

BIJENDRA PUBLIC SCHOOL, PURNEA

Class - 8

Subject - SCIENCE

Chapter - CELL STRUCTURE AND FUNCTIONS

A. Very Short - Answer Questions:

1. Name the cell in our body which is about a metre in length.

Ans. Nerve cell.

2. Which part of the cell can be called brain of the cell?

Ans. Nucleus.

3. What is the jelly like substance present in cells called?

Ans. Cytoplasm

4. What are the thread-like structures composed of DNA called?

Ans. Chromosome.

5. Name the cell organelles which is considered power house of the cell.

Ans. Mitochondria

B. Short Answer Questions.

1. Describe the cellular level of organisation.

Ans. Cell forms the lowest level of organisation which has life of a living organism. This level of organisation is called cellular level.

2. Describe the single-celled organism Amoeba.

Ans. Amoeba is a unicellular aquatic animal. It has irregular shape. It can change its shape slowly. It forms projections on its body which are called pseudopodia. Pseudopodia helps in movement and catching prey.

3. What kind of protection is provided by the cell wall in plants?

Ans. The cell wall in plants provides protection against:-

- i. Temperature variations
- ii. High wind speed
- iii. Atmospheric variations

4. Mention the functions of nucleus of a cell.

Ans. The nucleus of the cell has the following functions:-

- i. Transmission of hereditary characteristics from generation to generation.
- ii. It controls all the life functions taking place inside the cell.

5. Draw a labelled diagram of the chlamydomonas.

Ans. Draw it from the book from the page no. 133

C. Long Answer Questions.

1. Name the various cell organelles present in the cytoplasm of the cell.

Ans. The various cell organelles present in the cytoplasm are:

- * Mitochondria
- * Endoplasmic reticulum
- * Ribosome
- * Golgi bodies

- * Vacuoles
- * Lysosomes
- * Centrosomes
- * Plastids

2. Mention the function of the following:-

Mitochondria, Ribosomes, Golgi bodies and Lysosome

Ans. Function of the following cell organelles are:-

Mitochondria:- Plays an important role to perform cellular respiration and also help in the production of energy.

Ribosome:- It help in the protein synthesis so also called the protein factory of the cell.

Golgi bodies:-Plays an important role to synthesize, store and secrete many substances.

Lysosome:- Help in the process of cellular digestion because it contains digestive enzyme inside that.

3. Where are the chromosomes found in a cell? State their functions.

Ans. Chromosomes are found inside the nucleus of a cell. It composed of deoxyribonucleic acid (DNA) which contain basic hereditary units called genes. Genes are responsible for passing the genetic characteristics from the parents to the offsprings.

4. Mention sketches of an animal and plant cell. Mention three differences them.

Ans. Draw the sketch of an animal and plant cell from the page no 132.

Differences between plant cell and animal cell are:-

Plant Cell

1. It contains a rigid non living layer called cell wall.

2. It has usually one or two large vacuoles.

3. Plastids are the characteristics of plant cell.

Animal Cell

1. Cell wall is absent in animal cell.

2. Vacuoles are small in size and maybe more than one in number.

3. Plastids are absent in animal cell.

5. Make a sketch of human nerve cell. What function do these cells perform?

Ans. Sketch the diagram of nerve cell from the page no 128 from your book.

Function of the nerve cell are:-

Nerve cell transmit impulses from the brain to the organs, gland and muscles, and inform, controls the movement of different types of muscles as well as the activity of organs and glands in the body.

D. Tick (✓) the odd one out giving reason.

1. Amoeba, Spirogyra, Paramecium, Euglena, Yeast.

Ans. Amoeba:-Out of all the organism mentioned here, all except amoeba have a definite structure.

2. DNA, Genes, Cytoplasm, Chromosomes

Ans. Cytoplasm:-It is the thick jelly like fluid present inside the cell membrane but, DNA and genes are the part of chromosomes.

3. Protein synthesis, Ribosomes, Golgi bodies

Ans. Protein synthesis:-It is a function of cell organelle whereas other two are cell organelle.

4. Nucleolus, RNA, Vacuoles, Cell Nucleus

Ans. RNA:-Because nucleolus, vacuoles and cell nucleus are the cell parts and RNA is not the cell part.

5. Nerve cell, Soma, Dendrite, Vascular bundle, Axon

Ans. Vascular bundle:-This one is the part of plant cell and rest all are the parts of animal cell.

E. Define the following terms:-

1. The animal cell:-

Ans. Animal cell are the basic structural and functional units of animal body. They are eukaryotic cell means that membrane bound nucleus along with other cell organelles.

2. The nucleus:-

Ans. Nucleus is the dense oval shaped structure and bounded with double layered membrane that contains genetic materials and is present in eukaryotic cell but not well defined in prokaryotic cell.

3. The paramecium:-

Ans. It is a slipper shaped unicellular, aquatic animal. It's body is covered with small hair like projections called cilia which help in the movement. It has two nuclei named macronucleus and micronucleus.

4. The nerve cell:-

Ans. Nerve cell is long branched and has thread like projections. It is larger than a meter in length. It transmit impulses from brain to the organ and in turn controls the movement of the body.

5. Yeast:-

Ans. Yeast is a unicellular plant which belongs to the fungi group. It causes fermentation in food containing carbohydrates.

HOTS:-HIGH ORDER THINKING SKILLS

1. A cell requires water, minerals and other nutrients to survive. It is covered with a membrane. How do these things reach inside the cell?

Ans. A cell fulfil its requirements through the cell membrane. Cell membrane has a special characteristic that it is semi permeable and a semi permeable membrane (cell membrane) that only allows movement of solvent molecules but restrict movement of solute particles across the membrane.

2. In general, size of the cells has no relationship to the size of organism. How do the nerve cells in a rat and a giraffe? Compare in their length.

Ans. The size of the cell has no relationship with the body size of the organism. The size of the cell is related to its function. For example:-The nerve cells both in rat and elephant are long and branched and perform the same function. When we compare the nerve cell of rat and elephant then we can observe that the size of cell in both the animals are same, only number of cells are differ. Elephants have more cells as compared to rat.

3. Why are chromosomes called hereditary vehicles?

Ans. Chromosomes called hereditary vehicles because it composed of deoxyribonucleic acid (DNA) and DNA contains basic hereditary units called genes. Genes are responsible for the passing of genetic characteristics from the parents to the offsprings.