

Notes for valuers

- Accept answers in the student's own words if the scientific idea is correct.
- Diagrams: give marks for neatness and correct labels; a diagram without labels gets half marks.
- Section D: only one of (A) or (B) is to be valued.

SECTION – A

10 × 1 = 10

1. B) cell
2. A) Robert Hooke
3. B) plant cells
4. A) Lactobacillus
5. B) fungus
6. B) rod-shaped
7. C) a protozoan
8. B) diabetes
9. B) helping the body develop immunity
10. B) bacteria

SECTION – B

3 × 2 = 6

11. Organisms made of only one cell, which does all the life processes, are unicellular. Examples (any two): Amoeba, Paramecium, bacteria, Chlamydomonas, yeast.
12. Malaria, dengue (also chikungunya). Prevention: do not allow water to collect in coolers, tyres, pots and drains; empty and clean containers every week.
13. Antibiotics work only against bacteria, not viruses. Taking them without need, in the wrong dose or not completing the course makes bacteria resistant (antimicrobial resistance), so the medicine stops working when really needed. They may also cause side effects.

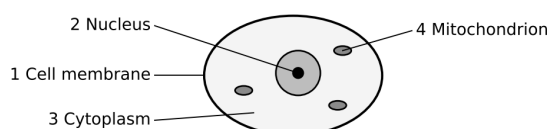
SECTION – C

2 × 4 = 8

14. 1 – cell membrane, 2 – nucleus, 3 – cytoplasm, 4 – mitochondrion.

[$\frac{1}{2} \times 4 + 2$]

Function of the nucleus: controls all the activities of the cell and carries the hereditary (genetic) material.



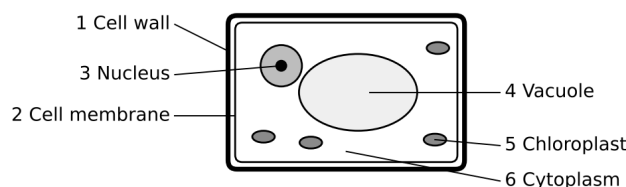
15. Any four: Lactobacillus turns milk into curd; yeast makes bread and idli dough rise (fermentation); Penicillium gives the antibiotic penicillin; Rhizobium fixes nitrogen in the roots of pulses; bacteria and fungi decompose waste into manure; weakened microbes are used to make vaccines. [1 each]

SECTION – D

2 × 8 = 16

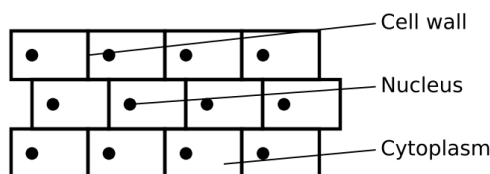
16. A) 1 – cell wall, 2 – cell membrane, 3 – nucleus, 4 – vacuole, 5 – chloroplast, 6 – cytoplasm. [3 + 3 + 2 (diagram)]

Differences (any three): plant cells have a cell wall, animal cells do not; plant cells have chloroplasts, animal cells do not; plant cells have one large vacuole, animal cells have small or no vacuoles; plant cells are usually rectangular, animal cells are usually round or irregular.



16. B) Steps: take a small piece of onion and peel off the thin transparent layer from the inner side with forceps; place it in a drop of water on a glass slide; add a drop of safranin (or iodine) stain and remove extra stain; add a drop of glycerine; cover gently with a cover slip, avoiding air bubbles; observe first under low power and then under high power of the microscope. [5 + 3]

Observation: brick-like cells arranged closely, each with a cell wall, a darkly stained nucleus and cytoplasm.



17. A) Good health means a state of physical, mental and social well-being, not just the absence of disease. [2 + 3 + 3]

Physical: body organs work well; we have energy, eat well and sleep well.

Mental: we can handle stress, think clearly and feel positive.

Social: we get along with family, friends and neighbours and live in a clean, safe community.

Habits (any four): balanced diet; regular exercise or play; 8–9 hours of sleep; washing hands and personal hygiene; clean drinking water; keeping surroundings clean; less screen time; talking about problems with elders.

17. B) (i) Highest: **September** (70 cases); lowest: **June** (12 cases). [2 + 2 + 1 + 3]

(ii) After the monsoon rains, water collects in many places; mosquitoes breed in this stagnant water, so cases rise.

(iii) The **Aedes mosquito** spreads dengue.

(iv) Any four: do not let water stagnate; cover water tanks; use mosquito nets, screens and repellents; wear full-sleeved clothes; spray in drains; see a doctor quickly if there is high fever.

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