

DON BOSCO SCHOOL – RANCHI.
SUBJECT: BIOLOGY.
CLASS VI A/B/C/D

Lesson – 3. Cell – The Structure and Functions.

➤ **Multiple Choice Questions.**

1. Put a tick mark against the most appropriate alternative in the following statements:
 - i) Identify the part which contains pigment – **Plastid.**
 - ii) The organelle that controls all activities in a cell – **Nucleus.**
 - iii) A cell that is spherical in shape is – **Red Blood Cell.**
 - iv) The vacuole contains – **Water.**

➤ **Short Answer Questions.**

1. Name the scientist who invented the first microscope.

Answer: **Antonie Van Leeuwenhoek.**

2. Who coined the term “cell”?

Answer: **Robert Hooke.**

3. Briefly describe the three essential parts of a cell.

Answer: **The three essential parts of a cell are:**

- a) **Cell Membrane or Plasma Membrane** – Each cell is surrounded by a cell membrane, also called plasma membrane. It is very thin, delicate and flexible. It has fine pores in it, through which only certain substances can pass in and out, while others cannot.
- b) **Cytoplasm** – The cytoplasm is a semi-liquid, colourless and translucent substance. It is found between nucleus and the cell membrane.
- c) **Nucleus** – Nucleus is a small spherical mass mostly located towards the centre of the cytoplasm. It regulates and coordinates various life processes of the cell. It plays an important part during cell division.

4. The cell membrane is called selectively permeable. Why?

Answer: **The cell membrane is called selectively permeable because it allows the entry of only certain molecules, while holding back the others.**

5. State the difference between the following.

i) Nucleus and Nucleolus

Nucleus	Nucleolus
Nucleus is a small spherical mass located towards the centre of the cytoplasm of a cell. It regulates and coordinates various life processes of the cell. It plays an important part during cell division.	Inside the nucleus is a small darker body called the nucleolus. The nucleolus plays a vital role in making proteins in the cell.

ii) Cytoplasm and Protoplasm

Cytoplasm	Protoplasm
The cytoplasm is semi-liquid, colourless and translucent substance. It is found between the nucleus and the cell membrane.	Protoplasm is the living substance of the cell in which cytoplasm, nucleus and other cell organelles lie.

iii) Cell wall and Cell membrane

Cell wall	Cell membrane
Plants have a cell wall which lies outside the cell membrane. It is made up of cellulose. It gives shape and rigidity to the plant cell. It is a non-living structure.	Each cell is surrounded by a cell membrane. It is very thin, delicate and flexible. It is a living structure present in both plant and animal cells. It has fine pores in it, through which only certain substances can pass in and out, while others cannot

6. List the major differences between a plant cell and an animal cell.

Answer: The major differences between a plant cell and an animal cell are:

Plant Cell	Animal Cell
a) Size is usually larger.	a) Size is usually smaller.
b) Plant cell has a definite cell wall.	b) No cell wall.
c) Cytoplasm not so dense. Only a thin layer of cytoplasm.	c) Cytoplasm denser and more granular. It fills almost the entire cell.
d) Vacuoles prominent, fewer in number; concerned with storage of water and nutrients.	d) Vacuoles are small, numerous; concerned with extraction or secretion.
e) Contain plastids.	d) Do not contain plastids.

7. Briefly discuss the importance of chromosomes in an organism.

Answer: The chromosomes contain units called genes which are responsible for transmitting characteristics from parents to offsprings.

8. Fill in the blanks with the terms given below in the box.

pigments	wall	pre-existing	cell	vacuoles
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- i) The cell is the structural unit of all living things.**
- ii) All cells arise from pre-existing cells.**
- iii) Anima cells have no cell wall.**

- iv) Plastids contain **pigments**.
- v) **Vacuoles** are filled with water and dissolved substances.

➤ **Long Answer Questions.**

1. Briefly describe the structure of nucleus and mention any two functions.

Answer: Nucleus is a small spherical mass located towards the centre of the cytoplasm of a cell. The nucleus is surrounded by double layer porous membrane called nuclear membrane. The pores on nuclear membrane are known as nuclear pore. Inside the nucleus dense semi-liquid is present which is called as nucleoplasm which contains thread like structure called chromatin fibres. In the nucleoplasm, small darker body is present which is known as nucleolus. Nucleolus contains genes which carry information. Fig. 3.7 on page 35.

Its two functions are:

- i) It regulates and coordinate various life processes of the cell.**
- ii) It plays an important part during cell division.**

2. Name the scientist who coined the term cell? How many lenses did he use to observe objects?

Answer: Robert Hooke coined the term cell. In 1665 he developed a microscope to observe objects using two lenses.
