

chapter 18: Life's Mysteries in little chamber.

① Explain the function of microscope & different parts of microscope?

- The function of a microscope is to magnify objects.
- Lenses are fixed in the microscope for this purpose.
 - There are 3-different types of microscope.
 1. Simple microscope.
 2. compound microscope.
 3. light microscope.
 - microscopes in which more than one lens is used are called compound microscope.
 - followings are the different parts of microscope.
 - Eyepiece • knob • objective lens.
 - Stage & clip • Condenser • Mirror.
 - Arrangement of light in a microscope.
 - In the microscope, the part fixed below the stage is to reflect light on the material to be observed.
 - This arrangement which is fixed on the lower side of the stage in a metal ring has two planes, a plane mirror to reflect sunlight and a concave mirror to reflect artificial light.
 - The lens in the condenser that is on the lower side of the stage focuses light on the material to be observed.
 - Diaphragm, a part of the condenser, helps to regulate the intensity of light.

② Describe Magnification power of microscope?

- The magnification power of objective lenses are marked as $10\times$ & $45\times$
- Such marking can be in eyepiece too.
 - The magnification power of a microscope is the result of multiplying the numbers seen in the objective lens and the eyepiece.

③ What is the use of diaphragm in a microscope?
→ Diaphragm is a part of condenser, that helps to regulate the intensity of light.

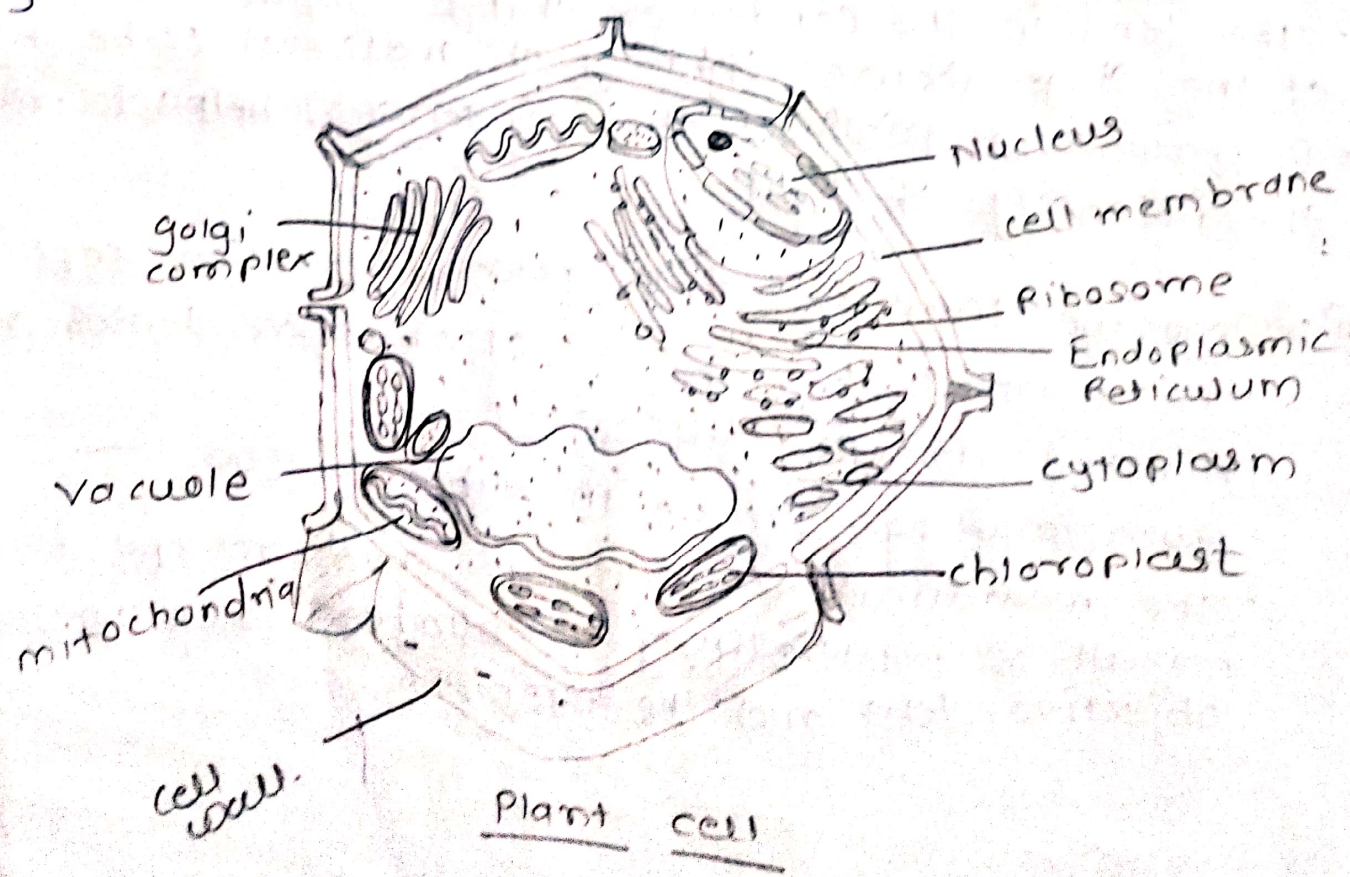
④ What is the use of mirror in a microscope?
→ The microscope has fixed two planes, a plane mirror to reflect sunlight & a concave mirror to reflect artificial light.

⑤ Explain function of cell.

- - The body of all organisms is made up of cells.
- cells are the structural & functional units of organisms.
- cells resist foreign particles.
- cells release energy from nutrients.
- cells synthesise biomolecules.
- The structure of cell is complex enough to perform all these functions.

⑥ Draw the diagram of plant cell & Explain in brief.

→



① Protoplasm & cytoplasm -

- + All substances inside the cell membrane constitute the protoplasm.
- cytoplasm is the part of the protoplasm excluding the nucleus.
- All factors required for life activities are present in cytoplasm.
- cell organelles are the specific parts seen in the cytoplasm to perform physiological functions.

② Mitochondria -

- power house of the cell. Helps in the production & storage of energy.
- Abundantly seen in the cell of liver, brain & muscle where energy requirement is high.

③ Endoplasmic Reticulum :-

- The passage in the cell, conduction of materials inside the cell takes place through this organelle.
- Also known as cytoskeleton as it provides firmness & shape to the cell.

④ Ribosome :-

- centre of protein synthesis in the cell.
- Seen either attached to the endoplasmic Reticulum or free in the cytoplasm.

⑤ Vacuole :-

- covered by a characteristic membrane called tonoplast.
- stores water, salts, excretory material etc.

⑥ Golgi complex :-

- collects cell secretion like enzymes, hormones, mucous etc. in small vesicle.
- Seen in plenty in glandular cells.

Chapter: Life's Mysteries in little chambers.

- ① Write the Name of parts Explain
② Describe the types of microscope + Identify parts of microscope. ?
ans →

③ Distinguish between plant cell & animal cell.

plant cell	Animal cell.
- cell wall is present.	- No cell wall.
- vacuole & plastids are present.	- No vacuole & plastids are
- No centrosome and lysosome.	- Centrosome & lysosome seen.

MCQ.

- ① microscopes in which more than one lens is used is called _____
(a) simple microscope (b) compound microscope.
(c) light microscope (d) None of above.
Ans → (b) compound microscope.

- ② The body of all organisms is made up of _____
(a) cells (b) tissue (c) bone (d) muscle.
Ans - (a) cells.

- ③ All substances inside the cell membrane constitute the _____
(a) ribosome (b) protoplasm (c) chloroplast
(d) nucleus

→ Ans - protoplasm.

④ _____ is the power house of cell.
a) ribosome b) golgi complex c) mitochondrion
d) nucleus
→ Ans - c) mitochondrion.

⑤ _____ is considered as the regulatory centre of the cell.
a) ribosome b) cytoplasm c) Nucleus d) vacuole
Ans → c) Nucleus.

⑥ _____ carries the genes.
a) chromatin reticulum b) Nuclear membrane
c) Nucleolus d) Nucleoplasm
Ans → a) chromatin reticulum.

⑦ _____ that play a major role in cell division are seen in the centrosome
a) lysosome b) cytoplasm c) Ribosome d) centrioles
ans → d) centrioles.

⑧ _____ contains digestive enzyme that are required for the destruction of foreign substance entering the cell.
a) lysosome b) centrosome c) cytoplasm d) centriole
ans → a) lysosome.

Q1. Explain the Nucleus & their different parts & function.

→ Nucleus is considered as the regulatory centre of the cell.

Nucleus has different parts.

1. Nucleoplasm -

It is the fluid part of the Nucleus. Nucleolus and chromatin reticulum are seen here.

2. Nuclear Membrane -

It is a double layered membrane that covers the Nucleus.

3. Nucleolus -

They are spherical bodies, that play a major role in the synthesis of ribosome.

4. Nuclear pore -

Nuclear pores are pores in the nuclear membrane.

- They help in the conduction of materials to and from the nucleus.

5. Chromatin Reticulum:

They are seen as a network in the nucleoplasm.

- They carry genes.

Q.2 Differentiate between prokaryotes and Eukaryotes.

- Nucleolus is absent

- Nucleolus is present.

- most prokaryotes are unicellular.

- most eukaryotes are multicellular.

- cell wall made up of peptidoglycan

- ~~mem~~ cell walls if present made of cellulose.

- Bacteria and blue-green algae are prokaryotes.

- Fungi, plant & animal cells are eukaryotic cells.