in water. Conifers are grown in hilly areas. Coconut trees are adapted to damp and moist climate. (3) No, all the seeds cannot produce a new plant. (4) The process of dispersal is necessary because if the seeds are not dispersed, many germinating seedlings will grow very close to the parent plant. This will result in competition between everyone of the seedling as well as the parent plant. (5) **The various techniques of irrigation are: a) Surface irrigation :** In this irrigation water flows under gravity and spread over the area. **b) Localised irrigation :** Water is distributed through localized pipes under low pressure. **c) Drip irrigation :** Water is spread drop by drop onto the root of plant **d) Sprinkle irrigation :** Water is distributed through high pressure sprinklers. Irrigation helps to increase agriculture production for the irrigated fields, the yields are stable and reliable. It reduces fluctuations in the year to year yields and the risk of crop of crop failure due to drought. **(LETS EVALUATE) :** The living organism help to disperse seeds to distant places. **ACTIVITY, PROJECT WORK :** Children will do themselves **GROUP DISCUSSION :** Intensive farming, Organic farming and sustainable agriculture are the new techniques of agriculture.

CH. -2 HEALTH: DISEASE AND THEIR PREVENTION A. (1) c (2) b (3) a (4) c (5) a **B.** 1) efficiency 2) tooth decay 3) plaque 4) vaccines 5) ringworm **C.** (1) False (2) True (3) False (4) True (5) False **D.** (1) e (2) a (3) h (4) d (5) g (6) c (7) b (8) f **E.** (1) Vitamins & minerals (2) Bacteria, protozoa, fungi, virus (3) Iodine (4) Ringworm (5) Malnutrition **F.** (1) The state of being extremely fat in a way that is dangerous for health is called obesity. The combination of the correct types and the amount of food is known as balanced diet. (2) Thiamine is the compound which is one of the four constituent bases of nucleic acid. The unhealthy habit include low intake of basic nutrients and more inclusion of fast food in diet. (3) Malnutrition is the condition that results from eating a diet in which nutrients are either not enough or are too much such that diet causes health problem. Macro nutrients are the type of food (eg. Fat, protein, carbohydrates) required in large amount in the diet. (4) Allergies are the damaging immune response by the body to a substance specially a particular food, pollen, fur etc., to which it has become hyper sensitive. Germs are the micro organisms which cause disease inside the human body. (5) Epidemic diseases are those diseases which spread rapidly to a large number of people within a short period of time. Communicable diseases are the infectious disease transmissible by direct contact with the affected individual. **G.** (1) When female anopheles mosquito bites a healthy person, the malaria germ enters a person's body and it cause malaria. (2) The agents of dispersal of disease are air, water and food. (3) Examples of malnutrition are protein energy malnutrition and micro nutrient malnutrition. (4) Weight gain and obesity are the result of over eating. People tend to lose their confidence. It sometimes leads to indigestion. (5) Beans are the least expensive source of proteins compared to other food. Beans contain power house of nutrients such as vitamins, minerals etc. **H.** (1) The different food groups are: a) Bread and cereal groups = Examples rice and wheat b) Vegetable and fruit groups = Examples potato and raisins c) Wheat or pulses and beans group = Examples are chicken and egg e) Fat and oil groups = Examples are mustard and sunflower seed. They are necessary in a balanced proportion to supplement growth and development of our body. (2) Exercises maintain physical fitness. It strengthen bones and muscles and increase the efficiency of heart and lungs. It improve blood circulation. (3) The causes of non communicable diseases are lack of physical activity, unbalanced diet, use of tobacco and alcohol etc. Examples of non-communicable diseases are asthma, diabetes etc. (4) We can prevent the spread of communicable disease by always drinking pure and clean water, by covering our food, covering gutters to prevent insect breeding etc. If a person is suffering from communicable disease

keep him/her away from other people. **LETS EVALUATE:** Vaccines are medicines that can fight away disease causing germs so they help us to keep us away from diseases. **ACTIVITY, PROJECT WORK :** Children will do themselves. **(GROUP DISCUSSION) :** The main components of diet are carbohydrates, fats, proteins, minerals and vitamins .

CH. -3 SAFETY RULES AND FIRST AID A. (1) d (2) a (3) d (4) a (5) c **B.** 1) fire extinguisher 2) seat belt 3) synthetic 4) switch 5) tourniquet **C.** (1) False (2) False (3) False (4) False (5) True **D.** (1) d (2) a (3) e (4) c (5) b **E.** (1) No pedestrian traffic stop (2) Savlon (3) Toaster (4) Zebra crossing (5) Knife **F.** (1) We should follow safety rules to avoid accidents. (2) Oil fires are resistant to water, but small fires can be effectively extinguished when the sand in the bucket is dumped on the fire to starve it of the oxygen it needs to stay alight. (3) The wet cloth is kept on face during fire catches to prevent heat. (4) We put sling to support the broken bone of the arm and keep the bone straight. **G.** (1) The damaged electric wires should be replaced so that people should not catch electric current and sparks. (2) We should keep first aid box at home to avoid harm from injuries and provide first help to the injured person. (3) The nylon clothes are not worn during fire play because they catch fire immediately. (4) We should not go near water without an adult watching. We should stay away from water bodies such as lakes and pools. Take swimming lesson and always wear a life jacket in a boat. (5) We should use footpath for walking and cross the road at the zebra crossing. We should cross the road only when we are sure that road is clear. **LETS EVALUATE :** A first-aid box usually has the following things: A First aid box, small pieces of clean cloth, a pair of forceps, a small roll of sterilized gauze and cotton pads, a thermometer, a first-aid book, a crepe bandage, a pencil torch, a small cotton roll, a pair of scissors and a small soap. **ACTIVITY, PROJECT WORK:** Children will do themselves. **(GROUP DISCUSSION) :** Children will draw the various symbols of traffic and write their meaning.

CH. -4 STATES OF MATTER A. (1) c (2) c (3) b (4) b (5) b **B.** 1) molecule 2) atoms 3) chemical 4) gas 5) liquid **C.** (1) True (2) False (3) False (4) False (5) True **D.** (1) Iron (2) Copper (3) Ice into water (4) Oxygen (5) Milk to cheese (6) Oil and water **E.** (1) A physical phenomena produced by motion of electric charge which results in attractive and repulsive forces between objects is called magnetism. Thermal conductivity is the property of material to conduct heat. (2) An element is a substance consisting of atoms which all have the same number of protons. When two or more atoms are joined together than they form molecules. (3) Combustion a chemical change which means burning. When an iron is exposed to moist air, it rusts and a red layer can be seen on it, this is called corrosion. (4) An element is a substance consisting of atoms which all have the same number of protons. An compound is a substance formed when two or more chemical elements are chemically bonded together. (5) A change in which substance remain the same and no new substance is formed is called physical change. A change in which substance changes into a new substance with different properties is called chemical change. **F.** (1) Corrosion degrades the useful properties of materials and structures including strength, appearance and permeability to liquids and gases. Without combustion, energy would be unavailable. (2) The solids have fixed volume and shape because there is a strong force of attraction between the molecules. (3) Water is called a compound because it is a mixture of hydrogen and oxygen. (4) The change from solid ice to liquid water is a physical change. (5) The substances that can carry heat are called good conductors of heat. **G.** (1) Oil paints cannot be mixed with water because their molecules are differently packed. The molecules of water are packed densely and it will always sink underneath the oil. (2) The change

from solid ice to liquid water, it is a physical change. (3) When we dissolve salt in water the sodium chloride dissociates in Na+ ions and Cl- ions, which may be written as a chemical equation. (4) The electrical wires are made of copper because it is a good conductor of electricity. (5) All the electric wires have plastic coating because it is a bad conductor of electricity. **LETS EVEALUATE :** Ans. There is a little force of attraction between the molecules of gas therefore they neither have definite shape nor a definite volume. **ACTIVITY, PROJECT WORK :** Children will do themselves. **(GROUP DISCUSSION) :** Water can dissolve salt because the positive part of water molecules attracts the negative chloride ions and the negative part of water molecules attracts the positive sodium ions.

CH. -5 THE WORLD OF FAUNA **A.** (1) c (2) c (3) c (4) c (5) a **B.** 1) Proboscis 2) Flesh eaters 3) Blood vessels 4) Habitat 5) Turtle, tortoise **C.** (1) True (2) True (3) False (4) False (5) True **D.** (1) Gills (2) Cell membrane (3) Lungs (4) Spiracles **E.** (1) Turtle (2) Deer (3) Cow (4) Crow (5) Lizard **F.** (1) Whale is a fish and it breathes through lungs. (2) Emu and Kiwi are flightless birds. (3) Herbivores have well developed incisors. (4) Birds have beak to eat their food. (5) Snakes have scales to move. **G.** (1) The functions of feather are:- They provide insulation. they allow the birds to fly. They help a bird to keep itself warm. (2) The main function of blood vessels is to carry blood through the body. The blood carries oxygen and nutrients that need to move around the body. (3) Limbs help in movement, walking and catching prey. (4) The whales are mammals because they give birth to their young ones. They have lungs to breathe air. (5) Birds migrate from one place to another in search of food and climatic change. (6) All the animals respire in order to release energy from the food. **LETS EVALUATE:** The scales and flexible muscles make the movement of reptiles easier and smoother on the ground. **Activity: (ACROSS)** 1) Gills 2) Paddle 3) Migration 4) Scales **(DOWN):** 5) Spiracles 6) Nostrils **PROJECT WORK:** Children will do themselves **(GROUP DISCUSSION):** Ans. The various features of mammals are :- A) All mammals have a backbone and spinal cord made up of a number of individual vertebrae. B) Mammals are warm blooded creatures. C) All mammals have four limbs.

CH. -6 HUMAN SKELETON SYSTEM **A.** (1) c (2) c (3) a **B.** 1) pivot 2) Bone marrow 3) skeletal 4) skull 5) ligaments **C.** (1) False (2) True (3) False (4) True (5) True **D.** 1) brain 2) 33 3) twelve 4) longest 5) bone marrow **E.** (1) Bone marrow (2) Backbone (3) Femur (4) Hinge (5) Pivot **F.** (1) Rib cage (2) Pivot (3) Femur (4) Bone marrow (5) Tendons **G.** (1) Involuntary muscles of our heart are cardiac muscles. They work continuously since our birth while the skeletal muscles have voluntary movement i.e. skeletal muscles can move at our will. (2) The hinge joints work like the hinges in a door. They move the bones through 180 degree in one direction only. These joints are seen at the elbow, knee, fingers and toes. A pivot joint is a joint that moves by rotating. It allows the neck to move from side to side and upwards and downwards. (3) The skull is attached to the backbone at its base. It consists of a series of 33 small bones. Each of these bones is called a vertebra. The spinal cord is a long, fragile tubelike structure that begins at the end of the brain stem and continues down almost to the bottom of the spine (spinal column). (4) Movable joints are the joints which solely help in the movement of the organ in which they are present. The muscles attached to the joint contract and allow movement. The immovable joints are the joints which do not allow the structure to move but they offer protection for the structure in which they are present. Examples are ribs in the breastbone, bones of the hip girdle. **H.** (1) Muscles pull the bones and thus produce movement. They can contract and relax. They work by contractions and relaxations. Mostly the muscles work in pairs. (2) Ligaments are necessary because they control the amount of movement

of bones. (3) The skeleton provides shape and support to our body. It provides protection to our soft and delicate organs. For example, skull protects brain, rib cage protects the heart and lungs and the backbone protects the spinal cord. (4) There are different types of joints found in the human body:- a) A pivot joint is a joint that moves by rotating. It allows the neck to move from side to side and upwards and downwards. b) A ball and socket joint allows a circular movement. It is found in shoulders and hips. C) The sliding joints allow small sliding movements at the wrist, ankle and between the vertebrae of the backbone. It allows the back to bend, twist and turn. D) The hinge joints move the bones through 180 degree in one direction only. (5) Long bones of the body contain a jelly-like material, known as bone marrow. It is the body's factory for producing red blood cells and is used for storing fat. **LETS EVALUATE :** Ans. The hinge joints are called to be working like hinges in a door because they make the bone rotate 180 degree in one direction only. **ACTIVITY, PROJECT WORK :** Children will do themselves **(GROUP DISCUSSION) :** Ans. Regular exercise is necessary for proper development of muscles. Well developed muscles make a person look healthy and graceful.

CH. -7 THE NERVOUS SYSTEM A. (1) b (2) c (3) a (4) c (5) a **B.** 1) reflex 2) cerebrum 3) pupil 4) skin 5) nerves **C.** (1) True (2) False (3) True (4) True (5) True **D.** (1) Brain, spinal cord (2) Cerebrum, cerebellum, medulla (3) Eyes (4) Eyes, ears, skin, nose, tongue (4) Sweet, salt, sour, bitter (5) Blinking of eyes, yawning, sneezing and watering of mouth **F.** (1) The cerebrum forms the largest part of the brain. It receives messages from the sense organs and sends back messages about what has to be done. It is the centre of learning, memory, intelligence and resoning. The cerebellum controls and co ordinates the movement of the voluntary muscles. It helps to balance the body while walking, running, cycling and even helps to keep them in upright position. (2) The medulla connects the brain to the spinal cord. It controls involuntary actions like heart beat, digestion and breathing. The spinal cord is a large group of nerves that extends downwards from the base of the brain. It is enclosed and protected by the backbone. (3) The cornea is the surface of the eye. It is completely transparent, as all light that enters the eye must pass through the cornea. The iris is what controls the amount of light let into the eye. It is what gives the eyes its color, and it is what actually controls the size of the pupil. (4) There are tiny nerves on the retina. These nerves send the messages to a big nerve called the optic nerve. It helps the brain to understand what we have seen. The olfactory nerve helps to recognize the chemicals that reach the hair like nerve cells in our nose to know the smell. (5) Sensory nerves send signals from the sense organs to the brain or the spinal cord. They mostly connect to the brain through the spinal cord. Motor nerves send signal from the brain to the muscles and glands in the body. These signals make the muscle move and the watering of the mouth at the aroma of good food. **G.** (1) The eye-lids and eyelashes help to keep the eyes clean and dust free. Every time we blink, our eyes get cleaned. (2) Reflex actions are very fast involuntary actions controlled by the spinal cord. Blinking of the eye, coughing, yawning, sneezing and watering of mouth are some examples of reflex action. (3) The sense organs make us aware of the world around us. (4) The brain is the main control and coordination centre of the human body. It coordinates all the actions and reactions of the body by receiving different messages through the nerves, recognizing them, and sending messages through the nerves of different parts of the body to respond as required. (5) The nervous system consists of the brain, spinal cord, sensory organs, and all of the nerves that connect these organs with the rest of the body. Together, these organs are responsible for the control of the body and communication among its parts. **LETS EVALUATE:** The sound waves enter through the outer ear. They hit the ear drum and it vibrates. Sound

vibrations pass on to the inner ear through the middle ear. Here, the nerves carry messages to the brain and our brain tells us what the sound is. **ACTIVITY:** (a) Blinking of eyes, coughing, sneezing, yawning and watering of mouth are the five reflex actions. (b) The nails and hair are devoid of any nerves and blood vessels so we don't feel pain when we cut our nails and hair. (c) One of the key areas of our brain that deals with showing, recognizing, and controlling the body's reaction to emotions is known as the Limbic system. **WORD SEARCH:** (eye, skull, skin, iris, brain, lens, nose, medulla, spine, ears **PROJECT WORK :** Children will do themselves. **(GROUP DISCUSSION)** Ans. We should take care of our sense organs by cleaning them properly. We should not put any object inside them. We should eat plenty of healthy food and drink water.

CH. -8 FORCE, SIMPLE MACHINE AND ENERGY A. (1) c (2) a (3) c (4) b (5) c **B.** 1) Wedge 2) Thermal 3) Nucleus 4) Rays 5) Energy **C.** (1) False (2) True (3) True (4) False (5) True **D.** (1) First class lever (2) Second class lever (3) Third class lever (4) Inclined plane (5) Wedge (6) Screw **E.** (1) Inclined plane (2) Wheel and axle (3) Lever (4) Inclined plane (5) Lever **F.** (1) The point on which a lever turns or is supported is called fulcrum while the weight on which force is applied is called load. (2) Buoyant force is an upward force exerted by a fluid on a body which is fully or partially immersed in it while the frictional force refers to the force generated by two surfaces that contacts and slide against each other. (3) An electric force is exerted between any two charged objects. Objects with the same charge, both positive and negative, will repel each other, and objects with opposite charges, one positive and one negative will attract each other. Magnetic force has special properties by which they possesss a force that can move certain objects. (4) A push or pull acting on a body is called a force while energy is the ability to do work. (50 A lever is a bar or a board which rests on a point where it can turn. It is a simple machine used to lift objects. The screw is an inclined plane wrapped around a cylinder. It can thread into a metal bolt so that they are interlocked and cannot come apart. **G.** (1) A hot stove with boiling water in a metal pot (2) A fission reaction at a nuclear power plant. (3) lifting wood with a crane (4) Solar energy, wind energy (5) A wheel chair ramp **H.** (1) Mascular force is exerted while lifting a chair with hand. (2) Frictional force slows down a moving object. Some friction is good as it can allow a car to run smoothly but too much friction results in wear and tear of parts. (3) A see saw belongs to a first class lever because the fulcrum is between the load and the effort. (4) Sound energy is produced when a force causes an object or substance to vibrate. The energy is transferred through the substance in a wave. (5) A screw is used in an oil press to extract oil from nuts. An animal would walk around the press with a long wooden bar used to turn the screw and the screw would press the nuts and extract oil. **I.** (1) Nuclear energy produces low cost electricity. It also helps doctors to examine internal organs of the body. It fuels submarines. (2) A wedge is a simple machine with sharp edges on one side and blunt on the other. In it actually two inclined planes are used together. It is used to cut or split objects. (3) Screws are more useful than nails because they can hold things better than a nail. This is due to the presence of threading in screws that grip the surrounding material tightly. (4) We should take precautions while using non-renewable sources because they are in limited supply and it takes millions of years for them to form under the Earth. (5) Electrical energy is transformed to heat energy. Chemical energy of battery is transformed to sound energy. Solar energy is transformed to heat energy. **LETS EVALUATE:** The use of nuclear energy should be minimized because it produces nuclear waste which is extremely dangerous for living organisms and remains active for hundreds of year. **ACTIVITY, PROJECT WORK:** Children will do themselves. **(GROUP DISCUSSION):** (a) Inclined plane (b) Screw (c) Lever (d) Lever (d) Pulley

CH. -9 LIGHT AND ECLIPSE A. (1) a (2) a (3) a (4) a (5) c **B.** 1) Heat 2) Reflection 3) Shadow 4) Annular 5) Full moon **C.** (1) False (2) False (3) True (4) True **D.** (1) d (2) e (3) a (4) c (5) b **E.** (1) Phases of the Moon (2) Craters (3) High Tide (4) Moon (5) Lunar Eclipse **F.** (1) Luminous objects are the sources of light whereas non-luminous objects reflect light. (2) The objects that do not allow light to pass through them are called opaque objects. Examples wood, stone and metal. Some substances allow only a light to pass through them. They are called translucent objects. Examples are glass tumbler and a pair of sunglasses. (3) Umbra is the part of a shadow which is in complete darkness while penumbra is the part which is in partial darkness. (4) A lunar eclipse occurs when the Earth comes between the Sun and the Moon. While the solar eclipse occurs when the Moon comes between the Sun and the Earth. **G.** (1) Light travels in a straight line. (2) A light source, an opaque object and an opaque screen or surface where the shadow is to be formed are the three characteristics of a shadow. (3) The motions of the Sun, the Moon and the Earth bring the three bodies into the correct alignment about every 18 months. These are the times when eclipses can happen. (4) The gravitational attraction between two objects decreases with distance. Tidal forces on the side of the Earth closest to the Moon pull mostly water towards the Moon therefore we have a high tide. (5) The size of a shadow is long when the light source is placed along the length of an object and it is short when the light source is placed along the width of an object. **H.** (1) During the day time, the Sun is positioned quite low in the sky and our shadow is long. When the Sun is placed overhead in the afternoon, our shadow becomes small. (2) The life on the Moon does not exist because of absence of water and air. (4) The solar eclipse occurs when the Sun and the Moon are exactly in the same line. But as the size of the Moon is much smaller than the Sun, the Sun appears like a ring or annulus surrounding the outline of the Moon. (5) Light rays travel in a straight line. When we switch on a torch in darkness, the light appears to travel straight ahead. Similarly, when sunlight filters through a small hole into a dark room, it appears to travel in a straight line. **LETS EVALUATE:** A person with heavy weight feels lighter on the Moon because the gravity of the Moon is 1/6th times lesser than the Earth. **ACTIVITY, PROJECT WORK:** Children will do themselves **(GROUP DISCUSSION):** Ans. It is said that the Moon has a permanent dark side and it is perfectly round. The watching of solar eclipse by naked eyes is not allowed because the harmful rays can blur our eyes.

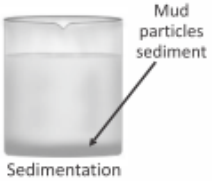
CH. -10 DIASTERS OF NATURE A. (1) b (2) c (3) b (4) b (5) b **B.** 1) Tsunami 2) Lava 3) Massive 4) Volcano 5) Seismograph **C.** (1) False (2) False (3) True (4) True (5) True **D.** (1) Terrorist attack (2) Avalanche (3) Epicentre (4) Bhopal Gas Tragedy 1984 (5) Dormant Volcano **E.** (1) The point on the Earth's surface directly above the source of an earthquake is called epicenter. (2) A geyser is a spring characterized by intermittent discharge of water ejected turbulently and accompanied by steam. **(3)** The hot, liquid matter below the Earth's surface is called magma. (4) An instrument used to measure and record the strength of earthquake is called seismograph. (5) The strength and magnitude of an earthquake is measured on a scale called Richter scale. **F.** (1) Lava flows very rapidly from the mountain, burning everything in its path. (2) A very large, often destructive sea wave caused by an earthquake under the sea or volcanic explosion is called tsunami. (3) Lack of rain and high temperature are the few causes of drought. (4) Hypocentre is the point under the Earth where an earthquake starts. While the epicenter is the point on the Earth's surface directly above the source of an earthquake. (5) The tidal waves can cause destruction along the coastal areas. The winds are so massive that they cause damage to life and property. **G.** (1) An earthquake takes place, when the tectonic plates move away from each other. Finally, when the plate moves far enough, the

edges get released. It forms waves. Like ripples in a pond, these waves are called seismic waves. It sends shivers through the ground making it quiver. Then there is an earthquake. The movement of tectonic plates affect the occurrence of an earthquake. (2) A volcano begins to form when magma which is less dense than the rock originated from, rises towards the Earth's surface. This liquid rock collects in chambers called 'magma chambers' where pressure builds due to expanding steam and gases associated with the magma. As pressure reaches a peak within these chambers, magma finds its way through a vent, resulting in a volcanic eruption and the expulsion of the hot molten rock.

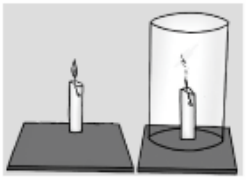
(3) Volcanoes which have a history of regular eruptions and may be expected to erupt any time are called Active volcanoes like Mt. Fuji etc. The dormant or sleeping volcanoes are the volcanoes which have not erupted for a long time but might erupt in the future like Chile, Alaska etc. The Dead volcanoes have almost no chances of erupting in future like Kilimanjaro etc. (4) A tidal wave is a regularly reoccurring shallow ater wave caused by effects of the gravitational interactions between the Sun, the Moon and the Earth on the ocean. (5) A drought is a period of very hot and dry weather resulting in the lack of rainfall in a particular region for a long period of time. Wells, streams dry up. There is shortage of drinking water and fodder for cattle. **LETS EVALUATE:** Ans. During earthquakes, drop to the floor, take cover under a study table, and hold on to it firmly. It reduces the risk of death and injury. **ACTIVITY, PROJECT WORK:** Children will do themselves. **(GROUP DISCUSSION) :** Ans. Though it is not possible to completely avoid natural disasters, but the sufferings can be minimized. The changing trends have opened up a large number of scientific and technological resources and skills to reduce disaster risk. The two applications to manage disaster are 1) GIS and Remote Sensing 2) Internet. (Children will prepare the report on flood situation in Uttrakhand in 2013 with the help of internet)

CH. -11 Atmosphere & hydrosphere **A.** (1) c (2) b (3) b **B.** 1) Ozone 2) Insoluble 3) Nitrogen, Oxygen 4) Five 5) Asthma **C.** (1) False (2) True (3) True (4) True (5) False **D.** (1) b (2) a (3) e (4) c (5) d **E.** 1) NITROGEN 2) OZONE LAYER 3) HUMIDITY 4) FILTRATION 5) DISTILLATE **F.** (1) Blow a balloon. Keep blowing it. The balloon bursts showing that the air exerts pressure on all sides of the balloon. After the pressure inside the balloon becomes greater than the pressure outside, the balloon bursts.

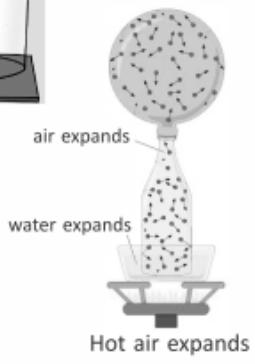
(2) If the water is allowed to stand undisturbed for some time, the sand particles settle down by the process of sedimentation.



(3) Light a candle and when it is burning well, put a glass jar over the candle. It will go out in a short time, because the flame has used all of the oxygen in the jar and it can't get any more.



(4) Take a bottle with a small neck. Attach a balloon at the neck of the bottle. Place the bottle in a pan containing water. Heat the pan. The balloon will get inflated .It is because as the water in the pan gets heated, the air in the bottle also gets heated up. This hot air expands and inflates the balloon.



(5) Tie three balloons at each end of a stick. Tie a thread in the middle of the stick and hold the stick up. The stick should balance. Remove the balloons from one end, fill them with air and tie their ends. The stick tilt towards filled balloons.

Air has weight

G. (1) The method of filtration can't be used to separate sugar from sugar solution because it is completely soluble in water. (2) In absence of carbon dioxide, the plants cannot prepare their food, while the presence of nitrogen in air helps to reduce the rate of burning, as caused by oxygen. (3) During rainy season or conditions of high humidity we sweat more because the relative humidity is on the higher side which means air cannot hold moisture further. (4) Distilled water is pure form of water so it is used in medicines etc. (5) If there would be no ozone layer, the harmful ultraviolet radiations from the Sun would enter the atmosphere. **LETS EVALUATE :** Ans. The mud particles are removed from water by the process of sedimentation and clear water is allowed to settle down. **ACTIVITY, PROJECT WORK:** Children will do themselves **(GROUP DISCUSSION) :** The ozone layer protects the atmosphere from preventing the harmful ultraviolet radiation from the Sun. Chemicals known as chlorofluorocarbons (CFCs) are used as a coolant in industries and other places to keep things cold. They damage the ozone layer in the atmosphere. It is causing a hole in the ozone layer. The polythene should be banned because they harm the living organisms.

CH. -12 EROSION AND CONSERVATION OF SOIL A. (1) c (2) c (3) b (4) c (5) c **B.** 1) rocks 2) natural 3) afforestation 4) river banks 5) increase **C.** (1) True (2) False (3) False (4) False (5) True **D.** (1) Soil Erosion (2) Deforestation (3) Soil Conservation (4) Embankment (5) Afforestation **E.** (1) The top soil contains most of the nutrients and water. It is rich in humus. Seeds germinate and roots of small plants grow in the topsoil therefore it is very important for us. (2) The process of the breaking of rocks due to the natural forces such as the sun, wind and water is called weathering of rocks. (3) The removal of vegetation is called deforestation. The planting of trees in large number in an open land is called afforestation while the planting of trees to restock in an existing forest is called reforestation. (4) There are many living organisms present in the soil. Most plants grow on soil. All animals depend directly or indirectly on plants for their food. Thus soil is very important for the continuation of life on the Earth. (5) Soil conservation is needed to prevent the soil from loosing its fertility and to keep a check on its eroding. **G.** (1) The rain water flowing down the hill slopes is muddy because it carries the mud from the slopes of the hill with its steep flow. (2) The roots of trees prevent the soil erosion by holding the particles of sand strongly and never letting move due to the pressure of wind and water. (3) Building embankments along river banks and bunds around fields prevents soil erosion. Bunds around fields help water to seep into the soil and raise the water table. (4) The seasonal vegetables and pulses should be grown after a crop has been harvested because it will keep the soil covered with vegetation and there will be less chances of erosion. (5) The soil erosion should be stopped to retain the fertility of the soil for growing good quality of crops. The soil is the home of numerous plants and animals. It help us to grow our food so we can say that soil support life on the Earth. **LETS EVALUATE :** Ans. The utility of soil for the living organisms is due to the three layers of the soil. It helps a plant to grow. **ACTIVITY, PROJECT WORK :** Children will do themselves **(GROUP DISCUSSION) :** Ans. Natural manures are carbon-based compounds that increase the productivity and growth of plants. They have various benefits over chemical fertilizers.

CH. -13 THE WORLD OF ROCKS AND MINERALS A. (1) c (2) c (3) a **B.** 1) Shale, Limestone 2) Quartzite 3) Lava 4) Igneous 5) Sun, Wind **C.** (1) False (2) False (3) True (4) False **D.** (1) d (2) e (3) b (4) c (5) a **E.** (4,5 are uncommon pair) **F.** (1) Bauxite is not a mineral. It is the primary ore of aluminium. It is a rock formed from laterite soil that has been severely leached of silica and other soluble materials in wet climate. Pyrite is an iron sulfide. This mineral's metallic luster and pale brass yellow hue give it a superficial resemblance to gold. (2) Peat is an accumulation of partially decayed vegetation or organic matter. The petroleum is called as the black gold because the various kinds of plastics are made from it. (3) Shale is made of clay which consists of very fine particles of weathered rock piled up in layers. Marble is made from limestone and is used as building material for its strength and beauty. (4) Granite is formed when the magma cools down in pockets. It is very hard and usually not porous. It is used for making monuments and buildings. Pumice is light and porous. It is formed when a volcano erupts. It is full of holes caused by volcanic gases which expand. It has small pockets of air. It is used as a foot scrubber. (5) Quartzite is formed from sandstone that is rich in quartz. It is very hard rock ,generally used in the glass and ceramic industry. Sandstone is sand grains cemented together into a rock. It mostly contains grains of quartz. It is reddish in color. It is often used as a building stone. **G.** (1) Pumice is light and porous. It is formed when a volcano erupts. It is full of holes caused by volcanic gases which expand. It has small pockets of air. It is used as a foot scrubber. It is ground to a fine powder and used to scrub or polish substances. (2) Metamorphosis means change in form. These rocks are those which have changed their original form. They were once igneous or sedimentary rocks which have been changed due to heat and pressure. Examples are Slate and Marble. (3) A solid, naturally occurring inorganic substance found inside or the Earth's crust. The igneous, sedimentary and metamorphic are the three kinds of rocks. (4) The non metallic rocks are more abundant and less expensive than metallic deposits. Most stone is limestone or granite. Limestone is also an important component of cement. Gemstones have important industrial applications. They are used as abrasives because they are hard minerals. (5) Minerals are the building blocks upon which life and our modern societies depend. Rocks are very important to mankind. We use the minerals in rocks for all sorts of things from fuel, tools and jewellery. Rocks are used to build things as well. **LETS EVALUATE:** Ans. Metamorphosis means change in form. These rocks are those which have changed their original form. They were once igneous or sedimentary rocks which have been changed due to heat and pressure. **ACTIVITY, PROJECT WORK :** children will do themselves **(GROUP DISCUSSION)** Ans. Fossil fuels can be saved by using them judiciously and encouraging renewable sources of energy like the sun, water and wind. They are in abundance.

CH. -14 THE SATELLITES A. (1) a (2) b (3) a **B.** 1) Air 2) Moon 3) Weather 4) Astronaut 5) Spacesuit **C.** (1) False (2) False (3) False (4) True (5) True **D.** (1) e (2) a (3) c (4) b (5) d **E.** (1) Neil Armstrong (2) Sputnik (3) The Moon (4) The Sun (5) Magellan **F.** (1) A heavenly body that revolves around a planet or another larger body is called a satellite. (2) Chandrayaan-1 was India's first lunar probe. It was launched by the Indian Space Research Organization. (3) A rocket-launched spacecraft able to land like an unpowered aircraft, used to make repeated journeys between the Earth and space. (4) Navigation satellites send messages from one country to another, from the land to an aircraft or to a ship. They determine the exact locations which help people who travel in remote places. (5) Aryabhatta was India's first artificial satellite and was named after the great Indian astronomer of the same name. It was launched by Russia on 19 April 1975. **G.** (1) The spacesuits that the astronauts wear protect them from all harm. The spacesuit allows an astronaut to work and survive

in space. (2) If there would be no communication satellites, the telephone, television and other electronic devices would not get any signals and would not work. (3) An artificial satellite is one of the most useful things for mankind. Different kinds of artificial satellites are designed for different purposes like Communication satellites send signal to telephone, television and other electronic devices and make them run. Navigation satellites determine the exact locations which help people who travel in remote places. Weather satellites help to study weather patterns and forecast weather. (4) Astronauts have to undergo intensive training to acquire all the skills and knowledge required on a space mission. They learn how to deal with emergencies. In special laboratories on the ground, they learn how everything will feel in space. They use the latest computer technology. Therefore they have to be well educated, possessing technical skills. (5) The Moon is the closest to the Earth. On 20th July,1969, the American spacecraft Apollo landed on the Moon. The crew of Apollo were Neil Armstrong, Edwin Adrian and Michel Collins. **LETS EVALUATE:** Ans. No, the life does not exist on the Moon because it has no air and water. **ACTIVITY, PROJECT WORK :** Children will do themselves.

MODEL TEST PAPER-1 **A.** (1) c (2) b (3) b **B.** (1) c (2) a (3) e (4) b (5) f (6) d **C.** (1) False (2) True (3) True (4) False (5) True **D.** (1) Rabi (2) Non-communicable (2) Helmet (4) Elements (5) Rodents **E.** (1) Aquatic animals are the animals who live in water. They have special organ which help them to swim in water. (2) The disease which spread from one person to another are called communicable diseases. These illness are usually caused by viruses or bacteria and are passed through air or through contact with contaminated surfaces. (3) A naturally oily substance obtained from plants and milk products. (4) The changes which cannot be reversed are called irreversible changes. (5) The flesh eating animals are called carnivores eg. Lion, tiger and wolf etc. **F.** (1) The animals migrate from one place to another in search of food and shelter. (2) The reactions which are reversible are called reversible changes. Processes such as melting, boiling, evaporation, freezing, condensation are reversible changes. (3) Do not leave heaters unattended and switch them off when leaving the room. Do not wear nylon clothes in kitchen. (4) Flowers contain the reproductive structures: stamens (male) and carpels (female). Seeds develop following pollination and fertilization. (5) Regular exercise is necessary for proper development of muscles. Well developed muscles make a person look healthy and graceful.

MODEL TEST PAPER-2 **A.** (1) b (2) c (3) c **B.** (1) f (2) a (3) d (4) b (5) c (6) e **C.** (1) False (2) True (3) False (4) False (5) True **D.** (1) Joint (2) Force (3) Thermal (4) Translucent (5) Richter Scale **E.** (1) A machine with few or moving parts is called a simple machine. (2) The fuels are in limited supply and take millions of years to from under the Earth are known as non-renewable source of energy. (3) Certain things produce light. For example, the Sun, the stars, fire, torch, electric bulbs, etc. give out light. These bodies are called luminous bodies. (4) Volcanoes which have almost no chance of erupting in the future are called extinct or dead volcanoes like kilimanjaro etc. (5) The energy possessed by a body by virtue of its position relative others is called potential energy. **F.** (1) • An earthquake always cause destruction of lives & property. • The undersea earthquakes can cause disasters like tidal waves. • It also causes landslides and fires. (2) The changing shapes of the Moon that we see from Earth are called phases of the Moon. Different shapes of the Moon are Full moon, New Moon, Crescent and Gibbous. All these phases repeat again and again. (3) **1. Lever :** A lever is a bar or a board which rests on a point where it can turn. It is a simple machine used to lift objects. **2. Pulley :** A pulley is a small wheel with a groove around its edge. The groove can hold a rope position. **3. Wheel and axle :** The wheel and axle consists of a wheel and an axle. The axle

could be a rod or a smaller wheel. The wheel rotates around the axle. (4) • Wash your eyes with clean water and wipe them with a clean cloth. • Do not read while lying down. • Ensure proper lighting while reading. Keep the book about one foot away from the eyes while reading. • Do not watch TV for a long time. Also, do not work on the computer for a long time. • Get your eyes checked. (5) **Pivot joint :** A pivot joint is a joint that moves by rotating. In humans, the pivot joint is found at the base of the skull between the first two vertebrae of the backbone. It allows the neck to move from side to side and upwards and downwards. **Hinge joint :** The hinge joints work like the hinges in a door. They move the bones through 180^0 in one direction only. Hinge joints are seen at the elbow, knee, finger and toes.

MODEL TEST PAPER-3 **A.** (1) b (2) c (3) a **B.** (1) f (2) e (3) d (4) c (5) b (6) a **C.** 1. True 2. False 3. False 4. False 5. True 6. True **D.** (1) Aluminium oxide (2) Chalcopyrite ore (3) Igneous rock (4) Soil conservation (5) Sandstone **E.** (1) Aryabhata (2) Sandstone, Shale (3) Diamond, rubies (4) Slate, Gneise (5) Top soil, subsoil, bedrock **F.** (1) **Sedimentation and decantation :** if the water is allowed to stand undisturbed for some time, the mud particles settle down. This process is called sedimentation. The solid matter collected at the bottom is known as sediment. The clear water on top is poured gently into another container taking care not to disturb the sediment at the bottom. This process is called decantation. **Filtration :** Another method of purifying water is to pass it through a thin cloth or filter paper. A filter paper acts like a strainer. it allows the water to pass through it but holds back the solid particles. (2) Deforestation, water, over grazing of cattle are three cause of soil erosion. (3) Igneous rocks are of many types. Some of the important types are described here – **1. Granite :** Granite is formed when the magma cools down in pockets. Granite is very hard and usually not porous. It is used for making monuments and buildings. **2. Basalt :** Basalt is an igneous rock that is formed when lava solidifies in the surface of Earth. It is a very hard, black coloured stone with fine granite. **3. Pumice :** Pumice is light and porous. It is formed when a volcano erupts. It is full of holes caused by volcanic gases which expand. (4) • Presence of oxygen in air makes respiration possible for living things and thus supports life. Oxygen is also necessary to create a fire. • The atmosphere absorbs energy from the Sun and warms the Earth's surface by retaining heat and not letting it escape. It reduces temperature extremes between day and night. • The atmosphere recycles water of the Earth through the water cycle. • The atmosphere protects life on the Earth by absorbing harmful ultraviolet radiation of the Sun. • The atmosphere burns off meteoroids and prevents them from hitting the Earth. Most of the sounds we hear travel through air. (5) Different kinds of artificial satellites are designed for different purposes. • Communication satellites send telephone, television and other electronic signals to and from different places on the Earth. • Navigation satellites send messages from one country to another, from the land to an aircraft or to a ship. They determine the exact locations which help people who travel in remote places. • Weather satellites help to study weather pattern and forecast the weather. They take pictures of the movement of clouds. They have special infra-red cameras which take photographs of the heat waves given off by the Earth. The temperatures of different parts of the Earth can be calculated from these photographs.