

Subject – Science

Class- 8

Topic – chapter -8 cell structure

EXERCISES

Use Cordova Smart Class Software on the smart board in class to do these exercises.

A. Tick (✓) the correct options:

1. The outer wall surrounding the cell membrane of a plant cell is called _____.
 (a) cell wall (b) plasma membrane (c) nucleoplasm (d) cytoplasm
2. The lowest level of organisation that has life is _____.
 (a) cell (b) organism (c) organ (d) organ system
3. The power house of the cell is _____.
 (a) nucleus (b) mitochondrion (c) ribosome (d) plastid
4. Plant cell does not have _____.
 (a) cell wall (b) plastid (c) cell membrane (d) centrosome
5. The cells of an onion peel are example of _____.
 (a) plant cell (b) bacterial cell (c) animal cell (d) fungal cell
6. In the centre of the plant cell, we find a large _____.
 (a) vacuole (b) nucleus (c) cell wall (d) plastid
7. The magnification power of an electron microscope is _____ times.
 (a) 100–1500 (b) 100–200 (c) 1000–10000 (d) 100,000–500,000
8. Which of the following is not a unicellular organism?
 (a) Amoeba (b) Paramecium (c) Hydra (d) Euglena
9. Which of the following is not a stain?
 (a) safranin (b) kerosene (c) eosin (d) methylene blue

B. Fill in the blanks:

1. Different tissues join together to form a/an _____.
2. All multicellular organisms show division of _____.
3. _____ are the powerhouses of the cell.
4. The cells that do not have a well-organised nucleus are called _____.
5. The carrier of genetic characteristics from the parents to the offspring are _____.
6. Amoeba has no definite _____.

C. Match the following:

Column A	Column B
1. Prokaryote	(a) gene
2. Chromosome	(b) green plastids
3. Chloroplast	(c) animals
4. Eukaryotes	(d) blue-green algae

D. Very Short Answer Questions:

1. Name the instrument used to study cells.
2. What does the chloroplast contain?
3. Which cell organelle is also known as suicidal bags?
4. Who coined the term 'cell'?
5. Name two cells that do not have any fixed shape.
6. Name two cell organelles that are present in a plant cell but not in an animal cell.

E. Short Answer Type-I Questions:

1. What is meant by 'staining'?
2. Give an example, each of
(a) a spherical cell (b) a spindle-shaped cell (c) an elongated cell (d) an oval-shaped cell
3. Why are chloroplasts found in plant cells only?
4. How do chromatin fibres form chromosomes?

F. Short Answer Type-II Questions:

1. What are unicellular and multicellular organisms? Give two examples of each.
2. What are eukaryotic cells? Name any two eukaryotes.
3. What is the function of plasma membrane?
4. Different organs work together to perform a specific life function.
(a) What is the association of different organs to perform a particular function called?
(b) What should we learn from these organ systems?

G. Long Answer Questions:

1. (a) Draw a labelled diagram of an animal cell.
(b) Differentiate between an animal cell and a plant cell. Give any five differences.
2. What is the function of the following in the cell?
(a) mitochondria (b) cell membrane (c) vacuole (d) ribosome (e) nucleus

H. HOTS (Higher Order Thinking Skills) Questions:

1. Why are chromosomes called hereditary vehicles?
2. When you are shown two slides one of a plant cell and another of an animal cell, how will you distinguish between them?

EXERCISES

A. Tick (✓) the correct options:

1. (a) 2. (a) 3. (b) 4. (d) 5. (a) 6. (a)
7. (d) 8. (c) 9. (b)

B. Fill in the blanks:

1. organ
3. Mitochondria
5. genes

2. labour
4. prokaryotic cells
6. shape

C. Match the following:

1. (d)
2. (a)
3. (b)
4. (c)

D. Very Short Answer Questions:

1. Microscope
2. Chlorophyll
3. Lysosome
4. Robert Hooke
5. *Amoeba* and white blood cells of humans
6. Vacuoles and plastids

E. Short Answer Type-I Questions:

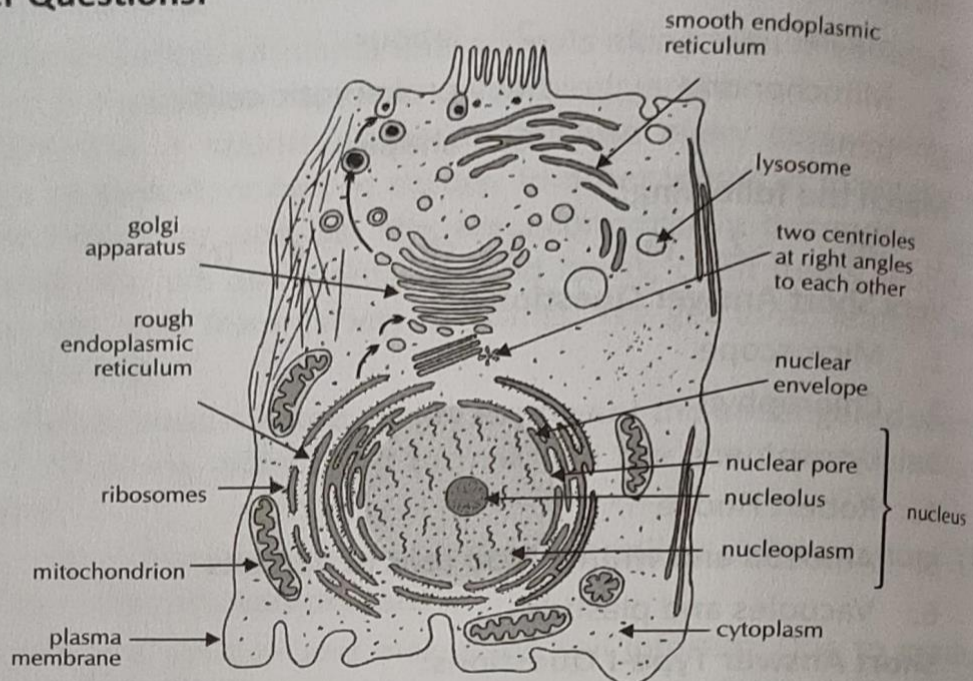
1. Staining is a method to colour the colourless and transparent cells to observe their details under a microscope.
2. (a) Egg cell (b) Smooth muscle cell
(c) Nerve cell (d) Red blood cell
3. Chloroplasts are green plastids that contain chlorophyll that helps in photosynthesis. Plants perform photosynthesis due to the presence of chlorophyll. Hence, chloroplasts are found in only plant cells.
4. In a dividing nucleus, the chromatin fibres condense and form chromosomes.

F. Short Answer Type-II Questions:

1. Organisms that are made up of a single cell are called unicellular organisms. Organisms that are made up of many cells are called multicellular organisms.
Examples of unicellular organisms are *Amoeba* and *Paramecium* and of multicellular organisms are insects and trees.
2. The cells that have a well-organised nucleus with nuclear membrane are called eukaryotic cells. Examples are *Hydra* and insects.
3. (a) Plasma membrane is porous and allows the entry and exit of only selected substances.
(b) It provides an outer boundary to the cell and separates cells from one another and also from the surrounding medium. It also protects the cells from injury.
4. (a) Organ system
(b) Teamwork

G. Long Answer Questions:

1. (a)



Ultrastructure of generalised animal cell (as seen under electron microscope)

(b) Differences between plant and animal cells

S.No.	Parameters	Plant cell	Animal Cell
1.	Size	Plant cells are larger in size with distinct outlines.	Animal cells are smaller than plant cells.
2.	Cell wall	Cell wall is present.	Cell wall is absent.
3.	Plastids	Plastids are present.	Plastids are absent.
4.	Vacuoles	A large vacuole is present. It fills most of the space of cell.	Vacuoles are absent, if present are small.
5.	Golgi apparatus or dictyosomes	Many dictyosomes are scattered in the cytoplasm.	Have well-developed golgi apparatus that are present near nucleus.

2. (a) **Mitochondria:** They provide energy for all the activities. The energy is produced by the oxidation of food (respiration). Thus, they are often called power houses of the cell.
- (b) **Cell membrane:** It is selectively permeable membrane, i.e., it allows the entry and exit of only selected substances. It also provides an outer boundary to the cell and separates cells from one another and also from the surrounding medium.
- (c) **Vacuole:** It stores soluble food, wastes and secretions of the cell dissolved in water as cell sap.
- (d) **Ribosome:** It is the site of protein synthesis.

(e) **Nucleus:** It controls all the metabolic activities of the cell. It is also responsible for passing genetic characteristics from parents to the offspring.

H. **HOTS (Higher Order Thinking Skills) Questions:**

1. Chromosomes are called hereditary vehicles because they carry the unit of inheritance, the gene from parent to the offspring (from one generation to another). They are responsible for transferring the traits from parents to offspring.
2. We can distinguish a plant cell from an animal cell by looking at the cell wall, a large vacuole and chloroplast present in the plant cell.