Science-7

Chapter – 1 Nutrition in Plants and Animals

A. Tick (✓) the correct answer:

1. c 2. b 3. c 4. d

B. Fill in the blanks:

1. Plants 2. Oesophagus 3. Sticky
4. Buds 5. Intestine

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. The process of obtaining and utilizing food.
2. Plants are called autotrophs because they prepare their own food.
3. The process by which green plants prepare their own food is called photosynthesis.
4. Presence of sunlight, availability of water
5. Herbivorous: Cow , Buffalo; Carnivorous : Lion , Tiger ; Omnivorous: Human beings, Dog
6. Animal parasite : Roundworm, plant, Parasite : Mistle – toe
7. Amoeba trap its food by pseudopodia.
8. Fish and amoeba
9. Two pairs of each side.
10. It helps in identifying taste of the food stuff.

E. Write short answers for the following questions :

1. Organisms that can make their own food are called autotrophes. For example :- Green Plants Organisms that cannot make their own food are called heterotrophs. For example : - Human beings. Etc.
2. Organisms that derives its food from other microorganisms are called parasites. For example : Roundworm
3. A substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction. It helps in breaking down the complex substances present in the food to simpler substances .
4. The process of absorption of digested food into the blood is called absorption while the process of utilizing digested food for growth and energy is called assimilation.
5. The housefly uses its own saliva to dissolve the food and forms a solution. It sucks up the solution with the help of feeding tube.
6. Organisms that depend upon dead and decaying plants and animals are called saprophytes. For example : fungi and bacteria.
7. For diagram see page no 10.

F. Write long answers for the following questions :

1. Amoeba is the simplest organism. It does not have any mouth. When food comes near a amoeba, it ingests the food particles by forming pseudopodia. The food particles and a little amount of water form a food vacuole inside amoeba. The food is digested in the food vacuole by the digestive enzymes and the waste or undigested food is thrown out from the body.
2. Photosynthesis is the process by which green plants prepare their own food using minerals, nutrients, water , air in the presence of sunlight.

   Do it yourself (Activity 1.2 page no 6)
3. The different types of teeth found in human beings along with their functions are as follows:
   a. Incisors: they help in cutting the food.
   b. Canines : they help in tearing the food.
   c. Premolars : they help in crushing and grinding the teeth.
   d. Molars : they also help in grinding the teeth.
4. The different parts of human alimentary canal are mouth, oesophagus, stomach, small intestine, large intestine, gall bladder, liver, pancreas, rectum and anus.

   Food travels down the alimentary canal by a series of contraction and expansion of muscular walls. This is called peristalsis. During the digestion of food digestive enzymes are produced by salivary glands, gastric glands, pancreas, liver and intestine. The digested food is now absorbed through

finger like projections called villi in the inner wall of the small intestine. The absorbed food is transported by blood to all parts of the body. In the large intestine , water and useful minerals are absorbed from undigested food remains. Undigested semi – solid food , in the form of faeces is egested through the anus.

G. Name the following :

1. Chloroplast
2. Saprophytes
3. Mastication
4. Heterotrophic

Think and Do

Do it yourself

Chapter – 2 Heat and its Transmission

A. Tick (✓) the correct answer :

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

B. Fill in the blanks :

1. Summer 2. Energy 3. Heat
4. 0°C 5. Measure 6. bimetallic

C. Write 'T' for true and 'F' for false :

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

D. Match the following:

1.	Bimetallic Thermometer	a.	Solid medium
2.	Clinical Thermometer	b.	Liquid and gas medium
3.	Conduction	c.	Without medium
4.	Convection	d.	Very high temperature
5.	Radiation	e.	Medical practicians

E. Write very short answers for the following questions :

1. Heat is a form of energy and temperature tells us how hot or cold an object is.
2. The minimum temperature is called lower fixed point while the maximum temperature is called the upper fixed point.
3. The temperature of normal human being is 36°celcius and 98°Fahrenheit.
4. Because copper is a good conductor of heat .
5. By convection.
6. Some example of good conductor of heat are as follows.
   i. Copper ii. Iron iii. Steel

Some example of bad conductor of heat are as follows:

i. Wood ii. Plastic iii. Glass

7. Two condition for the conduction of heat are as follows.
   i. The two object must be in connection with each other.
   ii. The temperature of two object should be different.

F. Write short answers for the following questions :

1. Heat is a kind of energy that always flow from higher to lower direction. Temperature can be defined as the degree of hotness or coldness of a body.
2. Do it yourself activity no. 3.4 see page no. 20.
3. White or light colours do not absorb heat, so people wear it in the summer.
4. Mercury is used in the thermometer because it is a good conductor of heat.
5. Slabs of ices covered with sawdust or jute bags . The sawdust and jute contain a large no. of pores filled with air. Air act as an insulator and prevent the ices slabs from melting.
6. The room heat after sometime because heater blower and heat convector heat the room by setting up convection current.

G. Write long answers for the following questions :

1. The process of transmission of heat energy into solid without the movement of molecules from their own position is called conduction.
   i. Making tea.
   ii. Heating a room by heaters.
2. The process of transformation of heat in a liquid or a gas by the movement of molecules from hotter to the colder part of the liquid or gas is called convection. (Experiment on page no.22 activity 3.6).
3. Do it yourself page no.22 activity no.3.7.
4. Do it yourself page no. 23 activity no. 3.8.
5. Do it yourself page no. 20 activity no. 3.3.
6. The temperature in Fahrenheit =
7. Sea breeze; During day time , land gets heated more quickly than the sea. This is because the specific heat of water is higher than the sand

and Earth surface .Hot air moves in upper direction and the cold air move from sea toward the land. This is called sea breeze.

Land Breeze : During the night, Land cools more rapidly than the sea. Hot air moves above the sea rises up and cold air moves from the land towards sea. This kind of movement of air is called land breeze.

8. The difference between conduction and convection is tabulate below

Conduction

1. Heat transfer is between a hotter molecule to a colder molecule. It takes place in solid ,liquid and gases.
2. Heat transfer takes place on contact between hot molecules and cold molecules.
3. It does not occur in vacuum .
4. Heat transfer can occur in any direction from hot to cold body.
5. It is relatively slow process.
6. For example :Cooking of food.

Convention

1. Convention is the process of transfer of heat energy in liquid and gases.
2. The hot molecules go up and away from the heat source to coldest region at the top. Cold molecules move to the heat source, thus setting up a convection cycle.
3. It does not occur in vacuum and in solids as the molecules are not free to move.
4. Heat transfer occur along the path of convection current from heat source to coldest region at top.
5. The process is faster than conduction but slower than radiation.
6. For example :Sea breeze

H. Name the following:

1. Conduction , Convection and Radiation.
2. Copper , aluminum , iron , silver
3. Glass , sand , wood , rubber
4. Radiate more heat
5. Poor radiators of heat.

Think and Do

Do it yourself

Chapter – 3 Acids, Bases and Salts

A. Tick (✓) the correct answer

1. d 2. d 3. d 4. d 5. c

B. Fill in the blanks :

1. Pink 2. Alkali
3. Neutralization reaction 4. Sour, bitter
5. Aqua regia 6. King of chemicals
7. NaHCO3 8. Blue, red
9. Calcium carbonate

C. Write 'T' for true and 'F' for false :

1. T 2. F 3. T 4. F 5. T
6. F 7. F 8. T 9. T 10. T

D. Write very short answers for the following questions :

1. Carbon di oxide does not help in burning.
2. Carbonic acid
3. The reaction between an acid and a base to form a salt is called a neutralization reaction.
4. So as to prevent from any chemical reaction.
5. It is used in vinegar and is also used as preservative.
6. They show variable behavior depending on the nature of elements.
7. It is a basic solution used to neutralize the acid in our body.
8. Sodium chloride and sodium benzoate
9. Plaster of paris is hydrated calcium sulphate. It is used for repairing fractured bones.

E. Write short answer for the following questions :

1. Acidity in stomach means the production of excess acid in the stomach. It can be treated by using some basic substances. Magnesium hydroxide and aluminum hydroxide.
2. Salts are required to maintain the metabolism of our body. We require sodium and calcium salts in our body.
3. Salts that absorbs moisture form air are called deliquescence salts while those salts that do not absorb moisture from salts are called deliquescent salts.
4. Brass and copper utensils are coated with tin to protect them from getting corroded.
5. H_2SO_4 and $HNO_3$are used in the manufacture of dyes, paints and explosives while HCl is used for purification of salts.
6. NaOH is also used in petroleum refining, NaCl is used in food , in pickles etc., Na_2CO_3 is used for washing clothes.

F. Write long answers for the following questions :

1. The general properties of acid are as follows:
   a. Acids are sour in taste .
   b. Acids turn blue litmus paper to red.
   c. Acids are corrosive in nature.
   d. Acids contain hydrogen .
   e. Acids have a pungent odour.
2. The general properties of base are as follows:
   a. They are soapy to the touch
   b. They are bitter in taste
   c. They turn red litmus to blue
   d. All bases contain hydroxyl group .
   e. Bases are colourless liquids.
3. The reaction in which a base reacts with acid to form salt is called neutralization reaction.
   $NaOH + HCl \rightarrow NaCl + H_2O$
4. A substance which changes colour when treated with acidic or basic solutions yes we can prepare natural indicators. For example : turmeric , red cabbage , china rose, etc.
5. Neutralization reaction is used in day to day life. If someone suffers from acidity, on consuming basic salts , he/she can get relief. If a bee injects us applying some basic substance can provide us relief.

Think and Do

Do it yourself

Chapter – 4 Chemical Substances and Chemical reaction

A. Tick (✓) the correct answer :

1. c 2. c 3. c 4. d

B. Fill in the blanks :

1. Small 2. Sound 3. 22
4. Chemical 5. Oxidation

C. Write 'T' for true and 'F' for false :

1. T 2. F 3. F 4. F 5. F
6. F 7. F 8. T 9. F 10. T

D. Write very short answers for the following questions :

1. A pure substance which is made up of only one kind of atom.
2. $CaCO_3 \rightarrow CaO + CO_2$
3. A pure substance which is made up of only one kind of atom is called an element while A pure substance which is made up of two or more element in a fixed ratio is called compound.
4. Symbolic representation of an element is called symbol while the symbolic form of a chemical compound is called chemical formula.
5. Argon, neon etc. They are called inert gases because they do not react with other elements.
6. The conditions for a chemical reaction are as follows:
   a. One or more substances must undergo a chemical reaction
   b. The releasing or absorbing of energy must occur in the reaction.
   c. There must be one or more new substance produced after the reaction.
7. Five metals and non – metals along with symbol are as follows:

a. Metals : 1. Iron – Fe , 2. Copper – Cu , 3. Aluminum – Al , 4. Magnesium – Mg , 5. Sodium – Na

b. Non – Metals : 1. Hydrogen – H , 2. Nitrogen – N, 3. Oxygen – O , 4. Chlorine – Cl , 5. Sulphur – S

E. Write short answers for the following questions :

1. Reactions which produce heat energy are called exothermic reactions while reactions which consume energy are called endothermic reactions.
   $C + O_2 \rightarrow CO_2 + heat$ (Exothermic)
   $CaCO_3 + heat \rightarrow CaO + CO_2$(Exothermic)
2. The reaction in which two or more reactants combine to form product(s) is called combination reaction.
   $NaOH + HCl \rightarrow NaCl + H_2O$
3. Atoms are the smallest unit of element which take part in chemical reaction while molecules are the smallest unit of substances which exist in free state.
4. The symbols are :

a. H b. Na c. O d. K e. He

5. The chemical formula are:

a. CO_2 b. $CaCO_3$ c. NaCl
d. Na_2CO_3 e. KNO_3

F. Write long answers for the following questions :

1. The reaction in which two compounds react with exchange of their atoms, are called double displacement reaction while those chemical reactions in which one least reactive element

is replaced by most reactive element is called displacement reaction.

2. When oxygen is added in a reaction , it is called oxidation reaction. $C + O_2 \rightarrow CO_2$
   Removing of oxygen from a compound in a reaction is called reduction reaction.
   $CuO + H_2 \rightarrow Cu + H_2O$
3. Those chemical reactions in which one least reactive element is replaced by most reactive element is called displacement reaction.
   $CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$
4. The difference between metals and non – metals .

Parameters

1. Physical state
2. Malleability and Ductility
3. Lusture
4. Thermal conductivity
5. Electrical conductivity
6. Hardness
7. Density
8. Sonority
9. Tensile strength
10. Melting and boiling point.

Metals

1. Metals are generally solid at room temperature. Mercury, francium, rubidium and gallium are some metals that are liquid at room temperature.
2. Metals are malleable and ductile except Zinc which is brittle.
3. Metals in the pure state possess lusture.
4. Metals are good conductor of heat.
5. Metals are good conductor of electricity.
   Ag> Cu> Au> Al> W> Hg.
6. Metals are generally hard except Sodium, Lithium and Potassium.
7. Metals have high density because atoms in them are closely packed. Except Lithium, Sodium and potassium.
8. Metals are sonorous.
9. Metals have high tensile strength.
10. Metals have high melting and boiling point.

Non-Metals

1. Non-metals are generally gaseous at room temperature. Bromine is liquid at room temperature. Sulphur and phosphorous are solid at room temperature.
2. Non- metals are neither malleable nor ductile. They are brittle.
3. Non-metals do not possess lusture except Iodine.
4. Non-metals are poor conductor of heat.
5. Non-metals are poor conductor of electricity except graphite.
6. Non- metals are quite soft except diamond (hardest substance in nature.)
7. Non- metals have low densities.
8. Non-metals are non-sonorous.
9. Non- metals have low tensile strength.
10. Non-metals have low melting and boiling point except Boron, Diamond and Graphite.

G. Name the following:

1. Wolfram 2. Chemical formula 3. Symbol 4. Atom 5. Molecule

Chapter – 5 Climate of soil

A. Tick (✓) the correct answer:

1. d 2. b 3. d 5. d 5. d

B. Fill in the blanks:

1. Unfertile 2. Alluvial 3. Sandy 4. Top soil 5. Fertility 6. The cooler the climate 7. Hot regions 8. Direct 9. Weathering

C. Write 'T' for true and 'F' for false :

1. F 2. T 3. T 4. F 5. F 6. T 7. F 8. T 9. F 10. T

D. Match the following:

1.	Weathering of rocks	a.	Black soil
2.	Desert soil	b.	Natural resource
3.	Black soil	c.	Kerala, Karnataka
4.	Iron and Magnesium	d.	Humus
5.	Over-grazing	e.	Soil formation
6.	Soil	f.	Himalayan region
7.	Red soil	g.	Haryana, U.P., Bihar
8.	Mountain soil	h.	Maharastra, M.P. Gujarat
9.	Alluvial soil	i.	Soil erosion
10.	Fertility of soil	j.	Rajasthan, Gujarat

E. Write very short answers for the following questions :

1. Clayey soil
2. Laterite soil
3. Black soil or Regur
4. Clayey soil
5. Mosses , lichens and ferns
6. Topmost layer of Earth's crust

F. Write short answers for the following questions:

1. It becomes cooler as we move away from the equator because of decrease in the angle at which sun rays fall on Earth.
2. Water enters the crevices of rocks and in winter freezes. Since , water expands on freezing, the ice in crevices of rocks expands. This cause the rocks to crack and form smaller rocks which further breakdown to form even smaller pieces.
3. The roots of trees gets firmly attached to the soil which prevents soil erosion.
4. Polar animals conserve heat by following ways:
   a. Animals living in cold climates are usually much larger due to which they reduce their body surface to prevent heat loss.
   b. Animals in cold climates have short ears, tails and short legs, as portions of the body like ears, tail lose heat first.
   c. Some animals restrict their body activity to the minimum to reduce heat loss.
   d. Some animals hibernate to prevent heat loss.
5. Animals sweat, pant and lick their bodies to cool themselves. As sweat and saliva evaporate , it help to keep their bodies cool. Such adaptations prevent water loss from their body.
6. Rain, wind, temperature and Living organisms
7. The daily weather report is called weather forecasting. The weather forecast is of utmost importance for Indian farmers who depends on rain for irrigation. It also provide navigators about the atmospheric conditions .

G. Write long answers for the following questions :

1. The various factors on which the climatic conditions of a place depends.
   a. Distance from the sea or high mountain ranges.
   b. Height of an area above sea level.
   c. Winds blowing towards or from the sea.
   d. Humidity or the amount of moisture in the air.
   e. The distance of a region from the equator.
2. Animals have following adaptations:
   a. Animals living in cold climates are usually much larger due to which they reduce their body surface to prevent heat loss.
   b. Animals in cold climates have short ears, tails and short legs, as portions of the body like ears, tail lose heat first.
   c. Some animals restrict their body activity to the minimum to reduce heat loss.
   d. Some animals hibernate to prevent heat loss.
   e. Animals sweat, pant and lick their bodies to cool themselves. As sweat and saliva evaporate , it help to keep their bodies cool. Such adaptations prevent water loss from their body.
3. Soil is considered as a natural resources because it fulfill our basic needs. We obtained food from plants that grow in soil. We build house on soil to live. cotton and jute plants required to make fabric grow in soil. There would be no life on earth without soil.
4. Soil profile is the side view of the vertical sections cut through the soil to the underlying layer of solid rock. The process of soil formation directly leads to the development of the soil profile. The colour of the soil changes as we dig deeper. Similarly , the size of rock pieces also changes. The three main layer of soil profile are top soil, subsoil and parent rock followed by the non–porous layer of bed rock.
   a. A horizon or Top soil: the upper most layer of the soil is called top soil. It is usually darkest in colour due to the

presence of humus.

b. B horizon or Subsoil: this layer lies below the top soil and is comparatively lighter in colour. Subsoil is not as rich in humus as top soil.

c. C horizon or Parent rock: it is the bottom most layer of the soil and is called parent rock. .it is made up of incomplete weathered rock and stones.

Think and Do

Do it yourself

Chapter–6 Respiration in Plants and Animals

A. Tick (✓) the correct answer :

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

B. Fill in the blanks:

1. Energy 2. Ignition 3. Chest
4. Haemoglobin 5. Stomata

C. Write 'T' for true and 'F' for false :

1. F 2. T 3. F 4. F 5. F
6. T 7. F 8. T 9. T 10. T

D. Write very short answers for the following questions :

1. Glucose + energy 2. Leaf
3. Trachea and lungs
4. Circulation of oxygen
5. Cellular respiration

E. Write short answers for the following questions :

1. Breathing is the intake of oxygen and release of carbon dioxide while respiration is the process by which food is oxidized to release energy.
2. In combustion energy is produced in the form of heat and light while in respiration energy is produced in form of chemical molecules.
3. Breaking of pyruvic acid into CO_2 and H_2O or alcohol or lactic acid with energy is called kreb's cycle.
4. In plants, respiration occurs through diffusion while in animals, respiration occurs through glycolysis and Kreb's Cycle.
5. A growing organisms need energy to maintain metabolic activities of the body. Basically, the energy evolved during respiration is also required for cell division.
6. Frog – lungs , Earthworm – Skin , Coackroach – spiracles , Leech – skin , housefly – Spiracle , Mosquito – Spiracles

F. Write long answers for the following questions :

1. In plants, respiration completes in two phases that are exchange of gases and cellular respiration. In respiration , plants convert the sugar back into energy for growth and life processes. The chemical equation for respiration shows that the sugars from photosynthesis are combined with oxygen.
   $C_6H_{12}O_6 \rightarrow 6CO_2 + 6H_2O + Energy.$
2. The major part of human respiratory system are nasal cavity , larynx , trachea , bronchi , and lungs.
   Nasal Cavity : the nasal cavity traps germs and particles present in the air.
   Larynx: larynx is responsible for speech.
   Trachea or Wind pipe: The trachea or wind pipe is a tender muscular tube supported by cartilaginous rings.
   Bronchi : Each bronchi divides into smaller tube called as Bronchioles and finally enters tiny sac like structures called alveoli.
   Lungs : Each lung has millions of alveoli which get filled with air when we inhale.
3. Do it yourself (Activity – 7.2 page no 62)
4. Major quantities of gaseous exchanges take place through stomata. It is a space between two kidney shaped guard cells. It controls the opening and closing of stomata.
   For diagram see page no 63

G. Name the following :

1. Breathing 2. Guard cells
3. Respiration 4. Aerobic respiration
5. Gills

Think and Do

Do it yourself

Chapter – 7 Movement of Substances: Transportation

A. Tick (✓) the correct answer:

1. b 2. b 3. b 4. c

B. Fill in the blanks:

1. Herbs 2. Auricles 3. Lower
4. Vessels 5. Heart

6. Haemoglobin 7. Disease

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Because they fight against diseases.
2. Blood is red coloured liquid which circulates in our body. A , B , AB and O
3. Coagulation of the blood from an injured blood vessel is called blood clotting.
4. Plasma , WBCs , RBCs and platelets
5. Haemoglobin

E. Write short answers for the following questions :

1. Water and minerals are transported from roots to other parts of plants by xylem and food is transported from leaves to other parts of plants by phloem.
2. Translocation of food means the transport of food prepared by leaves throughout the plant by phloem.
3. The liquid part of the blood is called plasma.
4. RBCs carry oxygen in the body.
5. Haemoglobin actually carries oxygen in Red blood cells.
6. Haemoglobin
7. Platelets
8. The functions of platelets in the blood is to prevent excess loss of blood during an injury. It helps in blood clotting.
9. The organs of circulatory system in humans are blood vessels, heart , blood and blood transfusion.
10. Heart

F. Write long answers for the following questions :

1. Loss of water in the vapour state from the aerial parts of plants is known as transpiration.
2. Transport of materials is necessary in an organism so as to provide basic components required for body's proper functioning to every cell.
3. Special tissues and organs are needed for the transport of substances in plants and animals because these tissues and organs can pick up the essential substances like food , oxygen , water, etc. at one end of their body and carry them to all other plants.
4. The functions of blood are as follows:
   a. It helps in transport of nutrients and oxygen to every cell of the body.
   b. WBCs present in blood provides immunity to us.
   c. Platelets in blood help in blood clotting
5. The function of RBCs is to carry oxygen from the lungs to all the cells of the body.
6. The difference between arteries and veins are as follows:

   Arteries

   a. Arteries are thick walled.
   b. It carries blood from heart to other body parts.

   Veins

   a. Veins are thin walled.
   b. It carries blood form body parts to the heart.
7. For diagram see page no 72.
8. The capillaries are thin walled and extremely narrow tubes while arteries are thick walled.

G. Name the following:

1. Coagulation 2. Diffusion
3. Xylem 4. Phloem
5. Blood

Think and Do

Do it yourself

Chapter – 8 Movement of substances – Excretion

A. Tick (✓) the correct answer.

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

B. Fill in the blanks:

1. Soluble 2. Toxic 3. Excretion
4. Kidney 5. Nephrons 6. Excretory
7. Blood

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Nitrogen compounds and excess of water from minerals.

2. Nephridia & Maplhigian tubules
3. Nephron
4. The constant changes experience by living cells because of chemical reactions taking place in them are referred to as metabolism.
5. Ultrafiltration, Selective absorption & Secretion

E. Write short answers for the following questions :

1. Removal of waste materials produced by the body is called excretion.
2. The nephron is divided into following parts:
   a. **Malphigian corpuscles :** It is formed of two parts .
      i. **Bowman's Capsule :** the blind end of nephron is like a double walled cup. It extends into a long tubule. These tubules are surrounded by a network of renal capillaries .
      ii. **Glomerulus :** The cavity of the cup encloses a bunch of capillaries called glomerulus.
   b. Secretory part or uriniferous tubule: The remaining part of nephron after the bowman's capsule is called secretory part or uriniferous tubule.
   c. Collecting tubule : A collecting tubule receives distal tubules of several nephrons.

   For diagram see page no 80
3. Excretion is important to remove toxic substances from our body that might cause many disorders.
4. In smaller animals like hydra, amoeba etc. carbon dioxide is directly discharged into the environment through the general body surface by the simple process of diffusion.
5. Dialysis is the technique of separating small molecules from larger ones using a semi permeable membrane.
6. The production of a watery fluid from sweat glands in the skin is called sweating.

F. Write long answers for the following questions :

1. In humans , kidneys are the main excretory organs. Besides kidneys , lungs, skin, liver , intestine also serve as excretory organs. The kidney is mainly associated with urinary system.

   For diagram see page no 80
2. For diagram see page no 80
3. The production of a watery fluid from sweat glands in the skin is called sweating.Apart from kidney , our skin helps in discharging waste. It excretes excess of water , urea , salts and other metabolic waste in the form of sweat .Sweating produces a cooling effect. The rate of sweating depends upon two things – Humidity & Air movement.
4. Dialysis is the technique of separating small molecules from larger ones using a semi permeable membrane. See diagram on page no 82
5. The formation of urine involves three main processes:
   a. Ultrafiltration: Bowman's capsules act as ultrafilters. As blood flows through glomerular capsules, water and all the substances of plasma except blood cells and plasma protein, filter out of the blood into Bowman's capsule. Then they through the thin walls of the capsule , they enter the tubule. The filtrate has waste like urea in it.
   b. Reabsorption: As the filtrate moves down the tubule, useful substances such as sugars, amino acids, water and salts are reabsorbed by the cell walls of the tubule.
   c. Secretion : it includes movement of certain substances from peritubular blood into the tubular fluid. Urea & salts are secreted from blood in the tubular fluid in the distal convoluted tubules and collecting ducts.

Think and Do

Do it yourself

Model Test Paper – 1

A. Tick (✓) the correct answer:

1. b 2. c 3. d 4. c
5. c 6. d 7. c

B. Fill in the blanks:

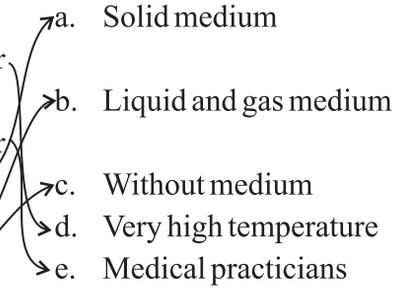
1. Kidneys 2. Lower 3. Bimetallic

4. Sound 5. Fertility 6. Chest
7. Blue & red 8. Measure

C. Write 'T' for true and 'F' for false

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

D. Match the following:



1.	Bimetallic Thermometer	a. Solid medium
2.	Clinical Thermometer	b. Liquid and gas medium
3.	Conduction	c. Without medium
4.	Convection	d. Very high temperature
5.	Radiation	e. Medical practicians

E. Write very short answers for the following questions :

1. Nephron 2. Magnesium hydroxide
3. Blood is red coloured liquid which circulates in our body. A , B , AB and O
4. Laterite soil 5. Trachea and lungs
6. A pure substance which is made up of only one kind of atom is called an element.
7. By convection
8. Because they make their own food.

F. Write short answers for the following questions :

1. In smaller animals like hydra, amoeba etc. carbon dioxide is directly discharged into the environment through the general body surface by the simple process of diffusion.
2. Plasma
3. Polar animals conserve heat by following ways:
   a. Animals living in cold climates are usually much larger due to which they reduce their body surface to prevent heat loss.
   b. Animals in cold climates have short ears, tails and short legs, as portions of the body like ears, tail lose heat first.
   c. Some animals restrict their body activity to the minimum to reduce heat loss.
   d. Some animals hibernate to prevent heat loss.
4. In plants, respiration occurs through diffusion while in animals, respiration occurs through glycolysis and Kreb's Cycle.
5. H_2SO_4 and HNO_3 are used in the manufacture of dyes, paints and explosives while HCl is used for purification of salts.
6. The reaction in which two or more reactants combine to form product(s) is called combination reaction.
   $NaOH + HCl \rightarrow NaCl + H_2O$
7. Heat is a kind of energy that always flow from higher to lower direction. Temperature can be defined as the degree of hotness or coldness of a body.
8. A substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction. It helps in breaking down the complex substances present in the food to simpler substances .

G. Write long answers for the following questions :

1. For diagram see page no 80.
2. Transport of materials is necessary in an organism so as to provide basic components required for body's proper functioning to every cell.
3. The major part of human respiratory system are nasal cavity , larynx , trachea , bronchi , and lungs.

   Nasal Cavity : the nasal cavity traps germs and particles present in the air.

   Larynx: larynx is responsible for speech.

   Trachea or Wind pipe: The trachea or wind pipe is a tender muscular tube supported by cartilaginous rings.

   Bronchi : Each bronchi divides into smaller tube called as Bronchioles and finally enters tiny sac like structures called alveoli.

   Lungs : Each lung has millions of alveoli which get filled with air when we inhale.
4. Soil profile is the side view of the vertical sections cut through the soil to the underlying layer of solid rock. The process of soil formation directly leads to the development of the soil profile. The colour of the soil changes as we dig deeper. Similarly, the size of rock pieces also changes. The three main layer of soil profile are top soil, subsoil and parent rock followed

by the non – porous layer of bed rock.

a. **A horizon or Top soil:** the upper most layer of the soil is called top soil. It is usually darkest in colour due to the presence of humus.

b. **B horizon or Subsoil:** this layer lies below the top soil and is comparatively lighter in colour. Subsoil is not as rich in humus as top soil.

c. **C horizon or Parent rock:** it is the bottom most layer of the soil and is called parent rock. it is made up of incomplete weathered rock and stones.

5. Those chemical reactions in which one least reactive element is replaced by most reactive element is called displacement reaction.

$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$

6. Photosynthesis is the process by which green plants prepare their own food using minerals, nutrients, water, air in the presence of sunlight.

Do it yourself (Activity 1.2 page no 6)

7. Do it yourself page no. 20 activity no. 3.3.

8. The reaction in which a base reacts with acid to form salt is called neutralization reaction.

$NaOH + HCl \rightarrow NaCl + H_2O$

H. Name the following:

1. Chloroplast 2. Wolfram
3. Radiate heat 4. Guard cells
5. Phloem 6. Herbs

Chapter – 9 Reproduction In Plants.

A. Tick (✓) the correct answer :

1. b 2. d 3. c 4. d

B. Fill in the blanks :

1. Reproduction 2. Pollen and Ovum
3. Pollination 4. Asexual 5. Spore
6. Fragments 7. Self – pollination.

C. Write 'T' for true and 'F' for false

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

D. Write very short answers for the following questions :

1. Male and female 2. Male gametes
3. Zygote 4. Yeast
5. Spores are formed for reproduction.
6. The various parts of a flower are stamen , pistil , sepals and pistils.
7. By leaves 8. By fragmentation

E. Write short answers for the following questions :

1. Vegetative propagation is used in horticulture.
2. Zygote is formed by fusion of male and female gamete.
3. The different types of pollination found in flowering plants are :
   a. **Self pollination :** When the pollen grains are transferred within the same flower or between the flowers of same plant.
   b. **Cross Pollination :** When the pollen grains are transferred between the flowers of different plants of the same species or a very closely related species.
4. The pollen grains produce male gametes for reproduction in plants.
5. Fertilization occur in the following steps:
   a. After pollination, pollen grains germinate on the stigma and pollen tube develops.
   b. The pollen tube grows downward into the style.
   c. The male gamete present in the pollen tube moves into ovule and fuses with female gamete inside the ovule.
6. The seeds are formed in the embryo by the transformation of ovule .

F. Write long answers for the following questions :

1. The flower comprise of following parts:
   a. **Sepals :** The sepals are green in colour and protect the flower , when it is in bud condition and support it when the flowers bloom.
   b. **Petals :** The petals are large and variously coloured to attract insects for pollination.
   c. **Stamen :** It is the male reproductive part and consists of two parts – the long narrow stalk – like filament and the upper , broader , knob – like anther . the anther lob consists of pollen sacs that contain millions of pollen grains.

d. Pistil : It is the female reproductive part and consists of a swollen ovary at the bottom. Inside the ovary , the ovules contain a lot bag called the embryo sac. The unripe seeds or eggs are present inside the sac.

For diagram see page no 91.

2. The post fertilization changes in flowers are :
   a. Bright colour of flower is lost.
   b. Except ovary all parts of flower fall off.
   c. Ovules in the ovary supplies food to the zygote which becomes ovary.
   d. Thus , the ovule transforms into seed.
   e. As the seeds form , the ovary increases in size and becomes fruit.
   f. The ovary wall becomes the fruit wall.
3. The different methods of vegetative propagation are as follows:
   a. **Vegetative propagation by stem:** in this method, a stem of plant is cut and is grown to produce new plant. For example : Grass , Strawberry, etc.
   b. **By root :** in this method, root of some plants can be used for growing plants. For example : Dahlia and Sweet potato.
   c. **By leaves:** in this method, leaves are used as a reproductive unit. For example : Bryophyllum

Think and Do

Do it yourself

Chapter – 10 Motion

A. Tick (✓) the correct answer :

1. c 2. c 3. d 4. d 5. c

B. Fill in the blanks :

1. Solar 2. Odometer
3. Maharaja Jai Singh II 4. Pendulum
5. Back 6. Speed

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Second 2. 1/60 3. Stopwatch
4. Continuous change in position of an object w.r.t its reference point.
5. m/s or km/h
6. vehicles moving with uniform speed.
7. linear , reciprocating , circular , irregular , oscillation, intermittent motion.
8. The initial point from which a body starts moving is called its reference point.

E. Write short answers for the following questions :

1. Non – living body does not move on their own , they need an external source of energy to move while living things move on their own .
2. A heavy mass suspended from a string which completes one to and fro motion in exactly the same time is called a pendulum. It is used in clocks
3. Speed of car = 65km/h
   Time taken = 20 minutes = 20/60 = 1/3 hours
   Distance = speed × time
   = 65 x 1/3 = 21.6 km
4. Pendulum , wrist watch
5. A quantity that can be measured is called a physical quantity. Speed , acceleration.
6. If the mass is allowed to swing through a small amplitude (an angle of 5 or less), its motion is almost exactly simple harmonic and its period of oscillation depends only upon the length of the pendulum and the acceleration due to gravity.
7. An object is said to be in motion if its position changes with respect to its reference point.

F. Write long answers for the following questions :

1. For graph see page no 102.
2. A body is said to have uniform motion if it covers equal distance in equal interval of time while if it covers unequal distance in equal interval of time or equal distance in unequal interval of time , then it is said to be in non- uniform motion.

   For example : Rotation of Earth (Uniform motion) , Motion of a vehicle (Non – Uniform motion)
3. The period between two events is called time. The standard unit of time is second. We can measure short time intervals by using stop watch.

4. The inaccuracy of measuring time by old systems led to the discovery of pendulum. Galileo Galilei discovered the pendulum which shows periodic motion. This technological application of the scientific principle of the periodic movement of pendulum led to the development of modern watches.
5. When a body travels in a straight line , the displacement covered by it is equal to the distance travelled by it.
6. Distance = 90 km
   Time taken = 75 minutes = 1.25 hour
   Speed of the train =
7. Its time period does not change.

Think and Do

Do it yourself

Chapter – 11 Electric Current and Circuits.

A. Tick (✓) the correct answer:

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

B. Fill in the blanks:

1. Two 2. Circuit 3. Repel & attract
4. Switch 5. Hans Christian Oersted
6. Inert gas 7. Fuse 8. Soft iron

C. Write 'T' for true and 'F' for false :

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

D. Match the following:

1.	Electromagnet	a.	Electric fuse
2.	Protective device	b.	Magnetic compass
3.	Electric bulb	c.	Joule heating
4.	Electric iron	d.	Solenoid
5.	Sailor	e.	Source of current
6.	Battery	f.	Volt
7.	Potential difference	g.	Inert gas

E. Write very short answers for the following questions :

1. Electric current. 2. Cell
3. Iron , heater , gyser , bulb
4. Electromagnet , electric bell
5. Tungsten

F. Write short answers for the following questions :

1. When the switch is open and the current does not flow through circuit , it is called open circuit while when the switch is closed and the current flows in the circuit , it is called closed circuit.
2. The heating effect of electric current while passing through a conductor is called joule heating.
3. An electric bulb requires a large amount of current and runs on high voltage. On the other hand, a LED requires a small amount of current and runs on a very low voltage.
4. An electric bulb get hot if it is switched on for a while because of heating effect of electric current.
5. A magnetic needle gets deflected when it is placed near a current carrying wire because of magnetic effect of electric current.

G. Write long answer for the following questions :

1. The unbroken path through which an electric current flows in the circuit is called electric circuit. When the switch is open and the current does not flow through circuit , it is called open circuit while when the switch is closed and the current flows in the circuit , it is called closed circuit.
2. There is a small bulb in the reflector and two or more cells in a torch. These cells are the source of electricity in a torch. When we press the switch, the circuit gets completed and the bulb glows.
3. Do it yourself (Activity 12.4 page no112)
4. A soft iron piece which is kept in a coil of wire and behaves as a magnet when electricity is passed through the wire is called an electromagnet. It is used in cranes, telegraphic and telephonic systems etc. The strength of an electromagnet can be increased by following ways:
   a. Increasing the number of turns of the coil per unit length.
   b. Increasing the amount of current supply.
   c. The nature of core material.
5. An electric bell works on the principle of electromagnetism. Electromagnets are used

in electric bells to pull a strip of iron with a hammer at the end of it. It is the electromagnetic attraction which makes the hammer hit the gong of the bell and produce the sound. When we press the switch of the bell , the electric current flows through the electromagnet. then the electromagnet attracts the iron strip. The hammer attached to the strip then hits the gong of the bell and produces sound. When the hammer hits the gong, the electric circuit breaks because a gap is produced between the iron strip and the terminal. The bell electromagnet develops a magnetic field , the iron strip is attracted, and the hammer hits the gong again. This process repeats itself as long as the switch is pressed.

Think and Do

Do it yourself

Chapter – 12 Natural Disasters

A. Tick (✓) the correct answer:

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

B. Fill in the blanks:

1. Flood 2. Trade 3. Electricity
4. INSAT 5. Disaster 6. Violently
7. Weaker

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Hurricane
2. Flood , earthquake , cyclone , drought , tsunami
3. Epidemic 4. Calm centre
5. By INSAT
6. Central water commission

E. Write short answers for the following questions :

1. Natural disasters are called natural calamities.
2. The violent winds blowing over large water bodies with an intense whirl causes cyclone
3. Earthquake is caused by sudden shaking of the tectonic plates below the earth's surface.
4. Heavy rainfall, change in a river's course causes flood.
5. The high temperature produced by charges makes the air expand that produces a crashing sound .

F. Write long answers for the following questions :

1. The precautions needed in the cyclone affected areas
   a. Keep an emergency kit ready at home .
   b. Store sufficient non perishable food items.
   c. Stay off the sea.
   d. Listen weather forecast to stay alert.
2. Hurricanes are formed in water bodies like oceans.
3. Moving air is called wind .
4. The movement of air is due to uneven solar heating of the earth's surface. It takes place at all scales , from local breezes generated by heating of land surfaces and lasting a few minutes to global winds resulting from solar heating of the earth.

G. Name the following :

1. cyclone 2. Typhoon
3. CWC 4. INSAT
5. Wind

Think and Do

Do it yourself

Chapter – 13 Light

A. Tick (✓) the correct answer:

1. d 2. c 3. b 4. c

B. Fill in the blanks

1. Light 2. Image 3. 7
4. Far 5. Same

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Convex and concave 2. At F
3. Image that can be formed on a screen are called real image while image that cannot be formed on a screen is called virtual image .
4. Concave 5. Diffused
6. Plane and spherical

7. Smooth or diffused
8. When the rays of light fall on smooth flat surfaces such as mirrors , they bounce back making a similar pattern . it is called a regular reflection.

   When the rays of light fall on rough uneven surfaces such as our clothing, the reflection of light takes place in an irregular diffused manner. This is called an irregular reflection.

E. Write short answers for the following questions :

1. The laws of reflection are as follows:
   a. The angle of incidence is always equal to the angle of reflection.
   b. The incident ray, the reflected ray and the normal , at the point of incidence , all lie on the same plane.
2. Do it yourself (activity 14. 1 page no 127)
3. Do it yourself (activity 14.7 page no 132)
4. Light is a form of energy which provides us sensation of sight. It is used to see objects .
5. When the rays of light fall on smooth flat surfaces such as mirrors , they bounce back making a similar pattern . it is called a regular reflection.

   When the rays of light fall on rough uneven surfaces such as our clothing, the reflection of light takes place in an irregular diffused manner. This is called an irregular reflection.

F. Writ long answers for the following questions :

1. Convex mirrors are spherical mirrors which produce erect , diminished and virtual image . this is generally used in automobiles. For diagram see page no132
2. Do it yourself (Activity – 14.11 page no 137)
3. The uses of concave and convex mirrors are as follows:
   a. Concave mirrors are used in torches and cars headlights to reflect the light of the bulb to form a powerful beam of light.
   b. Concave mirrors are also used by dentists to see the magnified the image of teeth.
   c. Convex mirrors are used as rear – view mirrors in vehicles.
4. A plane mirror is a smooth plane without any divergence or convergence .

   A concave mirror is the mirror that curves in , like the interior of a sphere.

   A convex mirror is the mirror that curves outwards, like the exterior of a sphere.
5. Do it yourself (Activity 14.9 page no 135)
6. Reflected ray is the incident ray after reflection at the point of incidence .

   Angle formed between reflected ray and normal is angle of reflection.

   The point at which the incident ray strikes the surface is called the point of incidence.

Think and Do

Do it yourself

Chapter – 14 water

A. Tick (✓) the correct answer

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

B. Fill in the blanks

1. Oxygen 2. Universal 3. 100˚C& 0˚ C
4. Sewage and agricultural waste and industrial waste
5. Jaundice , cholera & typhoid
6. Carbon – dioxide & oxygen
7. Rain water 8. Natural spring
9. Lighter 10. Hydrogen & oxygen

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Water table 2. Solid , liquid and gas
3. Sodium salts , chlorine salts
4. Using the dissolve oxygen
5. Rain 6. Because of shrinkage
7. When water gets contaminated by harmful pollutants , it is called water pollution.

   The sources from which we get water are called sources of water.

   Preservation of water is water conservation.

E. Write short answer for the following questions :

1. The main sources of water pollution are sewage , domestic waste , agricultural waste , industrial waste etc.
2. Uses of water are :

a. It is used for drinking and cooking.
b. It is used for bathing.
c. It is used in industries for many purposes.
d. It is used for irrigating fields.

3. Because it can dissolve any solute in it.
4. Excessive use of water and lack of rainfall results in the lowering of water table.
5. Sometimes, the ground water runs along the surface of the non – porous rocks and comes out of the earth's surface at some places and form natural spring.
6. Drinking water can be contaminated even in covered drainage system by the growth of microorganisms because of leakage in water pipes.
7. The soap and detergents in domestic sewage are non – biodegradable. Excreta and cattle dung also contain several harmful microbes that can cause disease.

F. Write long answers for the following questions :

1. The major sources of water are:
   a. **Oceans :** These are biggest source of water and store million litres of water. About71% of the earth's surface is covered with oceans and contains 97% of earth's total water.
   b. **Rain water :** it is the purest form of water . It is also one of the major source of water.
   c. **Surface water :** A part of rainwater that runs off on the surface of the earth is called surface water.
   d. **Ground water :** a part of rain water that seeps into the ground through soil and collects over non porous rock is called ground water.
2. Some ways of water conservation are as follows:
   a. Avoid washing off chemicals in water.
   b. Avoid bathing, washing clothes near water bodies.
   c. Avoid washing off fertilizers in water.
   d. Use Rain water harvesting.
   e. Try to recycle water.
3. Although , water is most obedient on the earth , yes we need to conserve it.
4. Some ways of controlling water pollution are as follows:
   a. Avoid washing off chemicals in water.
   b. Avoid bathing, washing clothes near water bodies.
   c. Avoid washing off fertilizers in water.
   d. Aware the people about conservation programmes.
   e. Government should make strict rules on polluting water by industries.
5. The main cause of water pollution are domestic waste, sewage, petroleum and petrochemicals, agricultural waste, industrial waste, etc.

   The effects of impure water on living organisms are as follows:
   a. It can cause fluorosis and affect our bones and teeth.
   b. It can also delays normal physical and mental development of the human body.
   c. It causes jaundice, typhoid like death causing diseases.
   d. It can also be dangerous for aquatic life.

Think and Do

Do it yourself

Chapter – 15 Forests

A. Tick (✓) the correct answer :

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

B. Fill in the blanks:

1. Root 2. animals 3. Oxygen
4. Flavor 5. Fibres 6. Omnivores

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Turmeric , clove , cinnamon etc.
2. The inter relationship between producers and consumers for food.
3. The flow of energy in food chain.
4. Grass grasshopper frog snake eagle
5. Mustard , sunflower , coconut , etc.

E. Write short answers for the following questions :

1. They provide essential things like medicines,

oils , spices , fruits and vegetables etc.

2. Instead of cutting all the trees in an area , only trees should be cut so that the remaining trees could not prevent erosion and produce seeds. This is called planned harvesting.
3. Planting of trees in large number is called afforestation.
4. Sanctuaries are established to protect the animals from poaching.
5. Plants and animals are interdependent on each other in several ways. Plants give out oxygen which is utilized by animals for oxidation of food , burning of substance etc. who in turns release carbon– dioxide which is used by plants during photosynthesis.

F. Write long answers for the following questions :

1. Plants and animals are interdependent on each other in several ways. Plants give out oxygen which is utilized by animals for oxidation of food , burning of substance etc. who in turns release carbon– dioxide which is used by plants during photosynthesis.
2. Grass grasshopper frog snake eagle. In this food chain, grass is a producer which is eaten by grasshopper which is further eaten by frog. The frog is then eaten by snake and the snake is eaten by eagle.
3. Humans have cut trees at a large scale and poaches animals for their benefit. Cutting down of trees would lead to loss of habitat for animals. This also can cause soil erosion and disturbs the natural cycling of rain.

G. Name the following:

1. Forest 2. Food chain
3. Producers 4. Scavengers
5. Food web

Think and Do

Do it yourself

Chapter – 16 Waste management

A. Tick (✓) the correct answer :

1. a 2. a 3. b

B. Fill in the blanks:

1. Domestic 2. Healthy 3. Pathogens
4. Sand 5. Solid

C. Write 'T' for true and 'F' for false :

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

D. Write very short answers for the following questions :

1. Sewage generated from houses.
2. Polluted water
3. The treatment of solid waste .
4. An excellent soil conditioner which is used as fertilizer or farm land.

E. Write short answers for the following questions :

1. Drainage is important to live a healthy life style .
2. Open drains are harmful because they attract flies which can carry microbes to humans and cause illness.
3. Untreated sewage water is a major source of groundwater contamination. it can cause several diseases.
4. A storm drain start as a catch basin in the street. Its purpose to catch rain water and carry it away via storm drain pipe from developed areas to prevent them from flooding.

F. Write long answer for the following questions :

1. Rain water is disposed off separately as it does not have many harmful pollutants. It can easily be treated for the purpose of drinking and many other purposes.
2. Preliminary treatment → primary treatment secondary treatment → final cleansing and disinfection.
3. Bacteria is used in sewage treatment to make sludge suitable for use on agricultural land. Bacteria on getting favourable conditions multiplies and treated sludge.
4. Here are nine ways you can preserve and protect local watersheds:
   a) Plant a rain garden. Excess runoff can cause flooding and stream-bank erosion during rainstorms. ..
   b) Limit fertilizer. ...
   c) Service your septic system every three years.
   d) Avoid pesticides. ...
   e) Pick up pet waste. ...
   f) Buffer streams. ....
   g) Use commercial car washes. ...
   h) Avoid paving.

Think and Do

Do it yourself

Model Test Paper – 2

A. Tick (✓) the correct answers:

1. a 2. d 3. c 4. c
5. c 6. d 7. c

B. Fill in the blanks:

1. Sand 2. Pollination 3. 24
4. Two 5. Universal 6. Roots
7. Flood 8. 7

C. Write 'T' for true and 'F' for false :

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

D. Match the following:

1.	Electromagnet	a.	Electric fuse
2.	Protective device	b.	Magnetic compass
3.	Electric bulb	c.	Joule heating
4.	Electric iron	d.	Solenoid
5.	Sailor	e.	Source of current
6.	Battery	f.	Volt
7.	Potential difference	g.	Inert gas

E. Write very short answers for the following questions :

1. An excellent soil conditioner which is used as fertilizer or farm land.
2. For reproduction
3. The inter relationship between producers and consumers for food.
4. 1/60 5. Cell
6. Sodium , chlorine
7. Image that can be formed on a screen are called real image while image that cannot be formed on a screen is called virtual image .
8. Heavy rainfall, change in a river's course causes flood.

F. Write short answer for the following questions :

1. A storm drain start as a catch basin in the street. Its purpose to catch rain water and carry it away via storm drain pipe from developed areas to prevent them from flooding.
2. Fertilization occur in the following steps:
   a. After pollination , pollen grains germinate on the stigma and pollen tube develops.
   b. The pollen tube grows downward into the style.
   c. The male gamete present in the pollen tube moves into ovule and fuses with female gamete inside the ovule.
3. Light is a form of energy which provides us sensation of sight. It is used to see objects .
4. Uses of water are :
   a. It is used for drinking and cooking.
   b. It is used for bathing.
   c. It is used in industries for many purposes.
   d. It is used for irrigating fields.
5. Planting of trees in large number is called afforestation.
6. A heavy mass suspended from a string which completes one to and fro motion in exactly the same time is called a pendulum. It is used in clocks
7. The heating effect of electric current while passing through a conductor is called joule heating.
8. Earthquake is caused by sudden shaking of the tectonic plates below the earth's surface.

G. Write long answers for the following questions :

1. Rain water is disposed off separately as it does not have many harmful pollutants. It can easily be treated for the purpose of drinking and many other purposes.
2. Plants and animals are interdependent on each other in several ways. Plants give out oxygen which is utilized by animals for oxidation of food , burning of substance etc. who in turns release carbon – di – oxide which is used by plants during photosynthesis.
3. Some ways of controlling water pollution are as follows:
   a. Avoid washing off chemicals in water.
   b. Avoid bathing, washing clothes near water bodies.
   c. Avoid washing off fertilizers in water.
   d. Aware the people about conservation programmes.
   e. Government should make strict rules on polluting water by industries.

4. The post fertilization changes in flowers are :
   a. Bright colour of flower is lost.
   b. Except ovary all parts of flower fall off.
   c. Ovules in the ovary supplies food to the zygote which becomes ovary.
   d. Thus , the ovule transforms into seed.
   e. As the seeds form , the ovary increases in size and becomes fruit.
   f. The ovary wall becomes the fruit wall.
5. The period between two events is called time. The standard unit of time is second. We can measure short time intervals by using stop watch.
6. There is a small bulb in the reflector and two or more cells in a torch. These cells are the source of electricity in a torch. When we press the switch, the circuit gets completed and the bulb glows.
7. The uses of concave and convex mirrors are as follows:
   a. Concave mirrors are used in torches and cars headlights to reflect the light of the bulb to form a powerful beam of light.
   b. Concave mirrors are also used by dentists to see the magnify the image of teeth.
   c. Convex mirrors are used as rear – view mirrors in vehicles.
8. The movement of air is due to uneven solar heating of the earth's surface. It takes place at all scales , from local breezes generated by heating of land surfaces and lasting a few minutes to global winds resulting from solar heating of the earth.

H. Name the following :

1. Cyclone
2. Typhoons
3. Producers
4. Scavengers .