

CLASS 9

SCIENCE

EXTRA QUESTIONS

Class 9 Science Chapter 2 Cell: The Building Block of Life – Extra Questions with Answers

Extra practice questions for Class 9 Science Chapter 2 (Cell: The Building Block of Life), beyond the textbook. These Class 9 Science Chapter 2 important questions are handy for last-minute exam practice.

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Very Short Answer Questions (1 mark)

Short Answer Questions (2–3 marks)

Higher-Order Thinking / Application Questions

Extra practice questions for Class 9 Science Chapter 2 (Cell: The Building Block of Life), beyond the textbook. These Class 9 Science Chapter 2 important questions are handy for last-minute exam practice.

Very Short Answer Questions (1 mark)

Q1. Which organelle is called the “powerhouse of the cell”?

Ans: Mitochondria.

Q2. Name one organelle found only in plant cells.

Ans: Chloroplast (cell wall and large central vacuole are also acceptable).

Q3. What type of cell lacks a membrane-bound nucleus?

Ans: Prokaryotic cell.

Q4. How many daughter cells are produced by mitosis, and are they genetically identical?

Ans: Two; yes, genetically identical to the parent cell.

Q5. What is the function of the cell wall?

Ans: Provides rigidity and structural support to plant cells.

Short Answer Questions (2–3 marks)

Q6. Differentiate between rough ER and smooth ER.

Ans: Rough ER has ribosomes attached to its surface and is involved in protein synthesis, while smooth ER lacks ribosomes and is involved in lipid synthesis.

Q7. Explain why the plasma membrane is described as “selectively permeable.”

Ans: It allows certain substances (like water, oxygen, and small molecules) to pass through while restricting others, helping the cell maintain a stable internal environment and regulate what enters and exits.

Q8. Compare mitosis and meiosis in terms of the number and type of daughter cells produced.

Ans: Mitosis produces two genetically identical daughter cells with the same chromosome number as the parent, used for growth/repair. Meiosis produces four genetically different daughter cells with half the chromosome number, used to form gametes for sexual reproduction.

Higher-Order Thinking / Application Questions

Q9. A scientist examines a cell under a microscope and finds it has no nucleus, no mitochondria, and no membrane-bound organelles, but has genetic material floating freely. What type of organism does this cell most likely belong to, and why?

Ans: It most likely belongs to a prokaryotic organism, such as a bacterium, since prokaryotic cells lack a membrane-bound nucleus and other membrane-bound organelles, with their DNA lying free in the cytoplasm — unlike eukaryotic cells, which have both.

Q10. If a plant cell is placed in pure water, its central vacuole swells and the cell becomes firm (turgid), but it does not burst, unlike a similarly placed animal cell, which might burst. Explain why, using the structures discussed in this chapter.

Ans: The plant cell has a rigid cell wall surrounding its plasma membrane, which resists the swelling pressure from water entering the large central vacuole and prevents the cell from bursting, keeping it firm (turgid) instead. An animal cell lacks a cell wall, so excess water entering through the plasma membrane can cause it to swell uncontrollably and burst.

See also: [Chapter 1](#) | [Chapter 2](#)

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