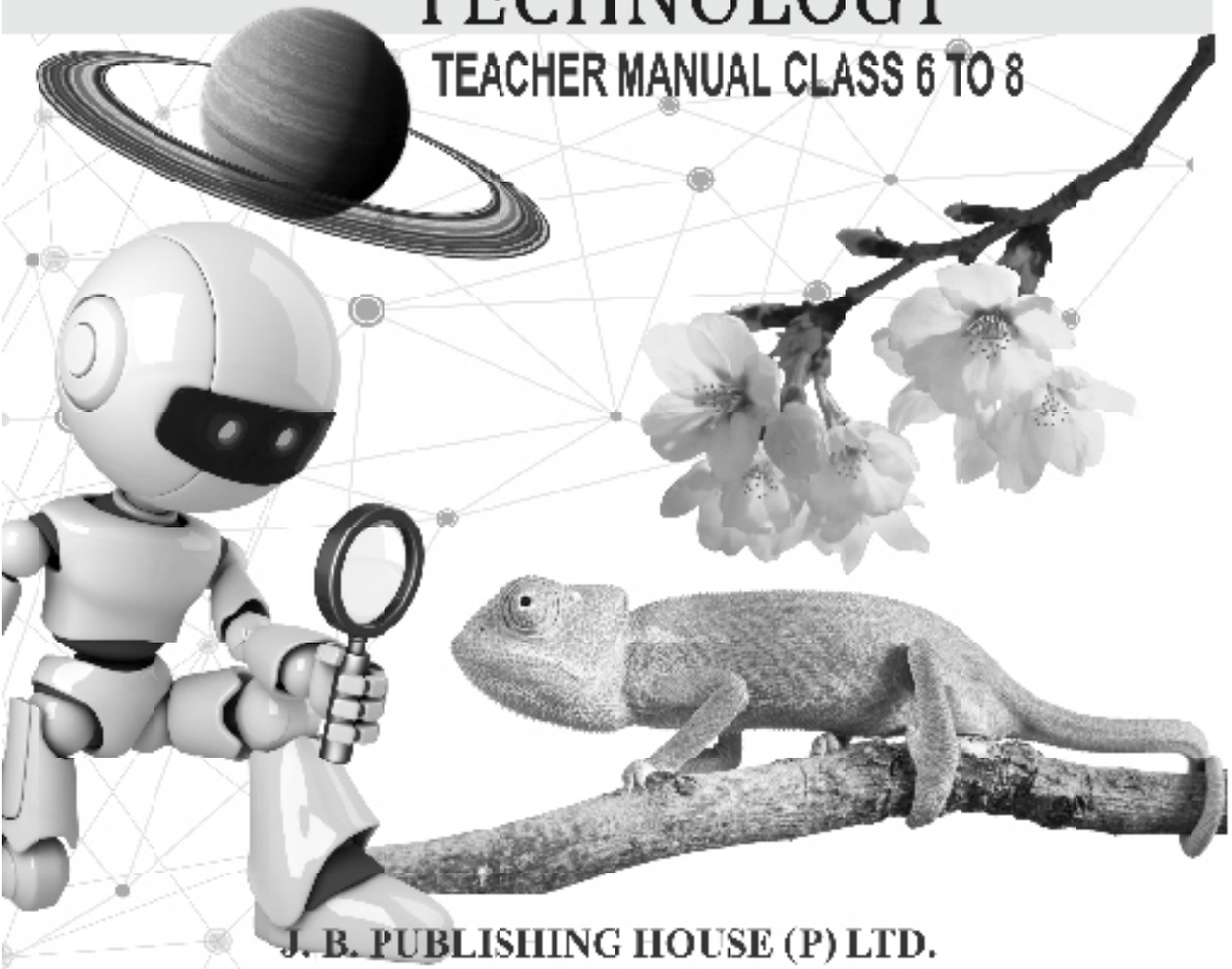
SMART

SCIENCE & TECHNOLOGY

TEACHER MANUAL CLASS 6 TO 8



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Book - 6

Chapter - 1 Our Daily Food

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (a) **4.** (b) **5.** (d).

B. Write whether true or false :

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

C. Fill in the blanks :

1. oil **2.** edible **3.** flower **4.** plants, animals.

Subjective Based Questions

A. Answer the following questions in not more than 20 words.

1. The variety of food are vegetarian food that includes vegetables and pulses or cereals and non-vegetarian food that includes meat, fish or eggs. **2.** Herbivores, carnivores, Omnivores. **3.** Eggs, meat, fish, milk. **4.** Milk, curd, cheese, ghee, eggs, meat, fish. **5.** Chapati is got when wheat flour and water is given as ingredients. **6.** Cow, buffalo, goat, sheep, camel. **7.** Vegetables, fruits, pulses, cereals, salad **8.** Radish, carrot, turnip, beet root.

B. Answer the following questions in not more than 40 words.

1. The food we eat in the morning is called Breakfast. We have milk, bread, butter, egg or jam as our breakfast. **2.** Potato and brinjal are vegetables and, chilly and clove are spices. **3.** Animals that eat both plants leaves and meat are called omnivore. Human and dogs are omnivores. **4.** An ingredient is a substance that forms part of a mixture. For example-in cooking, recipes specify which ingredients are used to prepare a specific dish. **5.** Milk and eggs are the two food items which are of animal origin. **6.** Food is required to get energy to do work and to stay healthy and fit.

C. Answer the following questions in not more than 60 words :

1. Animals which depend on animals for food are called carnivores. Lion, leopard, tigers are carnivores. These animals have sharp canines and claws for tearing the flesh of animals. **2.** All living organisms need food. But they do not eat same kind of food. It happens because all type of food cannot be available at one place. Food is available according to the atmospheric conditions. As wheat is much grown in UP while rice is grow much in coastal areas. This is due to the climate conditions. **3. (a)** Almonds, pistachios, cashew nut, groundnut etc. **(b)** Tea, Coffee, juice, cold drinks etc. **(c)** Chilly, cumin seeds, turmeric, clove, ginger, garlic etc. **4.** To make sprouts of dry moong. Soak them in a bowl filled with water for a day. Next day, take them out from the bowl and tie them in cloth. Hang them for two days. On the third day, the moong will be sprouted. **5.** There is a lot of variation in the food eaten in different regions of India because India has different landforms, weather conditions and different soils. These three factors that affect the availability of food sources. For example– UP has favourable condition for wheat crops, and coastal areas for rice and coconut. Except food from plants, food from animals also varies. In coastal areas, sea food is eaten more while in land areas, mutton, chicken beef are eaten.

Value Based Question

Junk food is not good for health. It affects your heath as well as your looks and beauty. It causes obesity and none wants to be fat. So eat green vegetables and healthy food as it maintains your health as well as your beauty.

Think And Tell

Salt is not obtained neither from plants nor from animals.

Hots

No, everyone around us do not get enough food to eat. Firstly, some people have plenty of food and waste it. They does not know the value of food. Secondly, increasing population is also responsible for the shortage of food.

Chapter - 2 Components of Food

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Write whether true or false :

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

C. Fill in the blanks :

1. carbohydrates, fats **2.** balanced **3.** loss of vision **4.** proteins.

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Milk is important as it contains all the nutrients and a rich source of calcium. **2.** A diet which contains all essential components of food in the required measure is called balanced diet. **3.** Diseases that are caused due to the deficiency of nutrients are called deficiency diseases. **4.** Mid-day Meal is a dietary programme launched by the government. **5.** Rich sources of vitamin C are fresh and frozen vegetables, citrus fruits, guava, strawberries, kiwi fruit and pepper. **6.** Vitamin D is get from sunlight.

B. Answer the following questions in not more than 40 words :

1. If we eat too much fat rich food, we have to face obesity. **2.** If a person doesn't get enough proteins in his food for a long time, his natural growth will be stopped. Body cannot be able to mend the damaged tissues and to make new cells. **3.** Anaemia is caused due to the deficiency of iron. Following are the symptoms of anaemia- (i) breathelessness and early exhaustion. (ii) Pale face, lips and nails. (iii) Early exhaustion at the higher altitudes. **4.** We should include water in our diet because it helps in digestion, maintain body temperature and weight. **5.** Calcium is a mineral that is necessary for our bones health. It makes our bones strong. **6.** Three different types of food are - (i) Energy giving food (vitamins and fats) - jaggery, potato, butter, grapes etc. (ii) Protective food (proteins and vitamins) - eggs, meat, pulses, cereals, fruits etc. (iii) Body building food (minerals)- milk, green vegetables, nuts, egg, yolk etc.

C. Answer the following questions in not more than 60 words :

1. Take different food materials (wheat, flour, dal, bread, egg, milk) in different beakers. Add a few drops of caustic soda solution to each of them. Shake well and let the beakers stand for a few minutes. Observe the colour change in each of them. You will observe a violet colour in which protein in present. **2.** Water is important in our food because of the following reasons- (i) It dilutes our blood and helps to remove excess sweat from the body. (ii) It regulates our body temperature. (iii) It changes the food into liquid form. (iv) It is helpful in digestion. **3.** The diet which provides all the nutrients in adequate quantity, along with right amount of roughage and water. It is important for growth and good maintenance of good health. It provides all the three kinds of food and helps us to be healthy and fit internally and externally. **4.** Mid-day-Meal is a dietary programme launched by the government in India. It involves provision of lunch, (free of cost) to school children on all working days. Its key objectives are protecting children from classroom hunger, increasing school enrolment and attendance, improved socialisation and social improvement through provision of employment to women.

Chapter 3 Separation of Substances

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (c) **2.** (c) **3.** (d) **4.** (a) **5.** (d) **6.** (c) **7.** (d) **8.** (a)

B. Fill in the blanks :

1. winnowing **2.** sewing **3.** insoluble **4.** filtrate **5.** residue **6.** saturated **7.** filter paper

C. Write whether true or false :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. The process of changing liquid into water vapour is called evaporation. It is done on heating the liquid. **2.** Winnowing is used to separate heavier and lighter components of a mixture by wind or by blowing air. **3.** We can dissolve more sugar in hot water. **4.** Decantation is used to separate tea leaves from tea. **5.** To separate very small particles of sand, pieces of rocks and seeds from wheat or any flour like substance is called sewing.

B. Answer the following questions in not more than 40 words:

1. We separate substances to remove harmful and unwanted components and to get pure and useful substance. **2.** Hand-picking is not suitable if quantity of impurities is large because it will consume a lot of time, labour and workers. **3.** Winnowing separates heavier and lighter components of a mixture, while threshing separates grains from stalks.

Winnowing is done by wind or by blowing air on the other hand threshing is done by beating stalks. **4.** Cleaning (vacuum cleaner), water taps, tea pouring, clothes dryer. **5.** Sedimentation :- It is the process in which the heavier insoluble particles are allowed to settle down at the bottom of the container. Decantation :- When the heavier insoluble particles settled down at the bottom. The liquid is poured gently without disturbing the insoluble particles, it is called decantation. Filtration :- The process used for separating an insoluble solid from a liquid. **6.** To make saturated solution, mix the solute in a liquid until it cannot dissolve any more solute. **7.** Iron filling can be separated through a magnate and salt through the process of evaporation and chalk power through sedimentation and decantation.

C. Answer the following questions in not more than 60 words:

1. Filtration is the process that is used for separating insoluble solid from liquids. Take some muddy water in a beaker. Allow it to stand undisturbed for some time. After half an hour, you will observe all the mud particles settle at the bottom of the beaker and a layer of clean water can be seen on it. Now separate the mud from the clean water. **2.** The process of evaporation is used in making common salt near the sea coasts. Sea water is allowed to be collected near sea shore in shallow and large pits. The sun rays heat the water due to which it undergoes evaporation. The evaporating water leaves behind the salt. The residue left on the evaporation is a mixture of salts. Common salt is separated from this mixture by further purification.

HOTS

River water is clear inspite of being muddy and sandy because it flows continuously.

The left out sugar can be dissolved on heating.

Chapter 4 Fibre to Fabric

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (b) **4.** (b) **5.** (a)

B. Fill in the blanks :

1. yarn **2.** black **3.** raw **4.** wool **5.** yarns **6.** weaving, knitting **7.** looms

C. Write whether true or false :

1. T **2.** F **3.** F **4.** T **5.** T **6.** F **7.** F

D. Match the following :

1. (i) **2.** (iii) **3.** (v) **4.** (ii) **5.** (iv)

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Punjab, Haryana, Gujarat and Rajasthan. **2.** Bihar, Assam and West Bengal. **3.** It happens because of their properties. **4.** Sheep is the main source of wool. **5.** The thread like material used to make cloth or fabric are called fibres.

B. Answer the following questions in not more than 40 words:

1. Fibres are classified as natural fibres and man made fibres on the basis of their origin. **2.** We prefer cotton over nylons in summer because it absorbs the sweat and keeps the body cool. **3.** Black soil and warn climate is needed for growing cotton. **4.** The process of separating cotton fibre from its seeds is called ginning. **5.** Weaving is done on looms while knitting is done by needles. Weaving yarns are intercrossed while in knitting yarns are interloped. **6.** Yarns are got from fibre while fabric is got from yarns. Yarns are the middle stage of a fabric while fabric is the final stage.

C. Answer the following questions in not more than 60 words:

1. Ginning and spinning are the method to get yarn from cotton balls. The farmer hand-picks the seeds of cotton and dries them. Fibres are the separated from the seeds by combing. This is called ginning. In spinning, fibres are not only twisted but also pulled out or drawn. It is done by hand using takli (spindle) and charkha. It is also done by machines too. **2.** To identify the natural and synthetic fibre a burn test is held. If a fibre burns continuously or melts away, it is a synthetic fibre and the other is natural fibre. **3.** Pure wool can be checked by taking a burning test. Take the thread of the sweater to a lighted candle, if the thread do not catch fire, it is pure wool.

Chapter 5 Sorting Materials Into group

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (d) **3.** (d) **4.** (c) **5.** (c) **6.** (c)

B. Fill in the blanks :

1. materials **2.** water **3.** lustrous material **4.** iron, copper,gold **5.** oxygen **6.** differences, similarities **7.** heat, pressure **8.** transparent, translucent, opaque

C. Write whether true or false :

1. T **2.** T **3.** T **4.** F **5.** F **6.** T **7.** T

D. Find the odd one out:

1. rose **2.** chalk **3.** metal **4.** lime jar **5.** sand **6.** chain

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. We need to group material to use them according to the need and to know their importance. **2.** Appearance, hardness, solubility and transparency. **3.** Lemon juice and vinegar are soluble in water. **4.** Ghee and oil are insoluble in water. **5.** Glass and water are transparent objects. **6.** Butter paper and oiled paper are translucent objects.

B. Answer the following questions in not more than 40 words:

1. Heavy objects like metals get drowned in water. **2.** A cork is light in weight and a small stone is heavy. Therefore a cork floats and a stone sink in water. **3.** Glass is used in windows because they are transparent. **4.** Metals are hard and have high density and alloy is a parent metal and is tough. While non-metals have low density and week strength. **5.** The density of a substance is its mass per unit volume.

C. Answer the following questions in not more than 60 words:

1. Classification of materials into group is necessary because if helps to know the quality and basic merit and demerits of materials. It can make their usage easy and comfortable. Classification of materials is done on the basis of their appearance, hardness, solubility, floating

or sinking and transparency. **2.** Iron, alluminium, copper are used for building materials as they are durable, tough and flexible. Gold and silver are used for making ornaments as they are flexible, shiny and are mouldable. **3.** Solubility of different substances and materials is not same. Some materials are soluble while some materials are insoluble in water. Rocks, metals, plastic, wood etc do not dissolve in water. On the other hand salt, sugar, vinegar, lime juice, cold drinks etc dissolve in water. Substances that dissolve are called soluble and substances that do not dissolve are called insoluble. **4.** Take samples of some objects like a small stone, a piece of wood, a piece of cork, nail. Now take a beaker with some water in it. Now put these objects in water in the beaker and observe what happens. **5.** Rough materials do not allow the things slide easily while on smooth materials allow the things slide easily. **6.** Utensils are not made of wood or plastic because they are used in cooking and cooking is done on flame or fire. Wood and plastic are such materials that burns when they come in the contact of fire.

HOTS

As soon as the cap of a cold drink bottle is opened liquid come out because there is carbon-dioxide in it and it is kept in a high pressure and this pressure is withdrawn when the bottle is opened and the cold drink starts to come out.

Chapter 6 Change Around Us

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (c) **3.** (b) **4.** (b) **5.** (c) **6.** (a)

B. Fill in the blanks :

1. reversible **2.** irreversible **3.** expand **4.** contract **5.** chemical **6.** expands

C. Write whether true or false :

1. F **2.** T **3.** T **4.** F

D. Classify the following changes into reversible and irreversible changes:

1. reversible **2.** irreversible **3.** irreversible **4.** irreversible **5.** reversible **6.** reversible

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. A growing plant. **2.** Reversible change is physical change. **3.** In the chemical change, a substance loses its properties. **4.** Melting of wax. **5.** A temporary change in which no new substance is formed is called physical change. **6.** A permanent change in which a new substance is formed with different properties is called chemical change.

B. Answer the following questions in not more than 40 words:

1. Reversible change is a change that can be reversed. Example - cold milk to hot milk. Irreversible change is a change that cannot be reversed. Example- cooking to food. **2.** A plant into a tree, a grape when stepped, stretched rubber band to its normal size, blowing up a balloon etc.

C. Answer the following questions in not more than 60 words:

1. Take a piece of paper and fold it as shown in activity 1 page no. 56. You have changed the sheet of paper into a toy boat. You may have lots of fun in sailing this boat in water. Once you are tired of it, unfold the paper and dry it. **2.** Take a sheet of paper. Now tear it into four pieces. You get four small pieces from a sheet of paper. It cannot be turned into its earlier position. It is a physical change. Take a sheet of paper. Now burn it. You will see that the sheet of papers is turned into ash. You cannot obtain as a paper. Its properties are changed now. It a chemical change. **3.** When a metal is heated, it expands and when it is cooled, it contracts. It can easily be observed in the electrical supply cables. In summer, cables sags between the poles and in winter they stretched. In the same way, a heated metal ball passes easily through a ring and a cooled metal ball could not pass out the ring.

D. Classify the following changes in as many ways as you can :

1. Reversible (physical) **2.** Reversible (physical) **3.** Reversible (physical) **4.** Irreversible (physical) **5.** Irreversible (physical) **6.** Reversible 7. Reversible (physical) **8.** Irreversible (chemical) **9.** Irreversible (physical) **10.** Irreversible (chemical)

HOTS

The iron blade is heated at a fixed temperature and immediately fixed to the wood in handle and put in cold water. Thus it become firm and tightly fixed to the handle.

Chapter 7 Getting To Know Plants

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (c) **3.** (b) **4.** (a) **5.** (b) **6.** (d) **7.** (b)

B. Fill in the blanks :

1. gynoecium **2.** **3.** herbs **4.** venation **5.** blade **6.** node

C. True or False :

1. F **2.** F **3.** T **4.** F

D. Distinguish between the following:

1. Tap root has a main primary root with many secondary roots on its sides. Fibrous root has a cluster of roots arising from the base of the stem. **2.** If the veins run parallel to one another from the base of the tip of the leaf said parallel venation. If the veins are arranged in a net like pattern on both sides of the mid rib is said reticulate venation. **3.** Root is the underground part of a plant. Stem is the above ground part of a plant. **4.** Herbs are small plants with a green soft stem. Shrubs are medium-sized plants with hard and woody stems. Trees are tall plants with hard woody stems.

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Beet root is modified for storing food. **2.** Carrot has a tap root. **3.** Ovule is a tiny ball-shaped structure present in the ovary. **4.** Nectar of a flower attracts pollination agents. **5.** Calyx protects a flower in the bud stage. **6.** Cactus is a modified shoot. It swell up to store water.

B. Answer the following questions in not more than 40 words :

1. In the tap root system, there is a main root and many other roots called lateral roots spread out. Carrot and radish have tap root. In the fibrous root, a cluster of roots is found. It starts from the base of the stem. Spinach and grass have fibrous root. **2.** Function of roots :- (i) Absorb water for photosynthesis. (ii) Absorb minerals for the growth the plants. (iii) Fixes the plant firmly to the soil. (iv) Stores food in some plant such as carrot, beet root. (v) Provide base to the plant. **3.** Take a small herb. Cut a part of its stem with leaves. Immediately after cutting, dip the cut end into the coloured water in a beaker. Leave the set-up for a few hours. After few hours, observe the stem and record your observation. After a few hours, the stem appears coloured due to the intake of coloured water. The stem has conducting tissues : xylem and phloem. The xylem is responsible for transporting water from root to the leaf whereas the phloem is responsible for transport of food synthesized in leaves to root and fruits. **4.** Simple leaf : It has a single undivided leaf blade. It is directly attached to the stem by a petiole. Mango, peepal and banana have simple leaf. Compound leaf : Its blade is divided into a number of segments called leaflets. Leaflets are brome or a single stalk called rachis. Rose, neem and coriander have compound leaf. **5.** Function of leaf :- (i) Prepare food by the process of photosynthesis. (ii) Exchange gases; carbon-dioxide to oxygen. (iii) Remove extra water by the process of transpiration. (iv) Store water and food (desert plants and cactus) (v) Produce new plants (begonia and bryophyllum)

C. Answer the following questions in not more than 60 words:

1. Modification of stem :- (i) Stem of plants such as cactus and jade swell up to store water in them. Stems of cactus become leaf like and flattened to perform photosynthesis. (ii) Stems may

be modified as thorns or hard and sharp prickles to protect them from being eaten by animals. (iii) In some plants, the stem modified itself in the form of a root to store food and protect itself from the unfavorable condition. Modification of Leaf :- (i) In garden peas or pea plant, leaves modify themselves in the form of soft spiral tendrils to gain and additional support. (ii) In insectivorous plants e.g. pitcher plant, leaves modify themselves in the form of a pitcher to trap insects. (iii) In xerophytic plants, leaves modify themselves in the form of spines to reduce water loss form plants, e.g. cactus. **2.** Copy the diagram from pg 71 (structure of flower) **3.** Cactus is a plant of desert. There is a shortage of water and rain. As water is an essential part for living, a cactus plant modified itself into spines so that it can store more water and check the loss or shortage of water. **4.** Take two ovaries from different flowers. Cut them in two different ways as shown in the figure. To present them form drying put a drop of water on each of the two pieces of the ovary, you have cut. Observe the inner parts of the ovary using a lens. Do you see some small bead like structures inside the ovary? They are called ovules. **5.** The process of transfer pollen grains from anther of a flower to the stigma of the same or another flowers is called pollination. Insects like bee and butterfly suck nectar from flowers. When these insects alight on a flowers, the pollen grains are transferred to the stigma of other flower, thus affecting the pollination.

HOTS

If all plants extinct from the earth, all the living beings would not be able to survive and the landforms that are seen green and beautiful would turn into brown and barren.

Chapter 8 Body Movements

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (b) **3.** (b) **4.** (b)

B. Fill in the blanks :

1. bones **2.** muscular flat foot **3.** setae **4.** ball and socket **5.** hinge

C. True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Snail and tortoise have exoskeleton and human and fish have endoskeleton. **2.** The three parts of skull are cranium, facial skeleton and jaw bones. **3.** Rib cage consists of 12 pairs of ribs. **4.** Fenurs is the longest and stapes is the smallest bone in the human body. **5.** There are 14 bones in the face of a person.

B. Answer the following questions in not more than 40 words :

1. The tail fins of a fish helps it to change the direction of its movement. **2.** An earthworm crawls on the ground with the help of setae by expending and contracting its muscles. **3.** Birds have streamlined body and hollow and light bones. They have special bones and muscles of hind limbs for hooping and perching. They have modified breast bones to hold the strong muscles of flight. **4.** Man uses his hind limbs for locomotion while other vertebrates use their fore and hind limbs for locomotion. **5.** The framework that give shape to our body is called skeleton. Its major functions are :- (i) It protects our internal organs. (ii) It supports our body and gives a distinctive shape. (iii) It allows movement. (iv) It makes new blood cells to maintain a healthy bloodstream.

C. Answer the following questions in not more than 60 words :

1. Human forelimbs are modified to perform bloodstream. The upper arm has only one bone while the lower arms has two bones which are further attached to the wrist, palm and fingers. The palm consists of five bones. Each finger consists of small three bones joined to each other. **2.** There are four types of joints in human skeleton. They are - (i) Ball and Socket Joint :- In this type of joint, the round, ball-like end of one bone fits into the same-size notch (socket) of the other.

bone. The shoulder joint and hip joint have this type of joint. (ii) Gliliding joint : These joints facilitate the gliding movement of one bone over the surface of the other bone. Vertebrae , wrist and knee have this type of joint. (iii) Pivot Joint : It allows to move head forward or backward, rotate or turn it sideways. This joint is found in the skull and the first two vertebrae. (iv) Hinge Joint :- This joint allows to make movement only in one direction. The elbow, fingers, knee and foot have this joint. **3.** The movement of the entire body from one place to another is called locomotion. Human's locomotion is done by hind limbs. Animals locomotion is done by their fore and hind limbs. Some insects crawl through their strong muscles and fish swim through their fins.

Chapter 9 Living Organisms and Their Habits

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (c) **4.** (b) **5.** (d) **6.** (a)

B. Fill in the blanks :

1. cone **2.** reproduction **3.** excretion **4.** hollow, spongy **5.** oxygen, carbon-dioxide **6.** stomata

C. True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Plants give out carbon-dioxide and gum plant gives out oil as waste and animals give out undigested food as faces and uric salts as urea. **2.** Lotus and water lily are hydrophytes. **3.** (i) Respiration is the process of breathing in and breathing out. (ii) Excretion is the process in which living beings throws out waste form their bodies. (iii) Stimulus is an agent towards which a living being react. (iv) Growth is the process in which a living being changes big physical appearances as a child is changes to an adult. **4.** The surroundings including the environment condition which provide the organisms its food, water air and shelter constitute the habits of those organisms. **5.** Plants which are found in aquatic (water) environment are called hydrophytes. These are plants which live in aquatic habitats e.g. water hyacinth, lotus, trapa etc. **6.** Certain ficus varieties, pandanus, orchids, philodendron, scindapsus etc.

B. Answer the following questions in not more than 40 words :

1. Living things : Living things breathe. They need air food and water to survive. They grow. They can make movement on their own. They reproduce young ones of their own kind. Non-Living things : Non living things do not breathe. They do not need air, food and water to survive. They do not grow. They cannot make any movement untill someone move them. They do not reproduce. **2.** Stimulus is an agent to react and respond is an action towards an stimulus. When you touch a hot surface by mistake, you immediately, take your hand away from the hot surface. It happened as the hot surface is not bearable for you and you at once react (respond) towards it. **4.** To move towards light to get light by a plant is called phototropism. Roots have a tendency to grow towards gravity and stem tend to grow against it response is called geotropism. **3.** To move from one place to another is called locomotion. While to move towards the desired direction is called movement. **5.** Plant :- Plant produce food. Plant make movement at the fixed place. Plant releases oxygen. Plant breathe through stomata. Animal :- Animal consume food. Animal make movement by moving from one place to the another. Animal releases carbon-dioxide. Animals breathe through lungs, skin, gills or air tubes. **6.** (i) A cactus is a xerophyte. It has spines and stores its food in its stem. It is found in desert areas. (ii) Pine tree is a mesophyte. It is found in hilly areas. It has a shape of cone. It does not produce flower. (iii) Water hyacinth is a hydrophyte. It is found in aquatic habitat. It has a poorly developed root system.

C. Answer the following questions in not more than 60 words :

1. Chief characteristics of living beings :- (i) Feeding :- All living beings need food to live, grow

and to get energy to work. On the basis of feeding organisms are categorized as autotrophs or heterotrophs. (ii) Breathing :- All the living beings breath. They breath through lungs, gills, stomata,skin or air tubes. (iii) Growth :- All the living being show growth. A child become an adult, a sapling becomes a plant, a puppy grows into a dog. (iv) Locomotion or movement :- All living being move. They make movement or locomotion. (v) Excretion :- All the living being exhibit excretion. They throw out waste in the form of urine, urea, faeces, oil, sweat or carbon dioxide. (vi) Irritabiltity :- It shows stimulus and respond. When a mimosa plant is touched. It closes it leaves at once as it has irritability towards by touch. (vii) Reproduction :- All the living beings reproduce their young ones of their own kind. Example :- Woman reproduce a child a bitch reproduce a puppy,cat gives birth to a kitten etc. **2.** Mesophyte :- All the plants on land, except those growing in desert condition, are mesophyte. They grow in condition where there is moderate amount of water available for them to survive. They modifies according to the climate condition. Neem, fir, banyan, sheesham are mesophyte. Hydrophyte :- Plants which are found in aquatic environment are called hydrophyte. They live in aquatic habitat. They have a poorly developed root system to absorb water as they live in water. Lotus, duckweed, tape grass etc. are hydrophyte. Xerophytes :- The plants growing in water-scarce conditions of desert are called xerophytes. They have a long and well-developed root system to absorb water from the deeply placed water table cactus, date palm etc are xerophytes.

Chapter 10 Motion And Measurement of Distances

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. rectilinear motion **2.** rotatory motion **3.** circulatory motion **4.** rectilinear motion **5.** oscillatory motion **6.** vibratory motion

C. True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Kilogram is the unit of mass. **2.** Litre is the unit to measure liquid as milk, oil. **3.** A hand span, foot span and a cubit are used by people in olden days for measuring length. **4.** We measure physical quantity in terms of a value a number. It is called measurement. **5.** Circulatory motion **6.** Periodic motion.

B. Answer the following questions in not more than 40 words :

1. When a body moves along a straight line, the motion described by the body is rectilinear motion. The motion of vehicles on a straight road, march past of the soldiers in a parade are the examples of rectilinear motion. **2.** Qualities of standard units- (i) legal base (ii) hierarchy (iii) universality (iv) consistency **3.** When objects or any of their parts move in a circular path, the motion is called rotation or circulatory motion. **5.** When an object repeats its motion after a fixed interval of time, the motion is called periodic motion. The motion of the earth around the sun is periodic. **6.** The motion of the earth around the sun and the motion of moon around the earth are a combination of linear and rotatory motion. **7.** We should take reading from a perpendicular direction because it runs in parallel line and gives the accurate measurement.

C. Answer the following questions in not more than 60 words :

1. Metre has been chosen as standard unit of length. The sample of unit length is kept at National Physical Laboratory (NPL). Metre, centimetre, milimetre and kilometre. **2.** We should use the standard units while taking measurement. All the rules of measuring must be followed to get accurate measurements. **3.** Measurements should be taken on the bearing support housing or the

structural positions. **4.** The correct length of the box is 6.5. **5.** Draw a curved line on paper. Take a thread. Put the not made in thread at one end of the line. Place a small portion of the thread along the line keeping it tight suing your fingers and thumbs. keep on stretching the thread on the curved line till you take the thread to other end of the line. Make the mark on the thread where it touches the other end of thread. Now measure the length of this thread with a ruler this length gives the length of curved lines.

Chapter 11 Electricity and Circuits

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (a) **3.** (c) **4.** (b) **5.** (a) **6.** (b) **7.** (c) **8.** (b)

B. Fill in the blanks :

1. power **2.** energy **3.** cell **4.** filament **5.** electric

C. Name the following :

1. battery **2.** bulb **3.** open circuit

D. Choose the correct answer :

1. two **2.** positive **3.** conductors

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Ionic components conducts electricity in molten state. **2.** Switch **3.** Copper, iron, silver, gold, sodium, acids, bases and salt solutions. **4.** Switch **5.** Negative charge

B. Answer the following questions in not more than 40 words :

1. (i) Positive charge (ii) Negative charge **2.** Negative charge **3.** Substances which allow electricity to follow through them are called conductors. Metal and alloys of metal are conductors of electricity as iron and acids. **4.** Insulators are those substances which do not allow any light to follow through them. Wood and paper are insulators. **5.** A fuse is used to check possible cause of fire due to large current supply. **6.** Switch is used to break the circuit when the circuit breaks up no currents flows through the circuit. **7.** A socket is used to obtain the current supply. When we want to use an electric iron, we insert the plug of the iron into the socket to heat the iron.

C. Answer the following questions in not more than 60 words:

1. Do yourself. **2.** An electric cell is used in alarm clocks, wrist watches, transistors, radio camera etc. Its work is to convert chemical energy into an electrical current. **3.** Diagram from Page 114 from book. **4.** (Diagram from Page 117) In a torch two dry cells are connected one after the other such that the positive terminal of one dry cell touches the negative terminal of other cell. **5.** Different connectors used in electricity circuit:- (i) Bulb (ii) Switch (iii) socket (iv) Fuse wire **6.** Safety measures that can be adopted in the usage of electric current :- Avoid wet hands while working with electrical goods. **7.** Hazards associated with the usage of electricity are - (i) A person can receive electric shock if he is using appliances has a wire in which PVC insulation wire is cut. (ii) Our body is a conductor of electric current and it cant bear for long the electric shock and may cause death of the person. **8.** The whole of the electric energy provided by supply is not used to do productive wok, some part is wasted in many ways by keeping lights on or not taking care of other resources.

Chapter 12 Fun With Magnets

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. navigation **2.** magnet **3.** natural magnet **4.** magnet **5.** magnetic

C. Write True or False :

1. T **2.** F **3.** T **4.** T

D. Name the following :

1. Iron, cobalt, steel **2.** North-pole, South-pole **3.** Attractive property

E. Classify the given materials as magnetic or non-magnetic:

Magnetic Materials : Shaving blade, blade of knife,iron-nail, sewing needle, paper clip, safety pin spoon. **Non-Magnetic Materials :** A plastic Ruler, A steel Cupboard, A brass button, A piece of chalk, A plastic mug, water, woolen stick,copper wire, eraser, cork, rubber band, tooth brush.

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Magnet that do its work in electric field is known as electromagnet and this effect is known as electromagnetic effect. **2.** Magnetic substances can be separated from non-magnetic substances through magnetic field. **3.** Magnetism is strongest on the poles of a magnet. **4.** Three natural magnets are - iron, cobalt and steel. **5.** A freely suspended magnet always comes to rest in the north-south direction. **6.** Two properties possessed by magnets are - (i) Directional property (ii) Attractive property

B. Answer the following questions in not more than 40 words:

1. The two poles of a magnet are considered inseparable because they lie on a only magnet. **2.** If we are provide with two iron bars of equal size, we can identify a magnet and an ordinary bar because an iron bar becomes a magnet when one of the poles of a magnet is rubbed on its several times. **3.** The directional property is that a freely suspended magnet aligns in NS. It helps sailors to know direction. **4.** A piece of iron is buried in ground. It occurs demagnetization. It is done so that iron losses its magnetic field. A dry cell contains zinc-carbon batteries and alkaline batteries.

C. Answer the following questions in not more than 60 words :

1. A magnet is demagnetized if it loses its magnetic field. Demagnetization of a magnet occur due to several causes- (i) Heating a magnet above a particular temperature. (ii) Hammering the magnet that will disturb the molecular orientation. (iii) Leaning the poles of a magnet free which causes slow self demagnetization. Steps that should be taken to prevent it-(i) In laboratory where small magnets are used the magnets are placed in pairs with opposite poles along the sides. (ii) Opposite poles are covered with thin plates called Keepers. **2.** About 5000 years ago, In Magnesia the people discovered a particular rock that would attract small pieces of iron towards it. Later it was found that the rocks contained a natural magnet and were named magnetic.

Chapter 13 Light and Reflection

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (a) **4.** (c) **5.** (c)

B. Fill in the blanks :

1. light **2.** luminous objects **3.** transparent **4.** opaque **5.** translucent **6.** straight line **7.** shadow **8.** light, opaque **9.** eclipse **10.** circular **11.** reflection

C. Answer in one or two words:

1. (i) Sheet of card board (ii) Metallic sheets **2.** (i) Air (ii) water **3.** (i) Butter paper (ii) White clouds in sky **4.** (i) Sun (ii) burning candle **5.** (i) Moon (ii) Tables

D. Choose the correct Answer:

1. mirror **2.** same **3.** luminous **4.** opaque **5.** dark

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. The objects which give out light energy of their own are called luminous objects. **2.** We can see luminous objects in other object's light. **3.** Reflection is the phenomenon of bouncing back of light from a surface. **4.** Two transport objects are - air, water. **5.** Two opaque objects are - shut of cardboard, metallic sheets **6.** A shadow is a dark patch formed behind an opaque object when it obstructs the passage of light.

B. Answer the following questions in not more than 40 words :

1. Natural sources of light are the sun. The stars and the moon are also natural sources of light but they receive light from the sun. **2.** Man made sources of light are candle, lamps, gaslights, electric lamp, fluorescent tubes etc. give us light. **3.** A body caste a shadow when there is presence of light. **4.** The size of shadow depends on- (i) The size of shadow of light and the object. (ii) The distance between the source of light and the object. **5.** Necessary thing for the formatting of a shadow- (i) An opaque object, a source of light and a screen is needed for the formatting of a shadow. (ii) The size and shape of body or object. (iii) The time whether it is morning or evening. **6.** Uses of light are infinite. The sun is main source of light. It is necessary for everything. **7.** Do your self.

C. Answer the following questions in not more than 60 words :

1. Light coming from an electric bulb diminishes in order to brightness or intensity in other room due to distance. **2.** Light travels in straight line. It can be showed by taking three cardboards of the same size. Make a hole in the centre of every sheet by drawing diagonals. Arrange these boards so that they stand in straight line. Place a lighted candle in front of first card board. The flame will be clearly visible through the hole in the card board. Now, disturb the middle cardboard slightly so that holes are no longer in straight line. The flame will not be seen. This shows that light travel in straight line. **3.** Opaque bodies allow light not to pass through them e.g. Sheet of card board, metallic sheet. Translucent bodies allow light to pass through them partially eg: butter, paper. **4.** A shadow is formed when something comes in the way of light. Usually shadows are formed on the opposite side to the source of light. For the formation of a shadow of a opaque object, a source of light and a screen are needed. **5.** Using a point source of light, shadows are formed on the side opposite to the source of light. **6.** Using an extended point source of light, the shadow is formed same as that of the point source of light. **7.** Light travels in straight line. The activities in this regard include- Take three cardboard of the same size. Make a hole in the centre of the every sheet by drawing diagonally arrange these boards so that they stand in a straight line. Place a lighted candle in front of first card board. The flame will be clearly visible through the hole in the card board. Now disturb the middle cardboard slightly so that holes are no longer in a straight line.

Chapter 14 Water

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. respiration **2.** rain **3.** cloud, humid **4.** evaporation **5.** underground water **6.** fog **7.** snow, hail **8.** rain water

C. Write True or False :

1. T **2.** F **3.** F **4.** F **5.** F **6.** T **7.** F

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Some of the natural resources available on the earth are air, water, rocks, plants etc. **2.** 70% of

our body weight is because of water. **3.** Sources of water : (i) Rain water (ii) Ground water (iii) Surface water **4.** Sea water can not be used for drinking purpose because it is salty. **5.** Drought is an abnormalcy prolonged dry water when enough water is not available to fulfill the water requirement.

B. Answer the following questions in not more than 40 words :

1. Effects of drought : (i) Disruption in the cropping programme; (ii) Loss of breeding stock ; (iii) A decline in the total productivity. **2.** Some harmful effects of floods are : (i) Loss of plant and animal life, Plants die in flooding conditions. (ii) Destruction of property. (iii) Displacement of people from the flooded areas. **3.** Floods adversely affect the plant but the flowing of flood water also causes soil erosion. However, fertility of soil is increased. **4.** Water is important for animal because : (i) The digestion and absorption of the digested food. (ii) Removal or elimination of body wastes in the form of sweat and urine. (iii) Regulation of the body temperature in warm-blooded animals like man, birds etc. **5.** An excessive use of underground water for different activities contributes to the condition of drought in every state.

C. Answer the following questions in not more than 60 words :

1. The groundwater is considered safe to drink than surface water because groundwater is a source of fresh water where as surface water carries many soluble impurities and animal excreted along with it. **2.** Water is saviour because we demand on water. It is essential for all living organisms. About 707% of our body weight is due to water where as 607% weight of a healthy tree is because of water. It saves ourselves from many things. On the other hand it causes flood. Many states in India are affected by floods. Floods adversely affect the plant and animal life including the life of human beings. Hence, water is saviour and destroyer.

Chapter 15 Air

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (a) **4.** (a) **5.** (b) **6.** (b) **7.** (a) **8.** (b)

B. Fill in the blanks :

1. mixture of many gases **2.** oxygen **3.** dissolves **4.** agriculture **5.** atmosphere

C. Write True or False :

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

D. Choose the correct answer :

1. decreases **2.** carbon dioxide **3.** 78 percent

E. Name the following :

1. carbon dioxide **2.** nitrogen **3.** oxygen **4.** sunlight

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Two major components of air are : (i) Oxygen (ii) Nitrogen **2.** Nitrogen makes most of the air. **3.** Main constituents of air are - (i) Nitrogen (ii) Oxygen (iii) Argon (iv) Carbon dioxide **4.** Carbon dioxide is essential for the survival of plants. **5.** Air is used in machines for digging.

B. Answer the following questions in not more than 40 words:

1. Major constituents of air :- (i) Nitrogen (787%) (ii) Oxygen (217%) (iii) Argon (0.97%) (iv) Carbon dioxide (0.037%) **2.** Air supports burning by the following activity - Take a small candle and light it. Fix the burning candle or the flat surface. Take a gas tumbler and cover the burning candle. While you cover the candle watch the flame continuously and record your observations when a burning candle is covered with the glass tumbler, initially the flame flickers and then dies down. It shows that oxygen is essential for combustion. **3.** Uses of air are (i) For drying agriculture products air is needed. (ii) Clothes become dry due to evaporation. (iii) Moving air helps in winnowing and helps in separating grains from husk. **4.** Take a glass through, fill it with

water. Take an empty glass tumbler. Invert the tumbler into the water of the through. You will see that water will not go into the tumbler. Now tight the tumbler to one side. You will see that area bubbles start coming out of the tumbler and water starts entering the tumbler. **5.** In the exchange of gases in atmosphere plants and animals help each other because plants absorbs carbon dioxide where as humans units it but plants unit oxygen whereas humans absorb it. **6.** Animals living in water in deep soil respire because oxygen is present in the air surrounding them.

C. Answer the following questions in not more than 60 words :

1. Atmosphere is a combination of many gases in different layer. Our earth is surrounded by a their layer of air. This layer extends up to many kilometres above the surface of the earth. **2.** An empty gas is not empty because it contain space. Air occupies space. With the help of balloons this can be shown through an activity. **3.** Plants and animals depend on one another for oxygen and carbon dioxide because plants releases oxygen and take carbon dioxide but humans release carbon dioxide and take oxygen.

Chapter 16 Garbage In, Garbage Out

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (b) **4.** (a) **5.** (b) **6.** (a) **7.** (b)

B. Fill in the blanks :

1. waste **2.** decomposing **3.** compost **4.** organic

C. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. The wastes which can be decomposed by micro-organisms are called biodegradable wastes. E.g : pieces of wood, leaves paper, animal bones etc. **2.** The wastes which can not be decomposed by micro-organisms are called non-biodegrable wastes. E.g : paints, varnishes etc. **3.** The environment includes the physical surroundings of a person. Damage caused to the environment is called pollution. **4.** Harms caused by flies and mosquitoes are : (i) Malaria is transmitted by mosquito bite. (ii) Disease are separated by flies. **5.** Some materials needs to store temporarily to avoid their later harms.

B. Answer the following questions in not more than 40 words :

1. Biodegradable waste is different from Non Biodegradable waste because biodegradable waste can be decomposed by micro- organisms. E.g. of biodegradable waste : peel of fruits and vegetables. E.g. of Non biodegradable waste : polythene bags. **2.** The recycling of materials results in less pollution of the environment. It is necessary to produce less pollution. **3.** Some steps taken to make environment free from pollution : (i) keep the dustbin closed. (ii) Flush the toilet. (iii) Keep the door of toilet closed. (iv) Keep the surrounding neat and clean. **4.** Principle of 3R's is reduce, recycle reuse. Their advantage is to reduce pollution.

3. Answer the following questions in not more than 60 words :

1. Garbage disposed is not the responsibility of government. It is the responsibility of every person. Government can help in it. **2.** It is possible to reduce problems relating to the disposal of garbage by following established rules for garbage disposing. There are many methods of disposal- **(a)** Open dumping **(b)** Sanitary landfill **(c)** Incineration **(d)** compositing **(e)** Recycling and reusing

Book 7

Chapter 1 Nutrition in Plants

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (b) **3.** (d) **4.** (b)

B. Fill in the blanks :

1. photosynthesis **2.** meterophic **3.** oxygen **4.** parasite **5.** stomata

C. Name the following :

1. rhizobium **2.** utricularia **3.** saprotrophic

D. Write True or False :

1. F **2.** T **3**. F **4.** T

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Pitcher plant has both autophic as well as heterophic mode of nutrition. **2.** Green pigment that helps the leaves to capture sunlight is chlorophyle. **3.** A lichen is actually composed of two distinct organism alae and fungus, living and working together. **4.** Stored form of carbohydrates in plants is starch. **5.** In the rainy season, loaf of bread turn blue, brown or greenish. **6.** Chemical equation presenting photosynthesis- $Co_2 + H_2O \rightarrow strach + oxygen$ **7.** Nutrients are replenishment in the soil by following activities (i) keeping land follow (ii) crop rotation (iii) adding fertilizer.

B. Answer the following questions in not more than 40 words:

1. Pitcher plant feeds on insects though it is green because it is a insectivorous plant. **2.** Organisms having heterophic mode of nutrition are called heterotrophs. **3.** The mode of nutrition in which an organisms make its own food from simple substances is called autotrophic nutrition. Eg. green food. **4.** Organisms need to take food because it is necessary for theirs growth, maintenance of body and reproduction.

C. Answer the following questions in not more than 60 words:

1. Plants absorb water and minerals by the roots and transport to leaves. The same process is applied by plants for the soil. **2.** Different modes of nutrition are- Autotrophic mode of nutrition :- It means self nutrition. Heterotrophic mode of nutrition :- It is obtained from others. **3.** Insectivorous plants are abnormal plants because despite being green, they are unable to synthesize their food. **4.** Do yourself **5.** Symbiosis means the mutual association in which two different types of organisms live and work together. E.g : Lichens symbiotic relationship between leguminious plants and rhizobium bacteria. **6.** Leaves are called the food factories of plants because the synthesis of food in plants occur in leaves. Therefore, the raw material must reach there.

Think And Answer :- The roots suck water and minerals present in the soil. Water and minerals reach the leaves through the stem and trunk to the leaves.

HOTS

In the absence of photosynthesis there is no food would be available made by plants. Living beings fulfil their need of food by killing other animals and this world would not be as it is today.

Chapter 2 Nutrition in Animals

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (c) **2.** (a) **3.** (c) **4.** (b) **5.** (b) **6** (a)

B. Fill in the blanks :

1. ingestion **2.** digestion **3.** digestion **4.** starch **5.** nutrients

C. Name the following :

1. (i) incisors **(ii)** canines **(iii)** peremolars **(iv)** molar **2. (i)** liver **(ii)** pancreas **3.** gastric acid

D. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Two components of digestive systems are - liver, pancreas. **2.** Ingestion is the process by which food is taken. **3.** Two mouth glands are pharynx and esophagus. **4.** Taste buds help us to taste food. **5.** Liver is the largest gland in the human body.

B. Answer the following questions in not more than 40 words:

1. Humans have four types of teeth, each with a specific size, shape and function. These are - (i) Incisors :- They are used to cut food. (ii) Canines :- They are used to tear food. (iii) Premolars :- They are used to grind and mash food. (iv) Molars :- They are used for chewing. **2.** Main steps of digestion in humans are : (i) We take in food through the mouth. (ii) Teeth chew it and tongue pushes the chewed food into a short muscular tube. (iii) Food is then pushed down into the stomach. (iv) In stomach, digestion takes place. **3.** Digestive system made up of many different parts. These parts are essential for digestion. **4.** Function of the tongue - **(i)** The tongue help in mixing food with salvia. (ii) The tongue pushes the chewed food into a short muscular tube called the pharynx.

C. Answer the following questions in not more than 60 words:

1. Between six and ten months of age, most infants begin to get their milk teeth are temporary teeth. Permanent teeth are taken the place of milk teeth. **2.** Amoeba traps food article in a food vacuole. Here, digestive juices are secreted into the food vacuole. They act on the food and break it down into simpler substances. Amoeba feeds on some microscopic organisms. When it senses food , it pushes out finger- like projections. **3.** Villi are figure like outgrowths present on the inner walls of the small intestine. They number in thousands. The main function of villi is to speed up the absorption of the digested food in small intestine by increased surface area for absorption of the digested food. **4.** The stomach is a large sack-like organ that churns the food and bathes it in a very strong acid. Food in the stomach that is partly digested and mixed with stomach acids is called enzyme. **5.** Alimentary canal is the whole passage along which food passes through the body from mouth to anus during digestion.

Chapter 3 Fibre to Fabric

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (c) **4.** (a) **5.** (c)

B. Fill in the blanks :

1. fleece **2.** kashmiri goat **3.** scourcing **4.** silk worm **5.** cocoon

C. Name the following :

1. angora goat, yak **2.** marwari, patanwadi **3.** tasser, eri **4.** molar **5.** mulberry silk **6.** bacillus anthracis

D. Write True or False :

1. F **2.** F **3.** T

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Sericulture is the rearing of silkworms for the production of raw silk. **2.** The process of washing the fleece of sheep to remove dust, dirt, sweat and grease is called scourcing. **3.** In

winters, sheep are kept indoors are fed on leaves, grain and dry fooder. **4.** Most common silk moth is mulberry silk moth. **5.** Angora goat produces angore wool.

B. Answer the following questions in not more than 40 words:

1. The process of taking out threads from the cocoon for use as silk is called reeling the silk. Reeling is done in special machines. **2.** Sequence of steps in processing of wool. (i) shearing :- Process of removing hair. (ii) Scouring :- Process of washing the fleece of sheep. (iii) Sorting :- process of separating the long fine quality fleece. (iv) Combing :- Process of removing the burs. (v) Dying :- The fibres obtained after combing is dyed in various colours. (vi) Spinning :- Process of judging the quality of wool. **3.** Four wool yielding animals are : (i) Kashmiri goat :- Pashmina wool is got. (ii) Angora goat :- Angore wool is obtained. (iii) Yak :- Soft wool is obtained. (iv) Llama and Alapca :- Also yield wool. **4.** Wool yielding animals have a thick coat of hair because wool is obtained from their hairs. **5.** Four varieties of silk are - (i) Mulberry (ii) Tussar (iii) Muga (iv) Eri

C. Answer the following questions in not more than 60 words:

1. Life history of silk moth is- (i) Eggs on mulberry leaves. (ii) A tiny black caterpillar, hatches out of its eggs. (iii) The caterpillar eats mulberry leaves and grows bigger and bigger. It goes through 4 months. (iv) The caterpillar spins a cocoon of silk threads around itself. (v) Inside the cocoon, the caterpillar changes into a pupa. (vi) The pupa changes into a moth. The moth comes out of the cocoon. (vii) The adults moths mates with each other. **2.** Rearing is the raising livestock like goat, cows, sheep etc. for commercial purpose by taking them out in herbs for gazing, feeding them on a mixture of pulses and minerals for butter growth and yield of produce like meat, milk,wool. **3.** Processing fibres into wool contains following steps: (i) Shearing (ii) Scouring (iii) Sorting (iv) Combing (v) Dying (vi) Spinning

Chapter 4 Heat

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (a) **3.** (a) **4.** (c)

B. Fill in the blanks :

1. thermometer **2.** conductor **3.** temperature **4.** insulator **5.** solid

D. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Range of laboratory thermometer is from 10°c to 100°c. **2.** Temperature is measured by a device called thermometer. **3.** Kink in clinical thermometer prevent mercury from being fallen back on of its own. **4.** Laboratory thermometer does not contain mercury as one of its components. **5.** Radiation is the process by which heat of sun is able to reach us.

B. Answer the following questions in not more than 40 words:

1. In places of hot climate, it is advised that the outer walls of houses should be painted white because light coloured objects do not absorb heat. **2.** During winter two thin sweaters keep us warmer than wearing just one thick sweater because it keep us warmer in two thin sweaters air is trapped. **3.** Heat is transferred in air through convection. The smoke moves from land towards sea. **4.** Conduction is the process of heat transfer among solids. The tiny particles of solids, transmit heat to the adjoining particles through their vibratory motion. **5.** Heat flows from a region of higher temperature to a region of lower temperature. This flow of transfer of heat goes on till both region come to same temperature. **6.** We prefer to wear a pink shirt in summers because light coloured clothes do not absorb heat.

C. Answer the following questions in not more than 60 words:

1. Conductors are those materials that allow heat to be conducted easily through them. E.g : Copper, iron etc. Insulators are those materials that do not allow heat to be conducted through them. E.g : Wood, plastic etc. **2.** Two similarities in clinical thermometer and laboratory thermometers are - (i) Both type of thermometer use calibrated glass tubes with a passage inside, along the length of tube for mercury expansion.(ii) They have glass tube with a closed end on one side. Difference in clinical thermometer and laboratory thermometer (i) A clinical thermometer is used for measuring the temperature of human body. It reads temperature from 35°C to 42°C (ii) A laboratory thermometer is used for measuring the temperature of other thing the human body. Its capacity of temperature reading is from -10°C to 40°C.

HOTS

Clinical thermometer cannot be used to measure the temperature of any other object other from human body because it is designed to measure the temperature of human body only and it has the range from 35°C to 42°C.

Value Base Question

It happens because it is heavier than the heated water.

Chapter 5 Acids bases and salts

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. carbon dioxide **2.** neuturalization **3.** colourless , deep pink colour **4.** sodium hydrogen carbonate **5.** zinc carbonate

C. Write True or False :

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

D. Name the following:

1. china rose, turmeric paste **2.** phenolphthanlein **3.** acetic acid, hydrochloric acid **4.** sodium hydrogen carbonate, zinc carbonate

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Weak acids are natural acids and organic acids. **2.** The chemical nature of a compound that turns blur litmus and red is acid. **3.** It forms a milky solution $Ca(OH)_2$ (in solution) $CO_2 >> CaCO_3$(precipitate) $+H_2O$ **4.** Some fruits like orange taste sour because they are acetic in nature. **5.** Lactic acid is found in curd.

B. Answer the following questions in not more than 40 words:

1. It all depends on how much hydrogen atoms the acid has **2.** Factory waste is neutralized before disposing it into the water bodies because it contains acid which can harm aquatic life. **3.** Blue litmus paper is dipped in a solution. The nature of the solution is base if it remains blue. **4.** The materials which indicate whether the substance is an acid or base are called indicators. Two type of indicates are : (i) Litmus paper (ii) China rose indicator **5.** Substances that are neither acidic nor basic in nature are called neutral substances.

C. Answer the following questions in not more than 60 words:

1. Acidic rain is a rain consisting of water droplets that are unusually acidic because of atmospheric pollution. It is harmful because - (i) Acid rain makes water bodies like pounds, lakes and rivers acidic due to which fish and other aquatic animals get killed.(ii) Acid rain makes the soil acidic and makes the soil unfit for cultivation. **2.** When an ant bites, calamine solution is applied on the skin because the effect of the sting can be neutralised by rubbing some moist

solution of a basic substance. **3.** Litmus is obtained from lichens. They are used to check the solution whether it is acidic or base. **4.** Difference between acids and base-

Acids	Bases
Acids are sour in taste.	Bases are bitter in taste and soapy to touch.
The chemical nature of such substances is acidic.	The nature of such substance is said to be basic.
Acid turns blue litmus red.	Bases turn red litmus blue.

5. Farmers need to treat the soil of their field with slaked lime before souring the seed to neutralized acidic soil.

HOTS

When a stain of turmeric washed with soap turned red because it has reddish- brown in basic medium.

Chapter 6 Physical Change And Chemical Change

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. chemical change **2.** physical, chemical **3.** chemical, physical **4.** Rusting **5.** crystallisation

C. Complete the following chemical reactions :

1. magnesium hydroxide solution + hydrogen **2.** Iron Oxide + Iron Hydroxide **3.** NaCl + H_2O **4.** Iron sulphate + copper

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Chemical name of baking soda is sodium hydrogen carbonate. **2.** Mixture of iron oxide and iron hydrogen is called rust. **3.** Photosynthesis is chemical change. **4.** Physical properties of a substance are shape, size, colour and state of a substance. **5.** Crystallization is a physical change. **6.** In a chemical change the original substance give rise to one or more new substances that have entirely different composition and properties compared to those of the original substances.

B. Answer the following questions in not more than 40 words:

1. Setting of curd is considered as chemical change because curd is a new substance formed from milk. It has different taste, form, properties and can not be converted back to milk. **2.** Two examples of physical change are - (i) Melting of wax (ii) Dissolving sugar in water. **3.** As magnesium oxide is a metal oxide. It dissolves in water to produce base. $Mg + H_2O \rightarrow Mg(OH)_2 + H_2$ **4.** Salt is extracted from sea water by the evaporation. **5.** The process of depositing a thin layer of zinc metal on iron objects is called galvanization.

C. Answer the following questions in not more than 60 words:

1. Burning of wood and cutting it into small pieces are two different types of changes as burning of wood is a chemical process in which new substance along with heat are produces where as cutting of wood into small pieces is merely a physical change. **2.** Physical Change :- (i) The physical composition of a substance does not change. (ii) Most changes are reversible. Eg. Ice → Water → Steam , Chemical change : (i) The chemical composition of a substance is change. (ii) Most changes are irreversible. Eg. Paper → Ashes **3.** When iron metal is placed in copper sulphate solution, iron displaces copper from the sulphate solution leading to $CuSo_4 + Fe \rightarrow FeSo_4 + Cu$

Chapter 7 Weather Climate And Adaptations of Animals in Climate

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (c) **3.** (c) **4.** (b) **5.** (c)

B. Fill in the blanks :

1. humidity **2.** after noon, early morning **3.** poles, northern hemisphere **4.** streamlined, webs **5.** atmosphere

C. Name the following:

1. Rain gauge **2.** Maximum and Minimum Thermometer **3.** Polar Bear, penguin **4.** Sloth, Camouflage **5.** Three-toed sloth, Green Algae

D. Write True or False :

1. T **2.** T **3.** F **4.** T

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Humidity is the measure of the moisture in air. **2.** Weather means the condition of atmosphere at a particular place and time is called weather. **3.** Weather Department gives information about weather. The scientist called meteorologist provide information of weather. **4.** Names of some countries where tropical rain forest are present - India, Africa etc.

B. Answer the following questions in not more than 40 words:

1. Two function of the large ears of the elephant. (i) The ears of elephant help to hear even very soft sound. (ii) When the temperature rises, the elephant flap their ears and use them as fans to cool themselves in the hot and humid climate. **2.** Characteristics of tropical region are- (i) Temperature in the tropics rarely exceed 35°C, a day time maximum of 32°c is more common. (ii) At night the abundant cloud cover restricts radiation loss. (iii) The two rainy season merge into one. **3.** Polar bear have white fur to protect themselves form cold. **4.** Many animals like birds, insects, whales and fishes move from one place, to protect themselves from severe cold climate condition . This is called migration. E.g: Siberian crane.

C. Answer the following questions in not more than 60 words:

1. Characteristics of the climate of polar region are- (i) They are perpetually covered by snow and ice through out the year. (ii) In these high latitudes parts of the world, the sun is never high enough in the sky. (iii) Temperature can fall to extremely low values. (iv) The lowest ever temperature occurred in Antarctica. **2.** Adaptation is the process by which animals and plants adjust or adapt themselves to suit their habitat. (i) Adaptation in tropical rainforest. (ii) Adaption in polar regions **3.** Features of tropical regions- (i) Intense composition for food and shelter. (iii) There is abundant rainfall. (iii) The seasons so far as they do exist are distinguished not as warm and cold periods but by variation of rainfall and cloudiness. **4.** An elephant living in tropical rain forest adapt itself by following features:- (i) The elephant has a strong sense of smell because it uses its trunk as a nose. (ii) It uses its long trunk to pick up food and put into its mouth. (iii) It uses its trunk for drinking water. (iv) It uses its trunk for templet calls, pulling down branches of tree to obtain leaves as food. (v) It has big and long pointed teeth called tusks. (vi) It has large ears. **5.** Adaptation of polar bear is polar climatic region- (i) White fur to escape predator. (ii) Strong sense of smell to locate and catch prey. (iii) Thick layer of fat to keep it warm in cold conditions. (iv) Wide and large paws for swimming and walking.

Chapter 8 Winds, Storms And Cyclones

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (c) **2.** (c) **3.** (d) **4.** (c)

B. Fill in the blanks :

1. air **2.** moist **3.** increased **4.** high low **5.** expands

C. Write True or False :

1. F **2.** T **3.** T **4.** T

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Indian Metreological centre is now using advanced technology to predict cyclone. **2.** Anemometer helps to measure the speed of wind. **3.** The winds are formed due to unequal heating of the earth. **4.** Air is moved due to air pressure. **5.** Factors that contribute formation of a cyclone. (i) The sun heats the surface of ocean water. (ii) Warm and moist air rises high up and water vapour condenses to form clouds. (iii) The released heat warms the air all around. (iv) The chain of events ends with the formation of a very low pressure system.

B. Answer the following questions in not more than 40 words:

1. The winds flow from the oceans towards the land. **2.** Thunderstorms develop in hot, humid tropical areas like India very frequently. **3.** Cyclones caused destruction because it beings to move over the surface of ocean. **4.** The direction of air movement is from a region of high pressure to a region of low pressure. **5.** Poles are colder than the other regions of the earth because they are situated at 60° latitudes.

C. Answer the following questions in not more than 60 words:

1. Paper kept at the mouth of a bottle does not go inside if we blow air on the mouth of the bottle. **2.** One follow the certain precautions- (i) An effective cyclone forecasting and warning service must be established. (ii) Rapid communication of warming to the concerned government agencies. (iii) Government vehicles should be kept ready to evaluate people likely to be affected by cyclone. **3.** The formation of a cyclone is a very complex process. Factors like wind, speed, wind direction, temperature and humidity contribute to the development of cyclones. **4.** Air pressure affects the direction of wind.

Chapter 9 Soil

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. humus **2.** soil profile **3.** rock particles **4.** a- horizon **5.** soil-erosion

C. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Nutrients material formed by break down of plants and animal remains by the action of bacteria and other micro organisms is called humus. **2.** Soil profile is the vertical section through various layers of soil. These various layer are known as horizons. **3.** Best soil for growing plant is l loamy soil. **4.** Clayey soil is used to make pots, toys and statues.

B. Answer the following questions in not more than 40 words:

1. Weathering is the process of breaking down of rocks by the action of wind, water changes in temperature and penetrating roots of plants. **2.** After rain irrigation, water percolates through the porous soil and continues to move in the soil mass. Percolation rate of water varies in different soil types. **3.** Soil is known as the habitat of many organisms because it provides a medium for vegetation and shelter for many living organisms. **4.** Soil erosion can be prevented by following ways- (i) By planting more trees and grass (ii) Afforestation (iii) Preventing overgrazing (iv) Step farming in hilly areas (v) Construction of dams **5.** Causes of soil erosion - (i) Deforestation (ii) Overgrazing by large animal population (iii) Poor farming methods (iv) Forest fire.

C. Answer the following questions in not more than 60 words:

1. Moisture affects the fertility of soil because water or moisture is responsible for less irrigation.

2. Process of formation of soil : Weathering of rocks produces small particles of various materials. These include sand and clay. The relative amount of sand and clay depends upon the rock from which the particles were formed and the local terrain. **3.** Erosion of soil occur due to a forestation, overgrazing by large animal population. poor farming methods or leaving the land uncultivated for a large animal population. Forest prevent also led to soil erosion. Methods to prevent soil erosion are - (i) By planting more trees and grass. (ii) Afforestation (iii) Preventing overgrazing (iv)Step farming in hilly areas (v) Construction of dams **4.** Different layers in soil profile :- (i) A-Horizon or topsoil :- It is the top most layer of soil. It is dark in colour. (ii) B-Horizon or subsoil :- The layer of soil which is just below the top soil is known as subsoil. (iii) C-Horizon :- This is the lowest layer of soil profile. (iv) Rock Horizon or Bedrock :- This is the lowest end of the soil profile. **5.** Soil particle size is an important factor to determine the property of soil because sand particles are large that can not fit together. Clay particles are smaller and tightly packed together.

Chapter 11 Transport in Animals And Plants

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (a) **3.** (d) **4.** (a) **5.** (a)

B. Fill in the blanks :

1. plasma **2.** haemoglobin **3.** WBC **4.** platelets **5.** heart rate

C. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Xylem is water conducting tissue of plants. **2.** Excretion helps to remove excess of water from the plants through the leaves. **3.** Heart is known as the pumping organ of human body because it beats continuously to transport the blood. **4.** Main organs of excretory system are- (i) Large intestine (ii) Lungs (iii) Skin (iv) Kidneys **5.** Red blood cells are red in colour due to the presence of a red pigment called haemoglobin.

B. Answer the following questions in not more than 40 words:

1. Plants absorb water and mineral from soil through the root hair. **2.** Blood is a fluid that is pumped throughout the body. **3.** Circulatory system consists of blood, blood vessel and heart. **4.** The blood flows with pressure in the form of pulses. The pulses produced in a minute is called pulse rate. **5.** Excretion is the process of removing harmful waste products produced in the cells of living organisms.

C. Answer the following questions in not more than 60 words:

1. The heart is an organ which beats continuously to act as a pump for the transport of blood. It carries other substances with it. **2.** Excretion system consists of the following organs :- (i) Two kidneys (ii) Two weters (iii) Urinary bladder (iv) Urethrae : The waste products, (dissolved in water) are removed from the kidney as yellowish liquid called urine. **3.** Blood is the main transport system of body because it transport various material together from the circulatory system. **4.** Three components of circulatory system in humans are - (i) Blood (ii) Blood vessel (iii) Heart

Chapter 12 Reproduction In Plants

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. stamen **2.** asexual **3.** by fragmentation only **4.** sepals spetals **5.** reproduction

C. Write True or False :

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

D. Name the following :

1. Pollination by water, pollination by insects **2.** Xanthium, Urena **3. 4.** Bread mould, fungi **5.** Wheat, rice

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Production of new individuals from the vegetative part of parent is called reproduction. **2.** It is a type of a asexual reproduction bodies in which new plants are produced from roots, stems, leaves and buds. Since, The growing of a new plant using the vegetative plant parts such as stem root or leaf. **3.** The flowers are reproductive organs of a plant. **4.** If the flower has both male and female parts, it is known as unisexual flowers. **5.** Seeds are dispersed to prevent overcrowding of plants in area.

C. Answer the following questions in not more than 60 words:

1. A spore is a tiny, spherical structure with a thick wall developed in sporangium. Spore's function is to develop on the slender and erect structures called hyphae. **2.** Various modification developed by seeds in respect to their habitat for their suitable dispersal are- (i) Dispersal of seed's by wind (ii) Dispersal of seed's by water (iii) Dispersal of seeds by animals (iv) Dispersal of seeds by explosive mechanism. **3.** A flower may have either male or female reproductive parts. Such a flower is called unisexual flowers. A flower having male and female reproductive parts are called bisexual flowers. **4.** Do your self.

HOTS

Flowers are generally so colourful and fragrant to attract insects and animals which will help them to pollinate, carrying pollen from one flower plant to another.

Chapter 13 Motion and Time

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. speed **2.** m/sec **3.** bob **4.** distance time graph

C. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. The distance covered by a body in a unit time. **2.** Motion characterized by unequal displacement per unit time is known as Non uniform motion. **3.** Time intervals are measured by clocks and watches. **4.** Motion of pendulum are measured is periodic motion. **5.** The time taken by the bob of a pendulum to complete one oscillator is called the time period.

B. Answer the following questions in not more than 40 words:

1. Time period of pendulum - 1515 = 3sec **2.** Speed of car - 5km/hr, time = 3 hours. Distance travelled = speed time = 5 3 **3.** Distance = 240km, time taken by train = 6 hours speed= distance/time = 240/6 = 40km/hr **4.** Motion of a child on a see-saw is oscillatory motion because motion of the child on see-saw is not fixed it is oscillatory motion. **5.** The distance time graph is a line graph. A distance time graph shows how the distance travelled by a moving objects changes with time.

C. Answer the following questions in not more than 60 words:

1. Time taken by Priya = 20 minutes , speed of bicycle = 2m/sec, distance = speed × Time, speed = 2 ×60 m/sec distance = 120 × 2 = 240m **2.** While choosing a scale we should remember certain points these are - (i) We should choose suitable scales so as to represent the large value of 'Time' and 'Distance' conveniently on the small graph paper. **3.** Speed = 72km/hr, 1km = 1000km/hr, 1hour = 60 × 60 sec,

speed $= \frac{72 \times 72}{60 \times 60} = 20$ m/sec. **4.** Uniform motion is the motion chracterized by equal displacement per unit time. E.g: If a girl is covering equal distances in each second we can say that girl is cycling with a uniform rotation. Time = 1/2 hr, distance = speed × Time $= 60 \times \frac{1}{2} = 30$km **5.** Speed = 80km/hr, Time = 15 minutes, Time $= 15 \times \frac{1}{60}$ hr, Distance = speed× time $= 80 \times \frac{1}{4} = 20$km. **6.**

Initial reading of car odometre = 80323.0km, Final reading of car odometre = 80338.0, Initial time showed by the clock = 09.10 Am, Final time showed by the clock = 09:30Am Distance covered by car = (80338.0 - 80323)km = 15km Time taken by car = (9:30 - 9:10)Am = 20min, Speed of car in km/min = 15km/20min = 0.75 km/min, speed of car in km/h = 15 km/ 20min × 60 = 40km/hr. **7.** Speed = 10km/hr, Time = 3hr = 3hr, distance = 10 × 3 = 30km. **8.** Distance = 360km, Time = 6hr, Speed= $\frac{360}{6}$ =60km/hr **9.** Distance = 2.4 km, Speed = 2m/sec, Distance= 2.4×1000= 2400metre, Time $= \frac{2400}{2} = 1200$sec **10.** Time = 30sec, No of oscillations =6, Time period of pendulum $= \frac{30}{5} = 5$sec

Chapter 14 Electric Current And Its Effects

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. filament **2.** exceed circuit current **3.** element **4.** resistant **5.** magnet **6.** iron core

C. Write True or False :

1. T **2.** T **3.** F **4.** T **5.** F **6.** T **7.** F

D. Name the following :

1. Hans Christian Oersted **2.** Miniature circuit breakers

E. Define

1. Positive terminal of a cell is connected to the negative terminal of other cell. This cell is called battery. **2.** Effect of electricity is used to make electromagnets. **3.** Fuse is a part of an electric circuit which prevents too much current from flowing.

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. A battery is a source of electric current. **2.** When electronic current is passed through the wire, it become hot. **3.** Fuse is the safety device based on the heating effect of an electric current. **4.** Positive terminal is represented in the symbol of an electric cell -+**5.** Scientist who discovered magnetic effect of an electric current is Hans Christian Oersted. **6.** There is an electromagnet inside an electric bell. **7.** When an electric current flows through a wire, the wire becomes hot. This is called heating effect of electric current. **8.** When an electric current is switched on, a bulb glows battery through the wire and the bulb.

B. Answer the following questions in not more than 40 words:

1. A compass needle shows deflection when brought near a current carrying wire. A compass needle can attract the magnetic components, hence its presence can be detected. **2.** A electric current is used to make magnet because when it passes through a wire the current carrying wire behaves like a magnet. **3.** We can make a battery of two cells if one is positive and another is negative. **4.** When the switch is on, the circuit is said to be closed. When the switch is off, the circuit is said to be open. **5.** An electric fuse is a safety fuse which breaks the electric circuit if there is an excessive flow of current in the circuit. **6.** The effect of electricity is used to make electromagnets. **7.** It is not safe. **8.** Reasons for excessive currents in the electrical circuit. If any of the terminal if disconnected from the battery the circuit is broken. If a large amount of current is passed through an appliances.

C. Answer the following questions in not more than 60 words:

1. A fuse is a safety device which breaks the electric circuit if there is an excessive flow of current in the circuit. Hence fuse is used for safety measures. **2.** Electric bell works on the principle of magnetic effect of electric current. **3.** Do yourself. **4.** An electric heater is used for cooking or obtaining heat for any other purpose. It is based on the principle of heating effect of electric current. An electric heater does not glow like an electric bulb because the wire used in electric heater is element where as in a bulb it is filament. **5.** In the circuit, positive terminal of the cell is connected with positive terminal of the other cell and same is with the negative cell. This is not a correct connection. That is why bulb does not shown. **6.** Devices that make use of the heating effect of electric current are - (i) Light bulb (ii) Electric Heater (iii) Electric Iron **7.** When the switch is on position bulb does not glow. **8.** A compass needle gets deflected from its north-south position when the current is switched on through a wire because in the presence of electric current there will be magnetic effect and it causes this condition.

Chapter 15 Light

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (c) **2.** (d) **3.** (a) **4.** (a) **5.** (c)

B. Fill in the blanks :

1. divergence **2.** convex mirror **3.** seven **4.** concave lens **5.** concave mirrors

C. Write True or False :

1. T **2.** T **3.** F **4.** T

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Light travels in a straight line. **2.** Yes, a shiny surface can change the direction of the light. **3.** Yes, light get reflected from a plane mirror. **4.** The image that can be obtained on a screen is called real image. **5.** The image that can not be obtained on a screen is called virtual image.

B. Answer the following questions in not more than 20 words:

1. We can't see the flame of a candle through a bent pipe because light travels in a straight line. **2.** We should not try to overtake rather await if we see ambulance coming behind our vehicles. **3.** Change in direction of light from an object is called reflection of light. **4.** Characteristics of the image formed by a concave lens- (i) A concave lens always forms erect, virtual and smaller image than object. **5.** Different type of mirror are- (i) Plane mirror (ii) Spherical mirror (iii) Concave mirror (iv) Convex mirror

C. Answer the following questions in not more than 60 words:

1. While seeing an image of an object in the plane mirror, sides of an object are interchanged in an image formed. E.g: When someone looked her/his image in the mirror, he noticed that his right appears to be left and left appears to be right. **2.** Characteristics of an image formed by a

plane mirror - (i) The image is virtual and laterally inverted. (ii) The image is of same size as the object. (iii) The image formed is erect. **3.** Concave mirrors are used as side mirrors in scooters and cars. These mirrors form a powerful beam of light. The focus of a concave mirror is real because light rays actually pass through it. **4.** A spherical mirror whose reflecting surface is curved inwards is called 'concave mirror'. A spherical mirror whose reflecting surface is curved outwards is called convex mirror. **5.** A Newton disc is a disc with segments in rainbow colours.

Chapter 16 Water : A Precious Resource

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (c) **3.** (d) **4.** (a) **5.** (c)

B. Fill in the blanks :

1. moisture **2.** hand pump, tube well **3.** rain water harvesting **4.** water

C. Write True or False :

1. T **2.** F **3.** T **4.** F

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Water which flows over the earth's surface water. **2.** Rain is the main source of water on earth. **3.** Water table is the underground surface below which the ground is highly saturated with water. **4.** Ground water is reached by harvesting system.

B. Answer the following questions in not more than 40 words:

1. The process of collecting rainwater from roofs and street, corners and storing it for later use is called rain water harvesting. **2.** Water is precious natural resource without which life on earth is unimaginable. **3.** Water is found in the space between different soil layers and cracks in rocks located underground is called underground water. **4.** Streams are small surface water bodies which have less water than rivers available for use.

C. Answer the following questions in not more than 60 words:

1. We can conserve water by following measures - (i) We should avoid brushing teeth, washing hands or cleaning utensils with running water tap. (ii) We should collect rain water in drums and use it to water our plants. (iii) We should get leaking pipe lines and leaking water traps repaired. **2.** Water is very precious resource. It ways of prevention are- (i) Reuse of water (ii) Drip Irrigation (iii) Construction of Dams (iv) Rain water harvesting **3.** Water is considered as an important liquid for all human being because human beings use water for drinking, cooking food, bathing, washing clothes, gardening and for recreational purpose. **4.** Causes of water scarcity - (i) Increasing population (ii) Increasing demand of water for Irrigation (iii) Increase in industries (iv) Deforestation.

Chapter 17 Forests Products

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. humus **2.** canopy **3.** dependent **4.** rome **5.** the wild variety

C. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Forest provide us with many things we need. That is why they are important. **2.** Forests are important for animals because they live in forest and consume various things found in forests. **3.** The animals found in forests are tigers, lions, deer, bear etc. **4.** The crown of a tree is the branches leaves and reproductive structures extending from the trunk or main stems. **5.** The food of micro organisms is dead plants and animals.

B. Answer the following questions in not more than 40 words :

1. Photosynthesis is the process in which plants prepare their food in the presence of sun light. **2.** Decomposers convert dead plants and animals into humus. They increase soil fertility. **3.** Forest is a large area of land where a large number of tall tress, herbs and shrubs grow naturally. **4.** Forest officer recongnize the presence of some animal in the forest by examining the forest.

C. Answer the following questions in not more than 60 words :

1. Heavy rains in the forest do not cause flood because of soil present and water is absorbed by plants. **2.** Organism which feed on plants often get eaten by other organisms and so on eg. Grass → Insects → frog→ snake → eagle **3.** Deforestation causes change in the rainfall pattern. The area receives less rainfall causing drought condition. **4.** Forest is not just a home to plants and animals but it also provides other things to them. **5.** The micro-organisms which convert the dead plants and animals to humus are known as decomposers. They play an important role in the forest. E.g - Fungi grows on decaying fruits and vegetables and convert them into humus.

Chapter 18 Waste Water management

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. water treatment plant **2.** anaerobic **3.** poor-sanitation **4.** waste water treatment **5.** liquid

C. Write True or False :

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Water mixed with waste matter is known as waste water. **2.** Inorganic impurities are tea leaves, solid food remains, soft toys, cotton and sanitary towels. **3.** Organic impurities are human excreta. **4.** A skimmer removes the floatable solids like oil and grease. **5.** Chemicals like chlorine and ozone are used.

B. Answer the following questions in not more than 40 words:

1. Sludge is the end product of sewage treatment. It is decomposed by anaerobic bacteria to form biogas. **2.** Sewage is the wastewater carried away in sewers or drains. Under which system it is done, is called sewerage system. **3.** Due to open drain system, air is being polluted and many diseases like diarrhoea, cholera, jaundice, dysentery etc are developed. **4.** Untreated human excreta is a health hazard because this will result in poor sanitation. **5.** Sewage opened in rivers.

C. Answer the following questions in not more than 60 words:

1. It is advised to remove plastic bags from sewerage because unlike paper, plastic do not spoil in water rather it increases the level of water. **2.** The amount of potable water is going down because waste produced is increased day by day. **3.** It is necessary to store water treatment plant in society because it removes coarse solids and other large materials. **4.** Removal of harmful materials to enhance the purity of water is known as waste to enhance the purity of water is known as waste waster treatment. Waste water is passed through bar screens. Its impurities are removed.

Book 8

Chapter 1 Crop Production And Management

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (b) **3.** (a) **4.** (b) **5.** (c) **6.** (c) **7.** (a) **8.** (c)

B. Name the agriculture implements associated with the following agricultural tasks :

1. Wooden plough, Iron plough **2.** Khurpi, Uprooting **3.** Wooden leveller, Wooden plank attached to a tractor **4.** Funnel shaped tool, Seed drive **5.** Sickle harvester

C. Define the following :

1. Some kind of plants grown for food on a large scale are known as crop. **2.** The branch of science that deals with the study of cultivation of plants useful to human-beings is known as agriculture. **3.** The separation of grains from the chaff is known as threshing. **4.** Farmers having a small piece of land use method of winnowing to separate grains from chaff. **5.** Farmers use manures to replenish soil, this process is known as manuring. **6.** Weeding is the process of removing weeds from fields.

D. Fill in the blanks :

1. crop **2.** preparation **3.** float **4.** care, watering **5.** khairf **6.** mannure **7.** fertilizers **8.** rabi

E. Identify the following :

1. irrigation **2.** storage **3.** crop **4.** harvester **5.** gram **6.** winnowing **7.** storing water

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Storage of food is done to safe it from spoilage by moisture, insects, rat and micro organisms for a long time. **2.** Two source of irrigation are - (i) Spinkler system (ii) Chainpump **3.** Two common forms by which we add nutrients in soil - (i) Fertilizers (ii) Mannures **4.** Seed drill means sowing seeds at an appropriate depth. **5.** Planting of seeds of a crop in the soil is called sowing. **6.** We use a tractor driven cultivator to save time and labour. **7.** Disease are transmitted into plants through excessive use of fertilizers. **8.** Two common examples of agriculture crops are - (i) Kharif crops (ii) Rabi crops **9.** The branch of science that deals with the study of cultivation of plants useful to human beings is known as agriculture. **10.** Some kind of plants grown for food on a large scale are known as crops.

B. Answer the following questions in not more than 40 words :

1. The removal of crop from the field after its maturation is known as harvesting. The separation of grains form the chaff is known as threshing. **2.** Weeding is the process of removing undersirable weeds from the cultivated field. It is necessary for the proper growth of crop cultivated. **3.** Ploughs are being used since ancient times for the purpose of tilling soil. Hoe is a tool which is used to remove weeds from soil and to loosen soil. **4.** Agriculture practises are used to grow crops. They include (i) Preparation of soil (ii) Sowing (iii) Adding mannures (iv) Irrigation (iv) Weeding (vi) Harvesting (vii) Threshing (viii) Storage of crop **5.** Farmers having a small piece of land use method of winnowing to separate grains of chaff. **6.** Green revolution is a programme started in the 1960s to increase the agricultural technologies. **7.** Kharif season crops include rice, maize, soyabean, groundnut etc. **8.** Rabi crops include wheat, gram, pea, mustard etc.

C. Answer the following questions in not more than 60 words :

1. The preparation of soil is the first step of growing a crop. This includes methods like ploughing. **2.** The branch of science, which deals with the study of various breed of domesticated and their management for obtaining better products and services from them termed animal husbandry. It is useful because under it many animals are taken care off. **3.** Various safety measures used for storing the grains for longer time are - (i) Drying (ii) Maintaining storage

containers (iii) Chemical treatment (iv) Use of improved storage structure **4.** Undesirable plants that grow along with the crops are known as weeds. The methods used by farmers to remove weeds- (i) Weeds can be controlled using weddicied. This is sprayed in the fields. (ii) Tilling before sowing of crops helps in removing weeds. (iii) The mannual method of removing weeds is with the help of a Khurpi. **5.** Various activities come under agriculture particles are (i) Preparation of soil (ii) Sowing (iii) Adding Manures (iv) Irrigation (v) Weeding (vi) Harvesting (vii) Threshing (viii) Storage of crop **6.** Traditional tools used for sowing the seeds are funnel shaped tool. **7.** It is necessary to sow seeds at an appropriate depth and distance because it result in uniform growth and reduce overcrowding. **8.** Irrigation is the practice of supplying water to crops through canals, wells and water ways. Traditional methods of irrigation are - (i) Dhekli (ii) Chain pump (iii) Moat (Pulley system) (iv) Rahat (Lever system) Modern methods of irrigation are - (i) Spinkler system (ii) Drip system

Chapter 2 Microorganisms : Friend And Foe

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (a) **3.** (c) **4.** (b) **5.** (d) **6.** (c) **7.** (b) **8.** (b) **9.** (b)

B. Fill in the blanks :

1. penicillium notatum **2.** bacteria **3.** virus **4.** bacteria **5.** acetification **6.** carbonated water **7.** female anopheles mosquito **8.** female aedes mosquito **9.** virus **10.** diatoms

C. Name the scientist :

1. Louis Pasteur **2.** Louis Pasteur **3.** Flemming **4.** Louis Pasteur

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. The cosmopolitan micropic organisms called microorganisms. **2.** Virus is a micro organisms at the borderline between the living and non-living. **3.** Two important uses of fungi- (i) Yeast is a unicellular saprophytic fungus. (ii) The saprophytic fungi along with bacteria play a vital role in recycling of matter in nature. **4.** In dead or weaken form. **5.** Anthrax is caused by the bacteria Bacillus Anthracis. **6.** We can not find a place without microbes in nature. **7.** Fungi (yeast) is used in production of alcohol. **8.** Two food items prepared using yeast are :- (i) Bread (ii) Idlli

B. Answer the following questions in not more than 40 words :

1. Pseudopodia is a protozoa. Pseudopodia is for locomotion. **2.** Blue green algae helps in increasing soil fertility because they fix the atmosphere nitrogen. **3.** Mosquitos carry the parasite of malaria and dengu. **4.** The substance which are used to preserve food are called preservatives. **5.** Pasteurization is a process that kills bacteria in liquid food. **6.** Dry fruits and vegetables are sold in air tight packets so that they could not get spoiled. **7.** Causes of food poisoning are - (i) Having spoilt food (ii) Having harmful micro organisms in any of the way. **8.** Fermentation means conversion of a product into another with the help of yeast.

C. Answer the following questions in not more than 60 words :

1. Tuberculosis is a disease caused by bacteria. They are transmitted by entering in the body. (ii) Polio is caused by a virus. (iii) Malaria is caused by protozoa. It is transmitted by female anafeles mosquito. (iv) Typhoid is caused by bacteria. (v) Hepatitis B is caused by virus. (vi) Chicken Pox is caused by virus. **2.** Antibioties are the medicine produced by certain microorganisms to kill other disease causing microorganisms. (ii) They are manufactured from bacteria and fungi. (iii) They are useful to mankind as they kill certain disease. **3.** (i) Nitrogen fixation is done with the help of bacteria Phizobium and some other blue-green algae and increase the soil fertility. (ii) Bacteria and algae are able to fix nitrogen. (iii) Atmosphere nitrogen is converted into compounds of nitrogen to increase soil fertility. **4.** Salt, sugar, oil vinegar are used as preservatives. These could not allow bacteria to develop and preserves food for a long time. **5.**

Useful effects of microorganisms are - (i) They are used to increase soil fertility. (ii) They are used in wine making, backing, picking and other food making processes. Harmful effects of microorganisms are - (i) They cause disease in animals and plants. (ii) They lead to food poisoning. **6.** (i) Any preparation used as preventive inoculation to confer immunity against a specific disease agent as killed or weakened bacteria or virus. (ii) Polio, rota virus, MMR, chiken pox, hepatitis etc. (iii) The virus cow pox, used in vaccination obtained from pox vesicles of a cow or person. It came from a pox virus the cowpox virus vaccinia.

Chapter 3 Synthetic Fibers And Plastic

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (c) **2.** (b) **3.** (d) **4.** (d) **5.** (c) **6.** (a) **7.** (a)

B. Fill in the blanks :

1. polimerization **2.** glucose **3.** rayon **4.** acrylic **5.** thermosetting plastics

C. Write True or False :

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

D. Match the columns A and B.

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Natural fibers are obtained from plants and animals. **2.** Synthetic fibres are obtained by chemical processing of petrochemicals. **3.** All fibers whether natural or manufactured are polymers. **4.** Rayon is prepared in laboratories by recombining plant fibres. **5.** Raw material for synthetic fibres are chemicals or chemical processing of petrochemicals. **6.** Bakelite is used in making electrical switches because it is a poor conductor of electricity.

B. Answer the following questions in not more than 40 words :

1. Rayon is obtained from a natural source wood pulp., yet, it is a man-made fibre because it is prepared in laboratory using certain chemicals. **2.** Nylon is used for making articles. Four of them are as - (i) Socks (ii) Ropes (iii) Tents (iv) Tooth brush **3.** Over natural fibers polyesters are preferred to make dress materials because of the following reasons - (i) Most of the synthesis fibers are wrinkle resistant. (ii) Synthesis fibers are strong. (iii) They have great elasticity and so can be easily stretched. **4.** PET is polythene terephthalate used to make plastic drink bottles. It is used to make bottles, utensils, films, wires and many other useful products. **5.** Acrylic is like wood and is used to make sweaters and suit lengths. Its main use is to describe a clear, glass - like plastic known as poly metharcrycali. **6.** Synthetic fibres are preferred as clothing material because most of the synthetic fibers are wrinkle resistant.

C. Answer the following questions in not more than 60 words :

1. Properties of rayon are - (i) It is one of the most peculiar fabrics in commercial use today. (ii) It is used in a variety of textile applications. Uses of Rayon (i) It is used in a variety of textile application including shirts, skirts and appears in both woven and knitted forms. **2.** Three characteristics fibers are strong. (i) Synthetic fibers are strong. (ii) They are generally soft, because of which they are used to make a variety of clothes. (iii) Most of the synthetic fibers are wrinkle resistant. **3.** Three properties of plastic. (i) Plastic is non reactive i.e; it does not react with water and air. (ii) Plastic is light, strong and durable (iii) Plastics are cheaper than metals. **4.** Three disadvantage of synthetic fibers- (i) These fibers can cause several disease. (ii) Wearing clothes made by it are different to wear in summer. (iii) They are not environment friendly. **5.** Advantage of using synthetic fibers- (i) Most of the synthetic fibres are wrinkle resistant. (ii) They are strong. (iii) They have great elasticity.

Chapter 4 Metals And Non-Metals

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (d) **3.** (b) **4.** (d) **5.** (a) **6.** (d)

B. Match the following :

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

B. Fill in the blanks :

1. metal **2.** hydrogen **3.** more , less **4.** basic **5.** oxygen **6.** potassium permegnate **7.** blue, red **8.** sodium Benjoete

D. Complete the following chemical reactions.

1. $Zn(So_4)_2 + H_2$ **2.** $Cu(OH)_2 = CuCo_3$ **3.** Fe2Zo$_3$+H_2 **4.** H_2So_4 **5.**$CuCl_2 + H_2$

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. One of examples of metals is Iron. One of the examples of non-metals is Sulphur. **2.** Copper is the best conductor of heat. **3.** When metals reacts with acids, hydrogen gas is produced. **4.** The oxides of non-metals are when dissolved in water, they form acid. **5.** Due to the property of malleability, metals can be drawn into thin sheets. **6.** Phosphorus **7.** In displacement reactions, metals displaces less reactive metal from their compound in aqueous solution.

B. Answer the following questions in not more than 40 words :

1. When sulphur dioxide reacts with water we obtained sulfurous acid. Chemical reaction is - $So_2 + H_2O \rightarrow H_2So_3$ **2.** Copper can not displace zinc from zinc sulphate solution because copper is less reactive metal. **3.** Immersion rods for heating liquids are made up of metallic substance because these are god conductor of heat. **4.** When iron nails are dipped into water for a weak, the iron nail rust. This nail is exposed to both air and water. **5.** The blue colour fades as colourless magnesium sulfate solution from brown copper coats the surface of the magnesium.

C. Answer the following questions in not more than 60 words :

1. Copper is coated with tin. Tin a less active metal, provides mechanical cover to other metals and protects them from rusting. **2.**$Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ **3.** Metals are used in making aeroplanes, bridges and satellite because pure metals are superconductors and they are enough strong to bear heavy loads. **4.** When ash of magnesium is dissolved in water, magnesium hydroxide is formed $MgO + H_2O \rightarrow Mg(OH)_2$ It is basic in nature. The oxides of metals are basic is nature therefore, their aqueous solution turn red litmus blue. **5.** (a) Sodium metal is very reactive. It reacts vigorously with air and water and a lot of heat is generated . So it is kept in kerosene. (b) Phosphorous **6.** (a) $SO_2 + H_2O \rightarrow H_2SO_3$ (Sulphurous acid) (b) The problem with the circuit is the coal piece which is a bad conductor of electricity. (c) Copper also rusts so this greenish deposits on the surface of copper vessels in the copper rust. The green material is a 1:1 mole mixture of $Cu(OH)_2$ (the hydroxide) and CuCo_3 (the carbonate)

$2Cu(s) + H_2(g) + CO_2 + O_2 \rightarrow Cu(OH)_2 + CuCO_3(s)$

Chapter 5 Coal And Petroleum

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (iii) **2.** (i) **3.** (iv) **4.** (i) **5.** (iii)

B. Fill in the blanks :

1. nonrenewable **2.** fossil fuels **3.** carbon **4.** incomplete decays **5.** fractional

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Natural resources supply energy for automobiles and power plants. **2.** Products obtained by processing of coal are - (i) Black coal dust (ii) Carbon **3.** Constituents of natural gas are - (i) Coal (ii) Petroleum **4.** A natural resource that is not an endless supply as air, solar energy etc. **5.** Fossil fuels are exhaustible natural resources **6.** Coal, petroleum and natural gas are fossil fuels. **7.** We can obtain the coal gas by mining coal.

B. Answer the following questions in not more than 40 words :

1. Constituents of petroleum are - (i) Dead organisms (ii) Micro organisms **2.** Examples of exhaustible natural resources - (i) coal (ii) Petroleum (iii) Natural gas. Examples of inexhaustible natural resources - (i) Sun light (ii) Air (iii) Water **3.** Petroleum was formed from dead organisms that got buried in the sea millions of years ago. **4.** Refining of petroleum is puring it. It is carried out in refineries. **5.** Two advantages of CNG as fuel - (i) They can be burnt directly. (ii) They can be transported easily through pipelines. **6.** Bombay High Basin, Gujarat, Andhara Pradesh, Tamil Nadu, Assam and Tripura. **7.** Four uses of petro chemicals- (i) Bitumen, a petroleum product used for surfacing roads. (ii) Diesel is used as fuel. (iii) Paraffin wax is used to manufacturing candles and waxed papers. (iv) Gaseous petroleum is used as fuel and in manufactured of products such as carbon black. **8.** Oil is collected out of ground. (i) Oil founded in the ocean and saltwater seas. (ii) Natural gas is found on the top of oil pool. (iii) It forms along with oil.

C. Answer the following questions in not more than 60 words :

1. Petroleum is known as black gold because it is important and as precious as gold. **2.** Coal is a fossil fuel because it is non renewable resource that supply energy. **3.** The advantages of using compressed natural gas (CNG) and liquified petroleum gas LPG as fuels are : (i) They can be burnt directly. (ii) They can be transported easily through pipelines. (iii) They are clean fuels and do not give smoke when burnt. (iv) They give a lot of heat energy when burnt. **4.** Coal is removed by earth by strip by strip mining because this technique is cost effective. If the coal is deeper, underground mines are used instead of strip mining. **5.** Fossils fuels can not be prepared in laboratory because they are formed in earth's crust over hundreds of million of years. **6.** Diagram copy from book page no. 71. **7.** Various constituents of petroleum -

	Constituents	**Their use**
1.	Gaseous petroleum	Used as fuel and in manufacture things
2.	Gasoline	Used as fuel and in dry cleaning
3.	kerosene oil	Used in lamp and stoves at home.
4.	Diesel	Used as fuel for diesel oil.

8. Natural gas forms along with oil because it is less dense, it most often is found on top of oil pools. Natural gas is valuable because it burns cleanly and can be transported easily in underground pipelines. Natural gas is used in many ways such as for heating homes and cooking food.

Chapter 6 Combustion And Fuel

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (b) **3.** (b) **4.** (b) **5.** (a) **6.** (c)

B. Fill in the blanks :

1. ignition temperature **2.** water **3.** low **4.** LPG **5.** carbon mono oxide **6.** pollution

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Petrol and LPG are used for running automobiles. **2.** An oxidation reaction in which a fuel burns to provide energy as heat and light. **3.** Candles burn with a flame but coal does dot burns with a flame also coal is a carbon product and candle is made from wax. **4.** Combustible fuels are

those that produce energy in the from of heat and light. **5.** Oxygen gas is essential for combustion. **6.** The composition of match head contained a mixture of antimony sulfide, potassium chlorate , starch and gum. **7.** LPG is a liquid fuel which is used in homes. **8.** Carbon monooxide is the poisonous gas is produced due to incomple combustion of a fuel.

B. Answer the following questions in not more than 40 words:

1. Food is regarded as a fuel for our body because digestion of food is oxidation reactions that may be classified as slow combustion. **2.** Kerosene will catch fire first. **3.** Substances which have very low ignition temperature and can easily catch fire with a flame are called inflammable substances. **4.** When the clothes of a person catch fire the to put out the fire blanket should be used. **5.** Water can control fire occurred with the materials like wood, paper etc. **6.** CO_2 is able to control fire because it is heavier than air. **7.** Explosion is the type of combustion that occurs at an rapid rate with evolution of heat and light and a loud sound. **8.** A gold smith uses outermost zone of a flame for meeting gold and silver because it is moderately hot part of a flame.

C. Answer the following questions in not more than 60 words:

1. This is due to the reason that the heat given by the flame is the quickly transferred from the paper cup to the water. As a result the temperature if the paper does not reach the ignition temperature and hence is not burned. **2.** Three zones of flame are (i) Outermost zone - Combustion of fuel takes palace and the colour of the flame is blue. It is the hottest part of the flame. (ii) Middle zone :- Colour of the flame is yellow and is moderately hot part of flame. (iii) Inner zone :- In the inner zone there are unburnt vapours of the fuel and the colour is black and is least hot part. **3.** Matchstick starts burning on rubbing it on the side of the match box because the head of the matchstick is applied with antimony trisulphide and potassium chlorate. The rubbing surface has powered glass and a little red phosphores and this reacts with the head of the matchstick and it starts burning.

Chapter 7 Conversation of Plants And Animals

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (b) **3.** (a) **4.** (a) **5.** (c) **6.** (d)

B. Fill in the blanks :

1. deforestation **2.** extinction **3.** reforestation **4.** IUCN, BSI **5.** National Wild Action Plan

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Deforestation is the indiscriminate cutting of forests. **2.** Biodiversity refers to the number and variety of life forms such as plants, animals and micro organisms in an area. **3.** Difference between flora and fauna - Flora - It refers to all living plants in a particular area. Fauna - It refers to all animals living in a particular area. **4.** Animals and plants exist in a variety. This variety is known as species. **5.** The Red Book keeps the record of endangered animals and plants. Deforestation means the discriminate cutting of plants. Reforestation means reestablishment of plants. **7.** Two natural causes of deforestation: (i) Forests are cleared for accommodating expanding urban areas and for fulfilling their ever - increasing requirement. (ii) Trees are cut down to be used for firewood.

B. Answer the following questions in not more than 40 words :

1. Four biosphere reserves present in India are - (i) Dibru Saikhowa (ii) Nilgiri (iii) Manas (iv) Pachmarhi **2.** Species found only in a particular habitat are known as endemic species. E.g: White elephant . **3.** Zoo : It is a facility in which animals are kept for public exhibition. Wild life Sanctuary : It is an area within animals are protected from possible dangers such as hunting. **4.** The species of plant and animals that are on the verge of extinction are known as endangered species. E.g: Asiatic lions **5.** Birds fly to far away areas because of climate changes. **6.** Marine

Protected Areas, Transboundary Protected Areas, Yellow Stone National Park etc. **7.** (i) Hunting (ii) Unfavourable condition **8.** Due to forecasting floods are caused because when forest are cut down, the regulation of flow of water is disrupted.

C. Answer the following questions in not more than 60 words :

1. We need forests because they provide us various valuable things . Three reasons are - (i) Trees provides us fruits, leaves paper etc. (ii) Soil is made to fertile. (iii) It is the habitat of many animals. **2.** Conversation of forests and wild life sanctuary is necessary to provide habitat to wild animals and to protect them. **3.** Various purpose for which tress are cut- (i) Trees are cut down to use fire wood or turned into charcoal. (ii) Trees are cut down to use for making papers. **4.** Bori Sanctuary, Pachmarhi Sanctuary and Satpura National Park. **5.** Paper should be saved because it takes around seventeen full grown trees to make to one of paper. (i) Trees as we know are important to maintain a balance of nature so paper should be saved. (ii)In order to save trees and prevent the impact of their coss. (iii) Paper can be recycled. **6.** To conserve forests - (i) Hunting should be prevented. (ii) Plantation should be done. (iii) Cultivation should be prohibited. **7.** Deforestation is a harmful activity because under it we go on cutting trees the habitat of an animal is disturbed and the top layer of the soil is exposed. Deforestation is a harmful activity in this regard reasons are - (i) Soil erosion (ii) Loss of biodiversity (iii) Disruption of water cycle. **8.** Deforestation causes drought because when forests are cut down regulation of flow of water is disrupted which leads to alternating of flood and then drought.

Chapter 8 Cell Structure and Function

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (c) **2.** (a) **3.** (c) **4.** (c) **5.** (d) **6.** (b) **7.** (c) **8.** (a) **9.** (c) **10.** (d)

B. Fill in the blanks :

1. cell **2.** amoeba, spindrical **3.** mycoplasma gallisepticum **4.** Chlorella **5.** membrane **6.** epidermis **7.** mitochondria **8.** epidermis

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Cell membrane is the outermost layer of animal cell. **2.** Nerve cells **3.** Cells could not be observed before 17th century because of their small size also the lens of microscope were not electronic as today. **4.** Cell is the basic structural and functional unit of all living organisms. **5.** Vacuoles are the smallest in size. **6.** Thiomargarita Namibienses **7.** Golgi bodies are jelly like structures.

B. Answer the following questions in not more than 40 words :

1. Mitochondria are organelles where energy is released from breaking down food into corbon-di-oxide and water. **2.** It is so because cells are colourless. It is known as dyes. Trypen blue is a stain used for this purpose. **3.** Four cell organelles found in the cell cytoplasm are - (i) Mitochondria (ii) Ribosomes (iii) Golgi bodies (iv) Vesicles **4.** Cell is called the basic unit of living organisms because these structural units build together to from all living organisms. **5.** Function of cell membrane is - This is the protective layer and regulates interactions between the cell and the environment. **6.** The function of a nerve cel is to transmit messages to the brain and also to take away message from the brain to the receptor organs. **7.** Basic components of a cell are - (i) cell wall (ii) Cell membrane (iii) cytoplasm (iv) Nucleus **8.** Plant cell have cell wall because it allows water and dissolved materials to pass through it.

C. Answer the following questions in not more than 60 words :

1. Chloroplasts are found only in plant cell because of chlorophyll. **2.** (a) It is the organ cells where energy is released from breaking down food into corbon-di-oxide and water. (b) They

carry genes that help in the transfer of characters from the parents to the offspring. (c) Pleastids contain chlorophyll. **3.** Plastics contain chlorophyl.

Prokaryote	Eukaryotes
(i) Most prokaryotes are unicellular.	(i) Most eukaryote are multicellular .
(ii) Nucleolus is absent.	(ii) Nucleolus is present.
(iii) Bacteria and blue-green algae are prokaryotic cells.	(iii) Fungi plants and animal cells are eukaryotic cell.

4. The nucleus contain thread like structures called chromosomes. They play an important role in the inheritance of characters. **5.**

Animal cell	Plant Cell
(i) They are generally small in size.	(i) They are usually larger than animal cells.
(ii) Cell wall is absent.	(ii) Cell wall is present.
(iii) Vacuoles are small in size.	(iii) Vacuoles are larger in size.

Chapter 9 Reproduction In Animals

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (b) **3.** (a) **4.** (a) **5.** (d) **6.** (b)

B. Fill in the blanks :

1. reproduction **2.** fertilization **3.** quiparous **4.** uiviparvous **5.** bermaphrodites

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Types of reproduction - (i) Sexual Reproduction (ii) Asexual Reproduction **2.** Reproduction is essential process for the continuation of a species. **3.** Different parts of a sperm- Each sperm has a head and a tail. **4.** Ostrich **5.** The developing embryo is called foetus. **6.** The transmition of the larva into adult through drastic changes is called metamorphosis. **7.** Fertilization means the process of the fusion of the gamets. It results in reproduction. **8.** The animals which give birth to young ones are called viviparous animals. E.g: Human-beings, lions etc.

B. Answer the following questions in not more than 40 words :

1. Gemetes are the cell, which is able to unite with another of the opposite sex to form a zygote. **2.** Various methods of asexual reproduction are - (i) Budding - This type of reproduction takes place in hydra. (ii) Binary fission - A single organisms get divided into two. E.g: Amoeba. **3.** Fertilized egg is known as gamete. Sperms -(i) Sperm is a male reproduction cell. (ii) Sperm is produced in the testes. Ovum : (i) An ovum is a female reproductive cell. (ii) It can develop into an embryo if fertilized by a male cell. **4.** Internal fertilization : Internal fertilization takes place inside the body. External fertilization: In external fertilization, sperms are discharged in open. **5.** (a) Frog external fertilization (b) Hens - internal fertilization (c) Humans -internal fertilization (d) Fish-external fertilization **6.** Frogs and fish produce a large number of gametes because they produce in the way of external fertilization.

C. Answer the following questions in not more than 60 words :

1. After attachment to the wall of uterus, the zygote is called an embryo. It is developed in uterus. **2.** Ovaries are the female sex organs that produce eggs and the female sex hormones, estrogen and progesterone when a female matures sexually. **3.** The male reproductive organs are

hormone, testoterone and sperm. **4.** Steps that occur during sexual reproduction have three stages. (i) Pre fertilization - This is prior to the fusion of male and female gametes. (ii) Fertilization - This completes and is permanent fusion of two gametes. (iii) Post fertilization - This occurs after the fertilization. **5.** Oviparous Animals - Those animals which lay eggs are called oviparous animals etc. E.g : Hen, frog, fish, butterfly etc. Viviparous Animals : The animals which give birth to young ones are called viviparous animals. E.g : Human beings, lions etc. **6.** Development of young ones in frog involves a cycle that is to be followed in the growth of becoming an adult young ones in humans are developed.

Chapter 10 Reaching The Age of Adolescence
Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (c) **3.** (c) **4.** (a)

B. Fill in the blanks :

1. adolescence **2.** puberty **3.** puberty **4.** secondary sexual **5.** hormones

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Teenagers should take a bath at least once everyday because the increased activity of sweat glands sometimes makes the body smelly. **2.** The thread like structures in the fertilized egg are called chromosomes. **3.** Adolescence begins around the age of 10 and lasts upto 19 years of age. **4.** The period of life when the body undergoes changes leading to reproductive maturity is called adolescence. **5.** Puberty ends when an adolescent reaches reproductive maturity. **6.** Hormones cause increase in height of the person during puberty. **7.** It is necessary to eat right kind of food, at the growing years to be health and to grow in the right manner.

B. Answer the following questions in not more than 40 words :

1. Menarche is the first menstrual cycle that a human female experiences at the onset of puberty where as menopause is the last menstrual cycle at the age of about 45 years. **2.** Menstruation is the process of the shedding of the uterine linning on a regular monthly basis. **3.** Endocrine glands are called ductless glands as they have no ducts. Hormones are released by endocrine glands directly reach into the bloodstream. Some endocrine glands are found in the brain the pineal and pituitary glands. **4.** At the end of growth period she will be 159 cm tall. **5.** Girls have a high pitched voice whereas boys have a deep voice. It happens because boys develop larger voice box in comparison to girls. **6.** The adrenal glands make several hormones including hormones that help your body respond in times of physical or emotional stress.

C. Answer the following questions in not more than 60 words :

1. Hormones make many changes in the human body to bring about on set of puberty as increase in height, change in body shape, voice change development of sex organs etc. **2.** Secondary sexual characters in boys : (i) Appearance of moustache and beard. (ii) Appearance of chest hair. (iii) Growth of hair in genital area and other parts of the skin. Secondary sexual characters in girls : (i) Increase in breast size and darkening of the skin of nipples present are the tip of the breasts. (ii) Growth of hair in genital area and other body parts. **3.** Everyone should have a bath at least once every day. It is more necessary for teenagers because the increased activity of sweat glands sometimes makes the body smelly. All parts of the body should be washed and cleaned every day. If cleanliness is not maintained there are chances of bacterial infection. **4.** Menstruation is the process of the shedding of the uterine lining on a regular monthly basis. It begins at puberty and is the reproductive cycle of the female body. Every month, the uterus prepared itself to receive a fertilized egg. Therefore, the inner lining of the uterus becomes thick and is supplied with blood to nourish the embryo. If the egg is not fertilized, then the lining of the

uterus breaks down and gets released in the form blood through the vagina. This lasts for about two to eight days. This cycle occurs every month and is known as the menstrual cycle.

5.	**Hormones**	**Their function**
(i)	Prolactin	Milk production
(ii)	Oxytocin	Uterus contracting & milk ejection
(iii)	Gut hormones	Food digestion
(iv)	Insulin	Nutrients metabolism
(v)	Estradiol	Female characterstics

Chapter 11 Force And Pressure

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (a) **3.** (a) **4.** (a) **5.** (b) **6.** (b)

B. Fill in the blanks :

1. weight **2.** pressure **3.** force area **4.** density, height **5.** mechanical force

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. When two forces act in opposite direction on an object they do not cause a change in the object's motion. **2.** A force is a push or a pull. **3.** Force of friction arises due to contact between surfaces, it is also an example of a constant force. **4.** Muscular force is the force applied by the muscles of the body. **5.** It is the force that oppose the motion of a moving body. **6.** Non-contact forces are those type of forces which results even when the two interacting objects are not in physical contact with each other. **7.** The force exerted by the bodies on each other is known as gravitational force. **8.** Pressure is force applied per unit area.

B. Answer the following questions in not more than 40 words:

1. Effects of force - (i) Force changes the direction of motion of a moving body. (ii) Force can change the shape and size of an object. (iii) Force can change the state of motion. **2.** Liquids and gases exert pressure on the wall of container they are kept in. **3.** During, swimming, a person uses muscular pressure to move. **4.** The force of friction always acts on all the moving objects to the direction of the motion. It can be minimised by minimising friction. **5.** The moon is far away from the earth that is why gravity of the moon force is less than that of the earth.

C. Answer the following questions in not more than 60 words:

1. These are magnetic force gravitational force and electrostatic force. **2.** w= (1kg) (9.807m/s^2) = 9.807 (N) a body with mass of 1 kg weight 9.807 N **3**. Three disadvantages of friction between the parts of a machine are - unnecessary wear and tear of the parts, to heat produced due friction affects the working of the machine and machine consume more fuel. The use of oiling and ball bearings reduce all these three problems.

Chapter 12 Friction

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. motion **2.** resist sliding **3.** less

C. Sate 'T' for true and 'F' for false statements:

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

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. A body starts moving when force of friction is applied. **2.** Cause of friction - (i) Static friction is caused by the attraction between the atoms on the two surfaces. **3.** Rolling friction is needed to make a wheel or tire turn. **4.** Sliding friction comes with play when an object is sliding over another. **5.** When you are unable to move something, you drag it. **7.** Force of friction acts to resist sliding between two surfaces that are touching.

B. Answer the following questions in not more than 40 words:

1. Factors on which friction depends- (i) Surfaces (ii) Irregular projection and depressions **2.** A ball rolling along the ground stop after some time because of friction. **3.** Kabaddi players rub their hand with soil because they can feel the friction push again the motion of your hand. **4.** Wet surfaces are more slippery because friction in water is minimised. **5.** The force of friction on a body in a fluid is minimised because a fluid friction is a resistance offered and the medium through which they move is minimised. **6.** A hovercraft travels much faster than a steamer pushing through water because the shape of a steamer is designed in such a way that friction between the objects and the medium through which they move is minimised.

C. Answer the following questions in not more than 60 words:

1. When a body moves or tends to move an another body a force appears between the surfaces. This force is called force of friction. It can be minimised through following methods- (i) By using lubricants like oil, grease or graphite powder. (ii) By using ball bearings or roller bearings. (iii) By using anti-friction metals or alloys (iv) By streamlining the body. **2.** The drag is depends on the object (size and shape), the motion (velocity and inclination to flow) and the air (mass, luscosity, compressibility) **3.** Friction produces heat because when forces are applied by both objects it causes heat. One advantage of friction : (i) Due to friction we are able to work on the surface of the earth. One disadvantage of friction : (i) Due to friction, speed of automobiles can not be increased beyond a certain limit. **4.** Three ways in which friction between two surfaces can be minimised area - (i) By using lubricants like oil, grease or graphite powder. (ii) By using ball bearings or roller bearings. (iii) By using anti-friction metals or alloys. **5.** Friction can be increased by (i) Making both the surfaces very rough. (ii) By making irregular projection and depressions like those we see on the types. **6.** Different types of friction : (i) Static friction : Friction that prevents an object from moving when a force is applied. (ii) Sliding friction : Slows down an object that slides. (iii) Rolling friction : It occurs between the ground and the part of tire touching the ground. **7.** Advantages of frictional force- (i) We are able to walk because of friction. (ii) Friction between the tip of the pen and a paper allows us to write. **8.** When a body moves or tends to move an another body, a force appears between the surfaces. This force is caused force of friction. Disadvantage of force of friction- (i) Tyres and soles of shoes wear out because of friction. (ii) Friction between the different parts of machines produces heat. This can damage the machines.

Chapter 13 Sound

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (c) **3.** (a) **4.** (b) **5.** (a) **6.** (d) **7.** (b)

B. Fill in the blanks :

1. time period **2.** amplitude **3.** hertiz **4.** noise **5.** frequency of vibration 6. frequency **7.** 20 HZ to 20,000 HZ **8.** frequency

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. Sound is produced by vibrating objects. **2.** Sound is produced only when the source, producing the sound, vibrates. **3.** The necessary condition for sound propagation is - (i) Sound

requires the presence of medium to travel **4.** Amplitude, in physics the maximum displacement or distance moved by a point on a vibrating body or wave measured from it equilibrium position. **5.** The reflection of sound can be used to locate or identify objects. **6.** Loudness of sound depend upon amplitude of frequency. **7.** Audible range for human ear is from 20 HZ to 20,000 HZ.

B. Answer the following questions in not more than 40 words:

1. Humans can not hear the sound of the whistle used for dog training because of its high frequency. **2.** Sound quality refers to the sound is hearable or not. **3.** It is done to absorb noise. If sounds echoed throughout the room while the movie played, none could hear the dialogue or anything else due to excessive noise. **4.** (i) Voice of a child (ii) Voice of an adult woman (iii) Voice of an adult male **5.** Number of oscillation = 20 Time, = 5 seconds Time period = 1/ frequency, Frequency = Number of oscillations / time =20/5 = 4HZ , Time period = 1/4 = 0.25 sec 6. (i) The reason is that the speed of sound is less than the speed of light. (ii) The reason is that supersonic jets have high frequency.

C. Answer the following questions in not more than 60 words:

1. (i) The reason is that supersonic jets have high frequency. (ii) Stringed instruments produce sound of different pitch. (iii) Percussion musical instruments produce sound as these instruments are stuck themselves rather than having strings to be stuck or plucked by a person. **2. 3.** The sound of a mosquito is continuous whereas the roar is a one-time sound and the lion must stop and breathe is before he can roar again. **4.** Music is ordered sound. Noise is diordered sound. Music is pleasing and smothing. Noise is unpleasent and harsh. Music sounds are periodic but noise is not periodic. Music sounds are some what regular. Noise is irregular. **5.** The lung must produce adequate airflow and air pressure to vibrate vocal folds. The vocal folds (cords) are a vibrating value that chops up the air flow from the lungs into audible pulses that from the laryngoal sound source. Thus human voice is produced **6.** Noise pollution is the disturbing or excessive noise that may harm the activity or balance of human or animal life. Effects of noise pollution :- (i) Hearing inpairment (ii) Hypertention (iii) Ischemic heart disease (iv) Hearing loss (v) Annoyance (vi) Sleep disturbance.

Chapter 14 Chemical Effects of Electric Current

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (a) **2.** (c) **3.** (a) **4.** (b)

B. State whether True or False:

1. True **2.** True **3.** True **4.** True **5.** False

Subjective Based Questions

A. Answer the following questions in not more than 20 words:

1. The decomposition of an electrolyte using electric current is known as electrolysis. **2.** Electroplating **3.** Current is a flow of electricity which results from the ordered directional movement of electrically charged particles. **4.** Battery and water. **5.** When electric current is passed through the copper sulphate solution, copper sulphate dissociates into copper and sulphate. **6.** An electric circuit is a path in which electrons from a voltage or current source flow. **7.** A battery is an electrochemical cell that can be charged electrically to provide a static potential for power. **8.** Chemical energy **9.** Chemical effect **10.** Electroplating is a chemical process using which a metal is coated with a layer of another desired metal.

B. Answer the following questions in not more than 40 words:

1. Magnetic effect of electric current is one of the major effects of electric current is used without application of which we cannot have motors in the existing world. **2.**When electric current is passed through a conducting solution, some chemical reaction takes place. When electric current is passed through the solution of metal salt, metal gets deposited at the negative pole. **3.**

Substance which allow electric current to pass through them are called conductors such as silver, gold acidic or salt solution etc. **4.** It is done because pure water conducts an electric current very poorly and for this reason is difficult to elctrolyze. **5.** Some application of the chemical effect of current are - electrolysis and electroplating **6.** It happens because solid sodium chloride is closely packed by the strong electrostatic force of attraction and ionic are immobile but ionic compounds in molten state have enough energy to break the electrostatic forces of attraction and become mobile therefore conduct electricity. **7.** Application of electrolysis :- (i) Production of hydrogen by electrolysis of water (ii) Electroplating.

C. Answer the following questions in not more than 60 words :

1. Substances which do not allow electric current to pass through them are called insulators such as wood, rubber etc. **2.** An electrode is an electrical conductor used to make conduct with a non-metallic part of a circuit, semiconductor an electrolyte a vaccum. A cathode is the electrode from which a conventional current leaves a polarized electrical device. The anode is a device is the terminal where current flows in from outside. **3.** The bulb glows because the tap water allows to pass the electricity through itself. **4.** Never eat or drink electroplanting substances. Always wear safety googles and gloves. Keep the electrolyte out of the reach of the children and animals. Never store electrolyte in metal containers. Never smoke while electropalting. Keep them away form drugs or alcohol. **5.** Uses of electroplating : (i) Jewellery plating (ii) In tyle making (iii) To make circuit boards (iv) In making Cds **6.** Necessary conditions while electroplating are (i) The electrolyte should be strong. (ii) Current should be adequate. (iii) No impurities should be present in the electrolyte. **7.** Uses of electrolysis are electroplating, extraction of metals from ores, electrolytic refining and for coating artificial jewellery with gold to give it an attractive look or coating the cutllery made of cheap metal. **8.** Electroplating is a chemical process using which a metal is coated with a layer of another desired metal Electroplating of steel spoon with silver:- (i) Clean and wash the spoon and made cathode. (ii) A sheet of pure silver is made anode. (iii) The electroplating tank filled with the silver nitrate solution. (iv) Connect the cathode to the negative terminal and anode to the positive terminal of battery. (v) When electric current is passed through the silver nitrate solution electrolysis takes place.

Chapter 15 Some Natural Phenomena

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (d) **2.** (b) **3.** (a) **4.** (b)

B. Fill in the blanks :

1. negatively **2.** positive **3.** no charge **4.** atmosphere **5.** hydrosphere **6.** is repelled **7.** electrical

C. Define :

1. Seismology is the study of science which deals with earthquakes and seismic waves. **2.** The process of providing a pathway to drain excess charge into the earth is called grounding. **3.** Earthquake is a shock or series of shocking movements of earth's crust of an area. **4.** Epicenter is a point on the earths surface just above the point of the origin of earthquakes.

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Two causes of earthquakes are (i) Volcanic eruptions (ii) Folding and faulting **2.** Subduction zone. It is also called the ring of fire. **3.** Richter scale is used to measure intensity of an earthquake. **4.** An electroscope can be used to see the things that cannot be seen with the naked eyes. **5.** Lighting is the occurrence of a natural electrical discharge of very short duration and high voltage between a cloud and the ground. **6.** The ebonite rod get the negative charge rubbing on wool.

B. Answer the following questions in not more than 40 words :

1. Two places in India which are the most threatened by earthquake are : Assam and Gujarat. **2.** Movement of tectonic plates cause earthquakes. **3.** A lighting conductor is a metallic conductor that is attached to a high point and leads to the ground and protects the buildings from destruction by lighting. **4.** Earthing is provided in buildings because lighting rods at the top of buildings and towers protect buildings. **5.** When air currents in a storm cloud, it causes thunder storm. It is produced when lightning flashes often one storm cloud. **6.** An earthquake is a shock or series of shocking movements of earth's crust of an area. **7.** We can easily charge non metals live rubber, woolen clothes, plastic etc where as we can not charge a copper rod by rubbing easily because rubbing can move electrons from one object to another.

C. Answer the following questions in not more than 60 words :

1. A body can be charged by the following ways:- (i) by rubbing (ii) by conduction (iii) by induction **2.** It is a simple process. An electric spark is created between an electrode and a workpiece. The spark is visible evidence of the flow of electricity. It produces intense heat with extremely high temperature. It is carefully controlled and localized. **3.** An earthquake causes destruction everywhere. Ritcher scale is used to measure the intensity of an earthquake. **4.** Three measures to protect ourselves from lighting- (i) Stay away from windows and door. (ii) If you are in or an open area, go to land and seek shelter immediately. **5. 6.** If you are out side, some of the precaution are as follows- (i) Try to find an open field away from tall buildings,installations, tea trees and electric wire and poles. (ii) If travelling in a bus or a car, do not come out when an earthquake strikes. **7.** If you are at home, some of the precaution are as follows (i) Take shelter under a table and stay there till shaking stops. (ii) Stay away from tall and heavy objects that may fail on you. **8.** (i) When rocks are pulled apart, a normal fault may form. (ii) When rocks are compressed, a reverse fault may form. (iii) When rocks are sheard a strike slip fault may form.

Chapter 16 Light

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (b) **3.** (c) **4.** (b) **5.** (c) **6.** (b) **7.** (b)

B. Fill in the blanks :

1. point of include **2.** 30 degree **3.** 0 ,0 **4.** virtual **5.** equal **6.** persistence of vision **7.** rod cells **8.** long wavelength light

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Light enables us to see the objects. **2.** There are two types of rays - incident ray and reflected ray. **3.** A light ray is a line that is perpendicular to the lights wave fronts. Tangent is collinear with the wave vector. **4.** The beam of light is a directional projection of light energy radiation from a light source. **5.** Mirror **6.** Virtual image is formed in a plane mirror.

B. Answer the following questions in not more than 40 words :

1. Kaleidoscope is the instrument based on multiple reflection used to create new designs. **2.** Visible light communication **3.** The important parts of eye are iris, cornea, pupil, lens, retina optic nerve, macula, choroid, sclera, conjunctiva, vitreous disc. **4.** Blind point is the place in the visual that corresponds to the lack of light detecting photoreceptor cells on the optic disc of the retina where the optic nerve passes through the optic disc. **5.** Ambulance is written reverse so that drivers can see the word the right way around in their rear-view mirror. **6.** Two sources of light are : (i) Natural source (ii) Artificial source.

C. Answer the following questions in not more than 60 words :

1. The light ray when passed through the prism, split into its constituent colours is called dispersion of ray. **2.** Lateral inversion means the apparent reversal of the mirror image left and

right when compared with the object. A mirror changes the front for the back because the surface of the mirror is the place of symmetry. **3.** It is a medical condition in which the lens of the eye becomes progessiunely opaque, resulting in blurred vision. It can be removed by a surgery, involves removing the cloudy lens and replacing it with an artificial lens. **4. 5.** It is important to take care of our eyes because it is the most sensitive organ and if it damaged our visual capability will affect. We should use googles to protect our eyes from dust and dirt. If something get into eyes, wash them with cold water. We should not rub them. We should keep sharp objects away from eyes. **6.** Specular or regular reflection is the perfect, mirror-like reflection of light. In this type of reflection, rays are also parallel to each other. Irregular reflection or diffused reflection takes place when a ray of light is incident on a wall or wood, which is not smooth or polished. In this case, the different portion of the surface reflect the incident light in different directions.

Chapter 17 Stars And The Solar System

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

1. (b) **2.** (c) **3.** (c) **4.** (a) **5.** (c) **6.** (b) **7.** (a) **8.** (a)

B. Fill in the blanks :

1. mercury **2.** mars **3.** constilation **4.** asteroids **5.** meteors **6.** mars **7.** Jupiter

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Arybhatta is the first satellite of India. **2.** A natural heavenly body that revolves around a planet in its orbit is called a natural satellite. **3.** We classify the sun as a star because it has its own light. **4.** Halley's Comet **5.** Two artificial satellites of our country - (i) INSAT (ii) Aryabhatta **6.** The Poler star always appear stationary from earth's surface. **7.**The changing shapes of the moon are called phases of moon. **8.** Celestial bodies are those which are not planet. **9.** It happens due to the light pollution. If affect the abilities to see the stars.

B. Answer the following questions in not more than 40 words :

1. In reality, the sun never rises or sets. It seems so due to the rotation of the earth on its axis. **2.** Light year is a unit of astronomical distance that light travels in a year. Which is 9.4607×10^{12} km (nearly 6 millions million miles) **3.** The Poler star lies in the north direction. **4.** Solar system comprises of nine planets. **5.** Meteors are called shooting stars even though they are not stars because during some nights we can see certain objects in the sky burning down through the atmosphere. **6.** Mriga constellations is called hunter. **7.** We can not hear any sound on the moon.

C. Answer the following questions in not more than 60 words :

1. Uses of artificial satellite :- (i) Scientific research and to study the universe. (ii) To predict weather. (iii) In communication (iv) For navigation **2.** Meteors and Meteorities : A meteors is a bright streak of light in the sky. Produced by the entry of a small meteroid into the earths atmosphere. Very bright meteors are known as fireballs. Meteorites are bits of the solar system that have fallen to the earth. Though meteorites may appear to be just boring rocks. They are extremely important that they are analyzed in labs. **3.** Constellation are patterns of stars. These are man made pictures of something. A star is a massive ball of hydrogen and helium that is undergoing nuclear fusion. These are cosmic energy engines that produce heat, light, UV rays and X rays and other forms of radiation. **4.** The moon is earths natural satellite. It is one of the largest natural satellites in the solar system. It is formed about 4.5 billion years ago. It has not its own light and get light from the sun. The surface of the moon is uneven. It has many craters. There is no life on the moon because it has no atmosphere. **5.** A galaxy is a gravitational bound system of stars. It has millions of stars. These are elliptical, spiral or irregular. A constellation is a group of some stars. It has stars in limited number. It can be of many shapes as a bear. **6.** A star has its own light. They are held together by their own gravity. These do not revolve around and

celestial body. A planet is a wandering star. They have no light of their own. They revolve around a star.

Chapter 18 Pollution of Air And Water

Exercise

Objective Based Questions

A. Choose and tick (✔) the correct option :

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

B. Fill in the blanks :

1. pollutents **2.** plants animals **3.** Mathura oil **4.** methane **5.** punjab **6.** taps **7.** tress and parks **8.** air **9.** conservation

Subjective Based Questions

A. Answer the following questions in not more than 20 words :

1. Pollution is the introduction of harmful substances to the environment. **2.** Nitrogen is the main consistent of air. **3.** Toxic pollution and carbon monoxide are the two air pollutants. **4.** Sulphur dioxide and nitrogen dioxide are the two gases which cause acid rain. **5.** The green house effect is responsible for global warming. **6.** When acid rain falls on the marble-made monuments, they react by the rain. This is called marble cancer. **7.** The Ganga Action Plan was made to save river Ganga. **8.** Nitrogen and phosphoros are two contaminants of water. **9.** Corbon-dioxide is produced due to incomplete combustion of fuels. **10.** Chlorine is used for the purification of water.

B. Answer the following questions in not more than 40 words :

1. Asthama is a disease caused by polluted air. In this disease the suffering person feels trouble in breathing. **2.** The introduction of unwanted gases and substances into air is called air pollution, Asthama and breathing problems are caused due to air pollution. **3.** Water which is suitable for drinking is called potable water. Water can be purified by boiling, filtering or using chlorine. **4.** Ozone is a gas, largely found at a height of about 20 to 25 kilometres in the atmosphere. It absorbs harmful ultra violet rays emitted by the sun. **5.** When solar radiation reach the earth, some of these radiations are absorbed by the earth and then released back to the atmosphere. Green house gases present in the atmosphere trap these radiations and do not allow heat to leave. This holes in keeping our planet warm, and thus, helps in human survival. However, an indiscriminate increase in the amount of green house gases can lead to excessive increase in the earth's temperature leading to global warming. **6.** The government and city authorities have taken measures to protect India's greatest sight. Pollution station around Agra monitor air quality around the clock. Car traffic has been banned within two kilometers of the monument. Electric and battery driven cars and buses then take tourists to the site. A natural gas pipeline is also in discussion. Factories and industries around Agra should be persuaded to change to cleaner forms of energy. **7**. The introduction of unnecessary substances and chemicals into water is known as water pollution. Fertilizers and dumping of industrial wastes into water bodies are two causes of water pollution. **8.** Global warming is an increase in the average temperature of the earth's surface. The north pole is melting rapidly due to global warming and it is resulting in the increasing sea level. **9.** The combination of smoke and fog is called smog. It leads to air pollution of air borne diseases. **10.** Water is needed to be filtered before drinking because dirty polluted water can make us ill. Typhoid and jaundice are water borne diseases.

C. Answer the following questions in not more than 60 words :

1. Causes of air pollution are :- (i) Burning of non-biodegradeble wastes (ii) Industrial smoke (iii) Smoke form vehicles (iv) smog **2.** Burning of fossil fuels such as coal and diesel releases a variety of pollutants such as sulphur dioxide and nitrogen dioxide into the atmosphere. These pollutants react with water vapours present in the atmosphere to form sulphuric acid and nitric acid respectively. **3.** Ozone is seen in traces in earth's atmosphere. This gas is largely found at a

height of about 20 to 25 kilometres in the atmosphere. Ozone layer absorbs harmful ultraviolet rays emitted by the sun. Thus it prevents ultraviolet rays from reaching the earth and protects the earth. But when chloroflurocarbons (CFC_s) and the oxides of nitrogen reach the upper layer of earth's atmosphere, it causes the depletion of the ozone layer. Chlorine formed by the dissociation if CFC_s destroys the ozone layer. **4.** Eutrophication is the process by which a body of water acquires a high concentration of nutrients especially phosphates and nitrates. They typically promote excessive growth of algae. It is a natural. Slow-again process for a water body but human activity greatly speeds up the process. **5.** Water can be conserved following the given ideas :- (i) Never dispose paints, oils, pollish or any cleaning products in the toilet, sink or down drains. (ii) Never throw trash in water bodies. (iii) Do not overwater the lawns and gardens. (iv) Avoid water wastage. (v) Water the garden with a bucket and mug instead of using a house. **6.** Effects of polluted water are :- (i) It causes water borne diseases. (ii) It is a dangers to the aquatic living beings. (iii) It has diverse effect or farming. **7.** The Ganga Action Plan was introduced to same and to purify the river ganga. It failed in achieving its aim because of the non-availabilty of environment state of the art, inappropriate environment planing & shortage of anthentic information of quality and quantity of waste generation. **8.** Air pollution can be checked by using the CNG fuel in vehicles. We should not burn out the wastage. We can use the alternative energy sources such as solar power. We can regularly get serviced our vehicles. **9.** It is due to polluted air and acid rain. Acid rain causes marble cancer that is the damaging of marble because of the sulphur dioxide and nitrogen dioxide present in acid rain. **10.** Sources of water pollution are :- (i) Wastes form industries (ii) Fertilizers and pesticides (iii) Dumping of household wastes (iv) Leakage of oil from oil takers or ships.