

Cell: The Unit of Life — Assignment 1

Class 11 Biology · Topic-wise question bank covering every concept of the chapter · Narayan Gurukul Academy

Instructions: (1) Attempt all questions. This worksheet walks through every concept of the chapter, topic by topic.
(2) The interactive MCQ version of these questions (with instant answer reveal) is available on the notes page.
(3) Universal values: $g = 10 \text{ m/s}^2$ unless stated. Give answers with correct SI units.

Cell Theory

MCQ Questions (choose the correct option)

- The cell theory was proposed by
 - Schleiden and Schwann
 - Robert Hooke
 - Virchow
 - Leeuwenhoek
- Cells were first observed by
 - Robert Hooke
 - Schwann
 - Virchow
 - Purkinje
- Omnis cellula-e cellula means
 - all cells arise from pre-existing cells
 - all cells are similar
 - cells have nuclei
 - cells are dead
- The cell theory was expanded by
 - Rudolf Virchow
 - Robert Hooke
 - Schleiden
 - Leeuwenhoek

1 Mark Questions

- Who discovered the cell?
- State the cell theory.
- What does 'omnis cellula-e cellula' mean?

2 Mark Questions

- State two postulates of the cell theory.
- Why is the cell called the structural and functional unit of life?

3 Mark Questions

- Explain the cell theory and its contributions.
- Describe the exceptions to the cell theory.

Prokaryotic vs Eukaryotic Cells

MCQ Questions (choose the correct option)

1. Prokaryotic cells lack
 - (A) a true nucleus
 - (B) ribosomes
 - (C) a cell membrane
 - (D) cytoplasm
2. The nuclear membrane is present in
 - (A) eukaryotic cells
 - (B) prokaryotic cells
 - (C) viruses only
 - (D) none
3. Ribosomes of prokaryotes are of the type
 - (A) 70S
 - (B) 80S
 - (C) 60S
 - (D) 40S
4. Membrane-bound organelles are found in
 - (A) eukaryotic cells
 - (B) prokaryotic cells
 - (C) viruses
 - (D) none

1 Mark Questions

1. What is the main difference between prokaryotic and eukaryotic cells?
2. What type of ribosomes do prokaryotes have?
3. Name one membrane-bound organelle.

2 Mark Questions

1. Distinguish between prokaryotic and eukaryotic cells.
2. Why are prokaryotes considered primitive?

3 Mark Questions

1. Compare prokaryotic and eukaryotic cells in a table.
2. Describe the cell as the basic unit of life with respect to both cell types.

Prokaryotic Cell — Detailed Structure

MCQ Questions (choose the correct option)

1. The outer covering of a bacterial cell beyond the cell membrane is the
 - (A) cell wall
 - (B) capsule
 - (C) nucleoid
 - (D) mesosome
2. The bacterial genetic material is

- (A) a single circular DNA
 - (B) many linear chromosomes
 - (C) RNA only
 - (D) no DNA
3. The specialised membrane infoldings of bacteria are
- (A) mesosomes
 - (B) plasmids
 - (C) nucleoids
 - (D) ribosomes
4. Bacteria move with the help of
- (A) flagella
 - (B) cilia
 - (C) pili only
 - (D) pseudopodia

1 Mark Questions

1. What is a nucleoid?
2. What is a mesosome?
3. Which structure helps bacteria to move?

2 Mark Questions

1. Describe the cell envelope of a prokaryote.
2. What are plasmids?

3 Mark Questions

1. Describe the structure of a prokaryotic cell.
2. Explain the functions of the components of a bacterial cell.

Cell Wall and Plasma Membrane

MCQ Questions (choose the correct option)

1. The plant cell wall is mainly made of
 - (A) cellulose
 - (B) chitin
 - (C) protein
 - (D) lipid
2. The plasma membrane is mainly composed of
 - (A) lipids and proteins
 - (B) cellulose
 - (C) chitin
 - (D) nucleic acids
3. The fluid mosaic model was proposed by
 - (A) Singer and Nicolson
 - (B) Schleiden
 - (C) Schwann

- (D) Virchow
4. The movement of water across a semi-permeable membrane is
- (A) osmosis
 - (B) diffusion
 - (C) active transport
 - (D) plasmolysis

1 Mark Questions

1. Name the main component of the plant cell wall.
2. Who proposed the fluid mosaic model?
3. What is osmosis?

2 Mark Questions

1. State two functions of the cell wall.
2. State two functions of the plasma membrane.

3 Mark Questions

1. Describe the structure of the plasma membrane (fluid mosaic model).
2. Explain the functions of the cell wall and plasma membrane.

Eukaryotic Cell Organelles

MCQ Questions (choose the correct option)

1. The powerhouse of the cell is the
 - (A) mitochondrion
 - (B) ribosome
 - (C) Golgi body
 - (D) lysosome
2. The site of protein synthesis is the
 - (A) ribosome
 - (B) mitochondrion
 - (C) lysosome
 - (D) nucleus
3. The suicidal bags of the cell are
 - (A) lysosomes
 - (B) ribosomes
 - (C) plastids
 - (D) vacuoles
4. The organelle involved in packaging and secretion is the
 - (A) Golgi apparatus
 - (B) mitochondrion
 - (C) nucleolus
 - (D) centrosome

1 Mark Questions

1. Which organelle is the powerhouse of the cell?
2. What are lysosomes called?
3. What is the function of the Golgi apparatus?

2 Mark Questions

1. State two functions of mitochondria.
2. Distinguish between rough and smooth endoplasmic reticulum.

3 Mark Questions

1. Describe the structure and function of mitochondria.
2. Explain the functions of any four cell organelles.

The Nucleus

MCQ Questions (choose the correct option)

1. The nucleus was discovered by
 - (A) Robert Brown
 - (B) Robert Hooke
 - (C) Schleiden
 - (D) Virchow
2. The nuclear envelope is
 - (A) double-membraned
 - (B) single-membraned
 - (C) absent
 - (D) made of cellulose
3. The site of ribosome synthesis is the
 - (A) nucleolus
 - (B) nuclear pore
 - (C) chromatin
 - (D) nucleoplasm
4. The genetic material of the nucleus is
 - (A) DNA
 - (B) RNA
 - (C) protein
 - (D) lipid

1 Mark Questions

1. Who discovered the nucleus?
2. What is the nucleolus?
3. What are nuclear pores?

2 Mark Questions

1. Describe the structure of the nuclear envelope.
2. State two functions of the nucleus.

3 Mark Questions

1. Describe the structure of the nucleus.
2. Explain the functions of the nucleus and nucleolus.