

CLASS 8

SCIENCE

EXTRA QUESTIONS

Extra Questions: Class 8 Science Chapter 2 The Invisible Living World

Practice questions beyond the textbook exercise, testing deeper understanding of cells and microorganisms for Class 8 Science Chapter 2: The Invisible Living World.

Contents

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1 (Assertion-Reason). Assertion: Bacterial cells lack a true nucleus. Reason: Bacteria have a nucleoid instead of a membrane-bound nucleus.

Solution: Both true, and the reason correctly explains the assertion — a nucleoid is an unbound region of genetic material, unlike the membrane-enclosed nucleus of plant/animal cells.

2 (Applied). A student stores bread in three places: a warm humid kitchen shelf, an airtight dry container, and a refrigerator. Which is likely to grow mould fastest, and why?

Solution: The **warm humid kitchen shelf** — mould (a fungus) grows fastest with warmth, moisture and air present; the airtight container lacks moisture/air exchange and the fridge is too cold for rapid growth.

3 (Short Answer). Name one microorganism each that is (i) beneficial in bread-making (ii) beneficial in curd-making (iii) beneficial in soil nitrogen enrichment.

Solution: (i) Yeast (ii) Lactobacillus (iii) Rhizobium.

4 (Assertion-Reason). Assertion: Salt is used to preserve pickles. Reason: High salt concentration draws water out of microbial cells by osmosis, preventing their growth.

Solution: Both true, and the reason correctly explains the assertion.

5 (Synthesis). Compare a plant cell and a bacterial cell: name one structure present in both, and one present in only one of them.

Solution: Both have a **cell wall** and **cytoplasm**; plant cells additionally have a true membrane-bound **nucleus** and **chloroplasts**, which bacteria lack (bacteria have a nucleoid instead).

6 (Applied). Why does curd form faster in summer than in winter?

Solution: Lactobacillus bacteria are more active at warmer temperatures, so they ferment lactose into lactic acid faster in summer's warmth than in winter's cold.

7 (Short Answer). What structure in a cell controls what enters and leaves it?

Solution: The **cell membrane**.

8 (Assertion-Reason). Assertion: Decomposition by microorganisms is essential for the environment.

Reason: Microorganisms break down dead matter and recycle nutrients back into the soil.

Solution: Both true, and the reason correctly explains the assertion.

9 (Applied). A farmer growing lentils (a pulse crop) uses less nitrogen fertiliser than a farmer growing wheat. Explain why, referencing a specific microorganism.

Solution: Lentils are legumes, and their root nodules host **Rhizobium** bacteria that fix atmospheric nitrogen into the soil, reducing the need for added fertiliser; wheat lacks this relationship.

10 (Short Answer). Who is considered the first person to observe bacteria, and with what instrument?

Solution: **Antonie van Leeuwenhoek**, using single-lens microscopes he built himself.

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