

Cell: The Unit of Life — CBSE Pattern Test 2

Class 11 Biology · 90 minutes · 40 marks · Sections A–D with answer key · Narayan Gurukul Academy

Test 2 — CBSE Pattern (90 minutes, 40 marks)

Class 11 Biology · Cell: The Unit of Life · Narayan Gurukul Academy (ClassApna)

General Instructions: (1) This paper has four sections — Section A (1×10), Section B (2×4), Section C (3×4) and Section D (5×2) — total 40 marks. Time allowed: 90 minutes.
(2) All questions are compulsory. No overall choice is given; internal choice, where allowed, is clearly marked.
(3) For MCQ questions choose the single correct option; for VSA answers write a single line.
(4) Take $g = 10 \text{ m/s}^2$. All symbols carry their usual meaning. Use of a calculator is not permitted.

Section A — MCQ & VSA ($10 \times 1 = 10$ marks)

- Cells were first observed by
 - Robert Hooke
 - Schwann
 - Virchow
 - Purkinje
- The nuclear membrane is present in
 - eukaryotic cells
 - prokaryotic cells
 - viruses only
 - none
- Ribosomes of prokaryotes are of the type
 - 70S
 - 80S
 - 60S
 - 40S
- The plant cell wall is mainly made of
 - cellulose
 - chitin
 - protein
 - lipid
- The suicidal bags of the cell are
 - lysosomes
 - ribosomes
 - plastids
 - vacuoles
- The nuclear envelope is
 - double-membraned
 - single-membraned
 - absent
 - made of cellulose
- Bacteria move with the help of
 - flagella

- (B) cilia
 - (C) pili only
 - (D) pseudopodia
8. The organelle involved in packaging and secretion is the
- (A) Golgi apparatus
 - (B) mitochondrion
 - (C) nucleolus
 - (D) centrosome
9. What does 'omnis cellula-e cellula' mean?
10. What is a mesosome?

Section B — Short Answer I ($4 \times 2 = 8$ marks)

11. What type of ribosomes do prokaryotes have?
12. What is a mesosome?
13. Who proposed the fluid mosaic model?
14. What are nuclear pores?

Section C — Short Answer II ($4 \times 3 = 12$ marks)

15. Why is the cell called the structural and functional unit of life?
16. What are plasmids?
17. State two functions of the plasma membrane.
18. Distinguish between rough and smooth endoplasmic reticulum.

Section D — Long Answers ($2 \times 5 = 10$ marks)

19. (a) Compare prokaryotic and eukaryotic cells in a table. (b) Describe the structure of a prokaryotic cell.
20. (a) Explain the functions of any four cell organelles. (b) Explain the functions of the nucleus and nucleolus.

Answer Key (Marking Scheme)

- Q1 — (A) Robert Hooke. Q2 — (A) eukaryotic cells. Q3 — (A) 70S. Q4 — (A) cellulose. Q5 — (A) lysosomes. Q6 — (A) double-membraned. Q7 — (A) flagella. Q8 — (A) Golgi apparatus.
- Q9 — All cells arise from pre-existing cells.
- Q10 — A mesosome is a specialised membrane infolding of a prokaryotic cell.
- Q11 — 70S ribosomes.
- Q12 — A special membrane infolding of the bacterial plasma membrane.
- Q13 — Singer and Nicolson.
- Q14 — Nuclear pores are openings in the nuclear envelope that allow exchange of materials.
- Q15 — Because all life activities (metabolism, growth, reproduction) occur within the cell.
- Q16 — Plasmids are small circular extra-chromosomal DNA molecules in prokaryotes.
- Q17 — Selective permeability and transport of substances.
- Q18 — Rough ER bears ribosomes and makes proteins; smooth ER lacks ribosomes and makes lipids.

Q19 — (a) Nucleus absent vs present; organelles absent vs present; ribosomes 70S vs 80S; DNA circular vs linear. (b) Cell envelope, nucleoid, 70S ribosomes, mesosomes, flagella/pili.

Q20 — (a) Mitochondria (ATP), ribosomes (protein synthesis), lysosomes (digestion), Golgi body (packaging). (b) The nucleus stores DNA and controls activities; the nucleolus synthesises ribosomes.