Science for class 6th

Chapter No: 1 Cellular Organization of Plants and Animals.

Q:1 Describe parts and functioning of a light micro scope.

Parts of a light microscope.

A light micro scope has a base, an arm 'a tube' a stage two adjustment screws and two lenses.

Functioning of light Microscope.

The object to be seen id placed on glass slide on the stage. Adjustment screws are used to focus the object clearly. By using lens we can view 1500times bigger image of an object.

Q:2 Describe the structure of a plant cell also draw its babbled diagram.

Structure of a plant cell

(i)Cell Wall:-

The outer most covering of a plant cell is called cell wall. It gives shape and support to the cell.

(ii)Cell Membrane:-

Next to the cell wall cell membrane is present It controls the movement of material in and out of the cell.

(iii)Cytoplasm:-

Jelly like material inside the cell membrane is called cytoplasm. Most of the cell functions take place in it. Such as "mitochondria" provides energy to the cell. Chloroplast traps sunlight to make food. Vacules store waste material, water, air and food particles.

(iv)Nucleus:-

Nucleus is the most important part of the cell. It controls all the activities of the cell. That's why it is called the "Brain" of the cell.

Q: 3Write a note on the nucleus of the cell?

Nucleus is the most important part of the cell. It is called the brain of the cell. It controls all the activities of the cell. Many thread like structure called chromosomes are present in it which pass on the characteristics of the cell to new cell.

Q: 4Write about shoot system of a plant.

The part of the plant outside the ground forms the shoot system of the plant It consists of main stem leaves branches and flowers.

Function of different parts of a shoot system:-

(i)Main stem:-

It provides support to the plant. It holds the plant firmly in the soil.

(ii) Leaves:-

Leaves are called food factories The prepare food for the plant.

(iii) Branches:-

Branches conduct water and minerals from root to all parts of plant.

(iv) Flowers:-

Flowers are the reproductive part of the plants.

Q:5 **Define Cell**

A Cell:-

A cell is the basic unit of structure and function of all the living organisms. All the living things are made up of cells.

A Tissue:-

A group of cells performing same function is called tissue.

Example:-

Xylem tissue, Muscle tissue, Bone tissue etc.

An Organ:-

A Group of tissues performing the same function is called an organ.

Example:-

Leaf, Heart, Lungs etc.

Organ Systems:-

A group of organs which work together is called an organ system.

Example:-

Root system Digestive system

An Organism;-

A combination of different organs and organ systems which work is coordination is called an organism.

Example:-

Animals, Plants, Humane beings etc.

Expand Your Thinking:-

Q (I) A brain cell contains thousands of mitochondria. What conclude about the brains need for energy?

Brain controls all the activities so it needs more energy. That's why it contains thousands of mitochondria because it provides energy to the cell.

Q (ii) which cell part is being described.

Helps keep cytoplasm inside:-

Ceil membrane.

Controls all cell activities:-

Nucleus

Liquid filled space for storage:-

Cytoplasm.

Green plans which trap energy:-

Chloroplast

Clearly Jelly like material:-

Cytoplasm.

Q (III) Suppose you saw a small organism move across you look is it a unicellular or multicellular.

Ans:- It is a multicellular organism because unicellular organism cannot be seen with naked eye without microscope.

Q (iv) How is a tissue like a team?

Ans:- A tissue is a group of cells which work together.

Q (v) Complete the Venn diagram.

Venn diagram

Chapter No: 2 Sense Organs

Q:1 Describe the structure of human Eye.

Ans:- Main parts of a human eye are Cornea, iris, pupil, lens, retina and optic nerve

Cornea:-

The transparent part of the eye is called cornea, Light rays enter the eye through cornea.

Iris:-

The coloured portion of eye is called iris. Different colours of eye are due to iris.

Pupil:-

The hole in the middle of iris is known as pupil. It expands in dim light and contracts in bright light.

Lens:-

A flexible lens is present behind the pupil. It helps the eye to focus light.

Retina:-

Eye lens from the image on retina.

Optic nerve:-

When the light hits the retina it sends signals to brain the optic nerve and thus we become able to see the object.

Q:2 Describe structure and function of the inner ear.

Ans: The last part of the ear is inner ear. It is filled with a liquid. It has a coiled structure called cochlea. It sends signals to the brain through auditory nerves and thus we become able to hear a sound.

Q:3 Write a note on sense of smell.

Ans: The sense organ for smelling is nose. Our nose is a hallow air passage. It has two openings called nostrils. In each side of the nose there is an air chamber.

The roof of the nose has lining of nerve cells to sense smell. When some odour present in the air enters our nose, nerve cells pass message to the brain through olfactory nerve and we become able to differentiate sweet or bad smell.

Q:4 What is the importance of our tongue?

Ans: Tongue is the sense organ for taste. Tongue has taste buds due to which we are able to detect sweet, salty sour and bitter tastes.

Q:5 Write a note on our sense of touch.

Ans: Skin is the organ of touch. The skin contains many kinds of cell that detect pain, pressure, touch, heat and cold. Our skin has outer and inner layer. Outer layer protects the skin from harmful rays of the sun. The inner layer is sensitive part of the skin. It has blood vessels nerves sweat glands and roots of hair. When we touch something sensitive cell of the skin send message to the brain and the brain give instruction to other part of the body according to the message.

Explain Your Thinking

Q:1 what happens to the pupil when we switch the lamp on?

Ans: The pupil of our eye contracts due to the bright light of the lamp.

Q:2 Sometimes as a result of cold the middle ear becomes filled with fluid why do you think this can cause a temporary loss of hearing.

Ans:- We hear the sound when sound waves strike the eardrum and it causes vibration. If it is called with fluid sound wave will not strike the eardrum and we can't hear the sound.

Q:3 what is the advantage of having a lens in the eye that can change its shape?

Ans: Due to the flexible lens we can focus the light and we become able to see even in the dim light.

Q:5 Have you ever faced an injury of breaking of your nail? Why is it so painful?

Ans: Because tip of the finger is the most sensitive part of our skin.

Concept Map

Sense Organs

Nose	Tongue	EAR	EYE	Skin
Olfactory nerve	Taste Buds	Cochlea	Retina	the largest organ
Organ				

Chapter No: 3 Photosynthesis and Respiration in Plants

Q:1 Describe the internal structure of leaf?

Ans: Internal structure of leaf:-

There are three main internal parts of a leaf.

(i) **Epidermis**

(ii) **Mesophyll**

(iii) **Vascular Bundle**

Epidermis:-

The upper layer of leaf is called upper epidermis .The lower layer of leaf is called lower epidermis .Lower epidermis has many stomata's .Exchange of gases and vapors between the leaf cells and air takes place through these stomata's.

Mesophyll:-

Between the upper and lower epidermis mesophyll tissues are present. Mesophyll contains chloroplasts and chlorophyll is present in chloroplasts. Chlorophyll traps sunlight for photosynthesis.

Vascular Bundle:-

The central part of mesophyll tissue is made of vascular bundle. It has xylem and Phloem tissues.

Xylem tissues:-

Xylem tissues carry water from root to leaves.

Phloem tissues:-

Phloem tissues carry prepared food to other parts of plant.

Q:2 Which factors are necessary for photo synthesis?

Ans: Necessary factors for photosynthesis:-

Light temperature carbon dioxide water and chlorophyll are the necessary factor for photosynthesis.

Q:3 Prove the structure of leaf facilitates the process of photosynthesis?

Ans: The structure of leaf is suitable for photosynthesis.

Flat Blade:-

(i) Flat blade of leaf traps sunlight for photosynthesis.

(ii) Leaves are thin so that the carbon dioxide and light can reach to the inner cells easily.

(iii) Exchange of gases, water and air takes place through stomatas.

(iv) Thick layer of mesophyll cells make enough food for plants.

(v) **Vascular Bundle:-**

It carries water from root to leave and prepared food to all parts of plant. All the above given characteristics prove that the structure of leaf is fit for the process of photosynthesis.

Q:4 How does the respiration accours in plants?

Ans: Plants take in oxygen from the air and give out carbon dioxide is used in photosynthesis.

Process of respiration can be shown by this equation

Glucose +Oxygen _____>Carbon dioxide +water +energy.

Expand your Thinking:-

Q:1 Which part of the leaf can best be compared to your skin.

Ans: Epidermis can be best compared to our skin.

Q:2 What is one cause of oxygen being found in the atmosphere?

Ans: Because plants release oxygen in the atmosphere during photosynthesis.

Q:3 What would happen if there were not carbon dioxide in the air?

Ans: If there is no carbon dioxide in the air, plants would not be able to prepare food and other living organism (animal, human being) would not get to food eat.

Q:4 Why is it important that the leaves on a stem are arranged so they do not overlap too much?

Ans: It is important for leaves not to overlap each other to absorb maximum sunlight for photosynthesis.

Concept Map

Respiration

Carbon dioxide

Energy

~~Carbon~~ dioxide

Photosynthesis

Glucose

Oxygen

Chapter No :4 Environment and Inter actions

Q:1 How do plants depend upon animals for their needs?

Ans: Plants are the producers. They make their own food by photosynthesis. Carbon dioxide is necessary for photosynthesis (food making process) the plants get carbon dioxide from animals, because animals release carbon dioxide during respiration.

Q:2 Explain the abiotic factors of the environment.

Ans: ~~Alone~~ All the living things are the abiotic components of environment Light, air, temperature soil and water are the abiotic components of the environment.

Light:-

Light is a very important abiotic component of the environment. Plants need sunlight for photosynthesis. All the living organisms use the food prepared by plants. Human beings and animals need sunlight for their activities.

Temperature:-

~~The heat of the sun affects the temperature mostly days are~~ hot due to the sun. (2) Most of the organisms are active at the temperatures between 0^0C to 45^0C (1) Temprature affects the actives of plants and animals.

Air:-

Air is a mixture of different gases. ~~Oxygen~~ and carbondioxide is necessary for photosynthesis. All the living organism cannot survive without air. oxygen is necessary for respiration

Soil:-

Soil is very important for plants growth. Plants get water and minerals from soil. Plant cannot exist without soil.

Water:-

Water is essential for life living organisms cannot live without water.

Q:3 Explain the following with example.

(i) **Parasitism:-**

A relationship between two living organisms in which one is harmed and other is helped is called a parasitism.

(ii) **A parasite:-**

The organism which depends on the other organism for it food is called a parasite.

Example:-