Science

Chapter No. 1
Human Organ Systems

Short Questions.

Q1. How does carbon dioxide produce in our body?

Ans: Carbon dioxide produce in our body by exhaling process.

Q2. How is small intestine important in our digestive system?

Ans: Final digestion of carbohydrates, fats and proteins occurs in the small intestine.

Q3. What are alveoli?

Ans: At the end of the each bronchiole, tiny air sacs called alveoli are present.

Q4. What is breathing?

Ans: Breathing is the process that moves air in and out of the lungs.

Long Questions.

Q1. Describe the human respiratory system?

Ans: Our respiratory system consists of the nose and throat, the wind pipe (trachea), the breathing muscles and the lungs.

Nose and Throat: The air enters through our nose or mouth. Our nose has hair and mucous to clean, moisten and warm the air, Mucous is a sticky liquid. The air enters the throat and passes through the larynx.

Trachea (Windpipe): Air passes from the layrnx into the traches or windpipe. Our windpipe is made of C-shaped rings of cartilage.

Bronchi and Lungs: The trachea divides into two branches called bronchi (singular bronchus) Bronchi carry air into the lungs. In each lung the bronchus divides into smaller tubes called bronchioles. At the end of each bronchiole, tiny air sacs called alveoli are present. The red blood cells carry this oxygen to every cell of our body. Cells in our body use oxygen and food to produce energy and carbon dioxide.

Q2. Write note on the following.

(i) Constipation (ii) Pneumonia

Ans: Constipation: Constipation is the painful or difficult passing of faeces. Constipation is caused by not drinking enough water, delay in going to washroom.

(i) Adopting a proper lifestyle.
(ii) Taking regular exercise.
(iii) Drinking of water (at least 8 glasses everyday)
(iv) Going to the washroom when we have the urge.

Pneumonia: Pneumonia is an infection that affect the lungs. When a

person has pneumonia, the alveoli are filled with pus, which make breathing painful. Common symptoms of pneumonia are cough, fever, nasal congestion, rapid breathing with wheezing sound, chest pain, loss of appetite, etc. Visit your doctor as soon as possible to treat pneumonia.

Keep your lungs healthy!

(i) Vitamins keep our lungs healthy.
(ii) Exercise like running, swimming are good for our lungs.
(iii) Leafy green vegetables contain such chemicals that are good for our lungs.

Chapter No. 2
Transport in Humans and Plants

Short Questions.

Q1. What do you mean by oxygenated blood?

Ans: Oxygenated blood means, oxygen rich in blood.

Q2. What is the estimated size of our heart?

Ans: The estimated size of our heart is about the size of our fist.

Q3. Which arteries carry deoxygenated blood from heart to the lungs?

Ans: Pulmonary Arteries.

Q4. Name at least two diseases that can damage our kidneys?

Ans: (i) Diabetes (ii) Hypertension

Q5. Which tissue does transport water in plants?

Ans: Xylem tissues.

Long Questions.

Q1. Describe the structure of human heart?

Ans: Our heart is a muscular organ about the size of our fist. The heart is found in our chest. It pumps oxygen poor blood (deoxygenated blood) to the lungs and oxygen-rich blood. (Oxygenated Blood) to the body. There are four chambers in our heart, two upper chambers called atria and two lower chamber called ventricles.

The ventricles of our heart are larger than the atria. Both atria contract at the same time. The blood passes from the atria into the ventricles. There is a valve between each atrium and ventricle on the both sides of the heart. These valves keep the blood flowing in one direction. Deoxygenated blood from the body enters the right atrium and oxygenated blood from the lungs enters the left atrium of our heart. The right ventricle pushes the blood to the lungs and the left ventricle pushes the blood to the body.

Q2. Compare the structures and functions of blood vessels.

Ans: The blood travels throughout the body through vessels. The three types of

blood vessels are arteries, capillaries and veins.

Arteries: Arteries are the blood vessels that carry blood away veins from the heart. Most of the arteries carry oxygenated blood. Arteries divide many times to smaller tubes, called capillaries.

Capillaries: Capillaries are the smallest blood vessels in the body. They are so small that red blood cells flow through them one cell at a time. Capillaries again join to form the larger blood vessels called veins.

Veins: Veins are the blood vessels that bring blood back to the heart but pulmonary veins bring oxygenated blood from the lungs to the heart.

Chapter No. 3
Reproduction in Plants

Short Questions.

Q1. Differentiate between asexual and sexual reproduction.

Ans: Sexual: When two gametes one from each parent combine to form a zygote, the process is called sexual reproduction.

Asexual: The type of reproduction in which a cell from only one parent develops into offspring is called asexual reproduction.

Q2. What are the male and female parts of a flower?

Ans: Male part of flower is stamen and female part of flower is carpel.

Q3. Define pollination?

Ans: The transfer of pollen grains from the anther of a flower to the stigma of the carpel is called pollination.

Q4. Name a few pollinators.

Ans: Wind, Animals, water etc.

Long Questions.

Q1. Write a detailed note on pollination in plants?

Ans: The transfer of pollen grains from the anther of a flower to the stigma of the carpel is called pollination. With the help of this process, the male sex cell (sperm) reaches to the female sex cell (egg). Sex cells are also called gametes. Wind, insects, animals and water are the agents for pollination in different plants.

Q2. Explain fertilization in plants.

Ans: The surface of the stigma in a flower is sticky and pollen grains stick to it. Two sperms are present in his pollen tube. The tube grows downward through the style and enters the ovary one of the sperms combines with the egg to form zygote. The other sperm combines with another cell to make the store of food. The process of fusion of sperm with the egg is called fertilization.

Q3. Describe the structure of seed?

Ans: After fertilization an ovule becomes a seed. The embryo and its store of food

are covered by a tough seed coat. The most important part of a seed is its embryo.

Plumule: This part of the embryo develops into the first shoot (stem) of the new plant.

Radicle: This part of the embryo develops into the first root of the new plant.

Cotyledons: This part of the embryo supplies food to the growing young plant.

Chapter No. 4
Environment and Feeding Relationships

Short Questions.

Q1. What kinds of organisms are at the start of most food chains?

Ans: Organisms eat organisms and are in turn being eaten by others. This feeding relationship among organisms is called a food chain.

Q2. Name biotic factors of an ecosystem.

Ans: Plants, animals and microorganisms.

Q3. How are producers, consumers and decomposers related to each other?

Ans: Due to food relation.

Q4. Define an ecosystem.

Ans: A system formed by the interaction of living organisms and non-living things in an environment is called an ecosystem.

Long Questions.

Q1. What is the habitat? Describe its few kinds.

Ans: Kind of Habitats

1. The Grassland Habitat: Grassland is a grassy, windy, partly-dry area. These areas receive a medium amount of rain. The soil found here is very fertile. Grasses are the producers in a grassland habitat. Mostly grazing animals like the sheep goats, cows, antelopes, buffaloes, and deer are a few examples that are found in a grassland.

2. The Pond Habitat: A pond is an aquatic habitat which is rich in life. Plants like algae, duckweed, water lily, etc. are found in water. The animals like fishes, snails frogs and microscopic organisms also found in the pond habitat.

3. The Desert Habitat: Deserts are the driest land areas. They receive very little rainfall. Cacti, euphorbia, lizards, snakes, kangaroo rats, camels, etc. are found in a desert habitat.

4. The Rainforest Habitat: Rainforest are always wet. They receive rain the whole year. A large number of plant types (herbs, shurbs and trees) is found here. Several varieties of butterflies, snakes, lizards, frogs, parrots, cockatoos,

humming birds, cats and jaguars are also found in this habitat.

Q2. Describe factors that are bring daily and yearly changes in habitat.

Ans: We know that light, temperature, air, soil and water are abiotic factors of the environment. Sunlight is the basic source of energy on the Earth. Plants use light energy to make their own food. All forms of life on the Earth depend directly or indirectly on green plants. Decrease in number of plants may result in the decrease of animal's number in the habitat. Temperature can also change in the population of a habitat. Fall in temperature may disturb the habitat. **For example**: warm water contains less oxygen. Water is essential for life. Where there is more water more organisms are found there. Migration is another factor that changes the size of population of a habitat.

Chapter No. 5
Water

Short Questions.

Q1. Why is fresh water important?

Ans: All living things need water to live. Plants fish, insects, birds and another animals all need water to grow.

Q2. Where is most of the fresh water found?

Ans: The frozen water is found in mountains in the form of glaciers.

Q3. If water runs downhill to the seas what are some ways that fresh water becomes polluted?

Ans: When water runs down-hill to the seas the fresh water becomes polluted by dissolving some salts.

Q4. Why clear water is not necessarily safe to drink?

Ans: Clear water is not necessarily safe to drink because clear water may have germs.

Long Questions.

Q1. Explain how water is the most essential part of life?

Ans: All living things need water to live. Plants fish, insects, birds and another animals all need water to grow. Green plants must have water to make food during photosynthesis. Some plants and animals live only in water. Aquatic animals use oxygen dissolved in water. Our body also needs water. Water makes up about two-thirds of our body. Water helps us in several ways. Water helps to digest our food. Water keeps our body cool in hot weather.

Q2. How can we preserve water?

Ans: We can save water by acting upon following tips:

(i) Turn off the tap when you brush your teeth.
(ii) Wash fruits and vegetables in a bowl.

(iii) Don't wash dishes under running water.
(iv) If you have a lawn, water it early in the morning or late in the afternoon.

Chapter No. 6
Structure of an Atom

Short Questions.

Q1. Define cation and an anion?

Ans: Cation: When an atom releases its one or more electrons, it becomes a positive cation.

Anion: When an atom absorbs electrons in its outermost shell, it becomes a negative anion.

Q2. What is chemical formula?

Ans: Chemical Formula: Describing a molecule in the form of symbols and valencies is called the chemical formula.

Q3. List the names, charges and locations of three kinds of particles that make up an atom.

Ans: An electron has negative charge. A proton has positive charge. A neutron has not charge.

Q4. A chlorine atom has 17 protons and 18 neutrons, what is its mass number?

Ans: Mass Number = 17+18→ 35
Atomic Number = 17

Chapter No. 7
Physical and Chemical Changes and Processes

Short Questions.

Q1. What is meant by physical change?

Ans: Physical change is one which only the physical properties of a substance change and its chemical composition remains the same.

Q2. Define chemical change?

Ans: Chemical change is one in which a new substance is formed. Burning paper, rusting of iron are some examples of chemical changes.

Q3. Give an example to show that people change the environment.

Ans: Burning of fuels is example of a chemical change. Fuel that we use to run our vehicles or factories consists of substances known as hydrocarbons.

Long Questions.

Q1. Explain with examples that a chemical change brings change in the properties of a substance.

Ans: Chemical change is one in which a new substance is formed. Burning paper, rusting of iron are some examples of chemical changes. Coal is carbon when

we burn coal, it changes into smoke, energy and ash. So, burning of coal is a chemical change because new substances are formed during this process.

Applications of Chemical Changes:

As a result of chemical changes new products are formed. We are living in the world of chemical changes.

Q2. Write brief notes on:

(i) Plastics (ii) Change of Vegetables into Fat

Ans: Plastics: Plastics are also the result of chemical changes. A plastic is any material that can be molded into any form. Plastics are very large molecules made from polymers (long molecules made from smaller molecules). Monomers are obtained from crude oil, Polyethylene is example of plastics.

Change of Vegetables into Fat:

Chemical process called hydrogenation changes vegetable oil into solid fat (Banaspati ghee). When hydrogen is passed through vegetable oil in the presence of nickel, it converts into solid fat. This process is called hydrogenation. Vegetable oil is liquid while fat (ghee) is solid at room temperature.

Note: Science work given above will be done on Science school copy. (learn also)

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