Exploring Science – Class – 4

Chapter 1 :

A. 1. We get food, fuel and oxygen from plants.
2. The stalk or stem that connects the leaf to the plant is petiole.
3. Plants store their extra food in leaves, stems and roots.
4. (i) Mushrooms get their food from dead and decaying plants and animals.
ii) Dodder(Amarbel) get their food from other green plants through special roots penetrated in to the host plant.
iii) Cactus contains chlorophyll in its stem. The process of photosynthesis occur in its stem.
5. Plants use the food in a number of ways.
- For survival and growth.
- Repair worn-out cell and build new cells.

B. 1. A leaf is an outgrowth from a node on a plant stem.
2. The tip of a leaf opposite to the petiole is called apex.
3. Mushroom and Croton.

C. 1. 3 2. 5 3. 3 4. 3

D. 1. iv 2. ii 3. iii

E. 1. Photo means light and synthesis means putting together.
2. The expanded portion of a leaf is lamina.
3. Chlorophyll is a green pigment that exists in cells.
4. The small openings of the lowest layer of cell.

Think it over[HOTS]

1. Process of photosynthesis cannot be done without light. So, the plant turn pale when it is kept in dark.
2. Yellow leaves will not have chlorophyll in them to prepare food on their own.

Chapter 2 :

A. 1. Plants develop special features to adapt themselves to the surroundings. This process is adaptation.
2. Plants that grow on land are called terrestrial plants. Ex: Pine tree, Spruce tree, Mango tree.
3. The types of aquatic plants are floating plants, emergent plants and totally submerged plants.
Floating plants Ex: Water Lilly
Emergent plants Ex: Cattail
Totally submerged plants Ex: Pond weed.
4. The plants which grow near the sea-shore in marshy areas. Mangrove trees have breathing roots.
5. As the cactus has no leaves loss of water is reduced during photosynthesis. The green fleshy stem contains chlorophyll and makes food. Long root stem spread out wide or go deep into the ground to absorb water even in deserts.
6. Coniferous trees grow in cold and hilly places. They have needle-like leaves. The needles are coated with wax which prevents the loss of water. The needle-like structure of leaves makes snow slide off easily.

B. 1. The plants that grow and remain in water are called Aquatic Plants.
2. The plants which eat insects are known as carnivorous plants.
3. The roots grow out of the soil and water to breathe are called breathing roots.
4. Teak and Rubber trees are evergreen.

C. 1. aquatic 2. Terrestrial 3. snow 4. Mangrove 5. cactus, palm

D. 1. 3 2. 5 3. 3 4. 3 5. 3

E. 1. c 2.c 3. c 4. c

F. 1. INSECTIVOROUS 2. ADAPTATION
3. TERRESTRIAL 4. AQUATIC

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

Think it over[HOTS]

1. The lack of leaves of cactus helps reduce water loss. Long root system of cactus spread out wide and deep into the ground to absorb water. But paddy plants have leaves and no long roots to grow in deserts.

Chapter 3 :

A. 1. Adaptation means adjust according to environment.
2. All animals are adapted to live at a certain place. The place where an animal lives is called its habitat. Some habitats of different animals are desert animals. Polar animals, grassland animals.
3. Because they don't have a constant body temperature. They adjust themselves with the temperature of environment. During cold weather inactiveness occurs called hibernation.
4. Camel's feet are wide, so they can walk on sand more easily. It can travel for more than a week without drinking water and can last for several months without having food.
5. The distinct feature of animals enable them to protect themselves. Ex. Some insects copy the shape, colour and habits of other animals.

B. 1. The period of inactivity in amphibians in the hot and dry weather is called estivation.

2. The period of inactivity occurs in cold weather in amphibians is called hibernation.
3. Camouflage is method used by animals to blend their colour with the environment.
4. Organisms that live by drawing food from a host organism are called parasites.
5. The animals live on trees and tend to have long tails for maintaining their balance are arboreal animals.
C. 1. fur, fat 2. gills 3. water, land 4. shells
5. sleep
D. 1. 5 2. 3 3. 3 4. 5 5. 3
E. 1. b 2. d 3. d F. 1. d 2. c 3. a 4. b
Think it over[HOTS]
1. Arboreal animals usually have long tails to maintain their balance as they live on trees.
2. Dinosaurs could not adapt themselves according to their changing environments.

Chapter 4 :
A. 1. The process thought by which the living beings produce their young ones of their own kind is called 'reproduction'.
2. In order to maintain life forms on the earth, each living being has to reproduce its own kind. Life cannot exist on the earth if living things do not reproduce.
3. Some animals give birth to young ones and others lay eggs.
4. Mammals feed their young ones, clean them, keep them safe until they learn to look after themselves.
5.
B. 1. Mammals 2. Three stages 3. The mother bird keeps the egg warm by sitting on it. This process is called incubation.
C. 1. pupa 2. yellow 3. Bat 4. spawn 5. tadpole
D. 1. 3 2. 3 3. 3 4. 3 5. 5
E. 1. a 2. a 3. c F. 1. d 2. a 3. c 4. b
Think it over[HOTS]
1. A little chick is the own kind of its mother hen. So, it resembles its mother hen.
2. Many reptiles like snake and turtle do not care for their eggs or babies.

Chapter 5 : Food and Degistion
A. 1. The process of breaking down food into a simple and soluble form so that the body can use it. This process is digestion.
2. Water helps in digestion. It helps in dissolving nutrients that are to be used up by the body. Water regulates the body temperature.
3. The strong muscles of the stomach use enzymes to further break down food into a usable form. Till this process stomach holds food.
4. In small intestine food is broken down using enzymes released by the pancreas and bile from the liver. The contents of the small intestine start out as semi-solid food end-up in a liquid form.
5. The course of flushing out the undigested food through the Anus is known as defecate.
B. 1. Egg, meat and fish are body building foods.
2. Butter, ghee and nuts are enrygy giving foods.
3. Anus.
4. Sugar, Starch and fibre are three main types of carbohydrates.
C. 1. mouth 2. large 3. rectum 4. bile, fats 5. gall bladder, pancreas.
D. 1. 3 2. 5 3. 5 4. 3 5. 3
E. 1. a 2. c 3. c
F. 1. d 2. c 3. a 4. b
Think it OVER[HOTS]
1. Proteins are used by the body to make muscles, organs and other tissue such as skin and hair. So, proteins are needed to a child more than an old person.
2. Usually mangoes are unavailable in winter season. This Crop is available in summer. But preservation of mangoes in way of canning through makes it possible.

Chapter 6 : Teeth and Dental Care
A. 1. Incisors - These are eight. These are used for cutting and chopping.
Canines - These are four. They help tear food.
Premolars - These are also four. These are used for chewing and grinding food.
Molars - There are eight molars in the mouth. They work closely with the tongue to help swallow food.
2. At the age of 6 years, milk teeth start falling as they are not permanent. Permanent teeth replace them. So, milk teeth also called temporary teeth.
3. Germs can grow and form a sticky yellow layer called plaque. To remove this plaque we have to brush our teeth properly.
4. We should visit a dentist regularly for check-up.
5. 1) Brush the teeth atleast twice a day.
2) Rinse the mouth well after taking food.
3) Clean the tongue to remove germs, which attack teeth.
B. 1. 20 Teeth 2. 32 Teeth 3. Bicuspid teeth
4. There are 8 incisors and 4 canines are there in a permanent teeth set.
C. 1. eight 2. incisors 3. calcium 4. enamal

D. 1. 3 2. 5 3. 5 4. 5
E. 1. a 2. b 3. c
F. 1. d 2. a 3. e 4. b 5.c
Think it OVER[HOTS]
1. Incisors. 2. About 3,333 sets of teeth a shark will have in its life time. 50,000 total teeth in a maximum of 15 Rows in its entire life time.

Chapter 7 : The Right Clothes to Wear
A. Basically the need of clothes are protecting our body from rough surfaces, insect bites, thorns and prickles. They protect us from ultraviolet surfaces of Sun, cold, dust and rain. Clothes are for social implications also.
2. People wear specific clothes to do specific tasks. This specific dress is known as uniform.
3. Natural fibres come from plants and animals. Synthetic fibres are Man-Made.
4. We wear dark-coloured clothes made of wool in winter.
5. Insects like moths and silver fish attack woollen clothes and silk clothes. So, they should be kept under the sun for some time.
B. 1. 1) Natural 2) Synthetic
2. 1) Cotton 2) Linen

3. 1) sheep 2) silkworm
4. 1) viscose 2) Acrylic
C. 1. clothes 2. uniform 3. cotton 4. natural
D. 1. 5 2. 5 3. 5 4.5 5. 3
E. 1. b 2. c 3. b 4. d 5. b
F. 1. e 2. d 3. a 4. b 5. c
Think it OVER[HOTS]
1. Police, doctor, lawyer, soldier, post-man
2. Fibre blending

Chapter 8 : Safety and First Aid
A. 1. a) Always walk on foot-path. If it is not walk on the left margin.
b) Cross the road only from a zebra crossing.
c) Never play on road.
d) Never keep your head or hand out of window of moving vehicle.
2. Observe the walk signal and cross only when it is green. Stop look left then right and then again left before crossing road. Only walk, do not run while crossing the road.
3. In case of an accident proper care of the victim should be taken before the doctor arrives. This is known as first aid.
For burns dip the burnt part in cold water or hold the part under running water for some time.
4. If an insect bites, never pinch. Wash the area thoroughly with fresh water. Put some soothing cream. Use a soft pad soaked in ammonia water for relief. Apply calamine lotion if there is itching at the sting spot.
5. Wear cotton clothes while standing near the cooking stove. Extinguish a used Match-stick before throw it away. Store petrol and kerosene safety. Turn off the gas stove and regulator when they are not in use.
6. Never run if clothes catch fire. Stop and cover face with hands. Drop the ground. Roll on floor.
B. 1. Anti tetanus 2. Do not 3. foot path 4. minor 5. prevention
C. 1. 5 2. 5 3. 3 4.5 5. 3
D. 1. a 2. c 3. c 4. c
Think it OVER[HOTS]
1. Soap, shampoo, etc. are poisonous because they have harmful chmical in them to kill pests and germs so these should be kept separately from grocery items like jam.
2. First dip the burnt finger in cold water and keep in for some time. Then apply burnol such as burn-cure creams.

Chapter 9 : Our House
A. 1. We all need houses to live in as they protect us from heat, cold, rain, wild animals and thieves.
2. In remote areas and mountains, houses are made of locally available material. Such houses are called Kutcha houses.
3. A caravan is a house of wheels. It is a movable house. It can be parked anywhere like a car.
4. Eskimos are the people live in the coldest regions. In winters these regions are covered with snow. So, Eskimos build igloos from the blocks of snow or ice.
5. A good house should have all the things need to make it safe and comfortable. It should have doors and windows to let the fresh air and sunlight in. It should have enough sunlight to kill germs and keep the rooms dry.
B. 1. Huts 2. Caravan is of wheels.
3. We need doors and windows in a house to let the fresh air and sunlight in. 4. Because phenyl is a germ killer,
Think it OVER[HOTS]
1. In large lake areas people live in water only in

floating house boats. Tourists from all over the world come and stay in house boats.
2. Diaster victims live in tents.
C. 1. stilt 2. dustbin 3. snow 4. flooded 5. house
D. 1. 5 2. 3 3. 3 4.5
E. 1. d 2. a 3. d 4. d 5. d
F. 1. e 2. a 3. d 4. b 5. c

Chapter 10 : The Changing Weather

A. 1. Weather refers to the short-term atmospheric conditions that we see at any one moment.
2. Temperature, air pressure, moisture, cloud and wind are the elements that determine the weather condition.
3. When air moves, it is called wind and a strong wind is called storm.
4. Wind blows from the sea towards the land is known as sea breeze.
5. Condensation is the opposite of evaporation. It takes place when water vapour in the air condenses from its gaseous state, back into its liquid state.
B. 1. Humidity. 2. Atmosphere 3. A very strong wind is called storm. 4. Upper surface of ground_water below which soil is saturated with water that fills up all cracks is known.
C. 1. Carbondioxide, ozone 2. Land breeze
3. Sea breeze 4. air 5. dew point
D. 1. 3 2. 5 3. 3 4.5
E. 1.b 2. c 3. b
Think it OVER[HOTS]
1. Air consists of many gases. It's a mixture of nitrogen, oxygen, carbondioxide. When the air moves it is called wind.
2. Fog is a cloud that gets formed near the surface of the earth.

Chapter 11 : Matter and Materials

A. 1. Object that occupies space and has weight is called "Matter".
2. Atoms are the common properties of Matter.
3. Molecules are arranged in a regular pattern in a solid touching each other.
4. Solid,liquid and gas are 3 different states of water.
5. a) Liquid water changes to solid ice at temperature below zero degree celsius. This process is called freezing.
b) When ice is heated, it changes into water. This process is called melting.
c) When water is boiled at high temperature, it gets changed into water vapour. This process is called evaporation.
d) When water vapour changes into water on cooling, it is called condensation.
e) The process by which solid directly gets turned into the gaseous form on heating is called sublimation.
B. 1. Matter. 2. Solid 3. Solid iodine 4. Soda
5. Water
C. 1. space, weight 2. atoms 3. molecule
4. solid,liquid, gas 5. regular 6. attractive
7. matter
D. 1. 3 2. 5 3.5 4. 3 5.5
E. 1.b 2. b 3. c 4. a 5. c
Think it OVER[HOTS]
1. Gases spread out quickly to fill the space available to them. So the smell of roses spreads out and fills up the room.
2. Gas can be stored in a container by turning it into liquid.

Chapter 12 : Work, Force and Energy

A. 1. A force is a push or pull. It is necessary to move or stop, change direction.
2. The force of the ground which pulls all towards it is called gravity.
3. Friction is an invisible force that acts when two things rub against each other. It is useful to reduce or stop the motion of an object.
4. Work is said to be done only when an object moves over a distance applying force, as per the definition in words of sceince.
5. Wedge is a simple machine used for pushing two objects apart. It is made of two inclined planes.
6. Energy is the ability to do work. Sources of energy are Solar energy, Atomic energy, Geothermal energy.
B. 1. gravity 2. friction 3. knife 4. the sun
5. energy.
C. 1. force 3. Machines more 4. Leaver 5. wind
6. wedge 7. buoyany
D. 1. 5 2. 3 3.5 4. 3 5.3 6. 3
E. 1.c 2. c 3. b 4. b
Think it OVER[HOTS]
1. The method of using scissors would be advised. Because using scissors is easier than using hands in tearing a paper. More over scissors cut the paper in a lining order which hands cannot.
2. The action of playing cricket needs more energy because it needs the work of all organs when running, catching, throwing, picking, handling and shouting, doing homeworks needs none.

Chapter 13 :Our Planet Earth

A. 1. Crust is the hard outer layer made of solid rock which the earth consists of.
2. The movement of the earth around itself an invisible axis is known as rotation. It takes 24 hours to finish one complete rotation to the earth.
3. The movement of the earth around the sun is revolution. One revolution takes 365 days and 6 hours or 1 year.
4. The causes of change in seasons are due to movement of the earth that are in two ways.
1. rotation; 2. revolution. These two movements create variations in temperature, weather and seasons.
5. Air is a synonym for atmosphere. The atmosphere of our planet is made up of three primary gases that are oxygen, nitrogen and Argon.
B. 1. The line at which the earth and the sky appears to meet is called the Horizon.
2. Ferdinand Magellan 3. Crust, core, Mantle.
4. If stand at any point of the earth's surface and look up, will see a huge bowl which is called sky.
C. 1. Mantle 2. rotation 3. orbit 4. sun
D. 1. 5 2. 5 3.3 4. 3 5.3
E. 1. a 2. c 3.b 4. a
F. 1. d 2. a 3. e 4. b 5. c
Think it OVER[HOTS]
1. Rotation of the earth causes day and night.

Chapter 14 : Study of Nature

A. 1. The cutting down of trees without planting others in their place is called deforestation.
2. For every tree that is cut, three trees should be planted. All must reduce dependence on charcoal as a source of fuel, instead of which use wind power or solar energy.
3. Pollution means the addition of harmful substances cause harm or discomfort to human beings. The harmful substances are called pollutants.
4. Pollutants from factories, refineries and water treatment plants, pesticides, fertilisers from agricultural fields; addition of soaps, detergents and chemicals; garbage and thrown dead bodies; Human sewage; bathing of animals, washing clothes lead to water pollution.
5. Reduce, reuse and Recycle are three methods to control pollution.
B. 1. The harmful substances are called pollutants.
2. Planting trees in large numbers is called afforestation.
3. World Environment Day is celebrated on June 5 every year.
4. The addition of harmful substances like sulphur dioxide, carbon dioxide, carbon monoxide etc. into air is called air pollution.
5. The addition of harmful substances like pesticides, fertilizers, garbage, dead bodies into water is known as water pollution.
C. 1. deforestation 2. planting 3. garbage 4. use and throw
D. 1. 3 2. 3 3.5
E. 1. b 2. c 3. a