

CLASS VIII — SCIENCE (BIOLOGY)

Time: 3 Hours Maximum Marks: 80

GENERAL INSTRUCTIONS

1. All questions are compulsory unless an internal choice is given.
2. The question paper is divided into Sections A, B, C, D and E.
3. Draw neat and properly labelled diagrams wherever required.
4. Write answers in clear and complete sentences.
5. Read each question carefully before answering.

SECTION A — Multiple Choice Questions

16 × 1 = 16 Marks

Q1. Which microorganism is commonly used in the preparation of bread?

- (a) Lactobacillus
- (b) Yeast
- (c) Rhizobium
- (d) Amoeba

Q2. Which of the following is a nitrogen-fixing bacterium?

- (a) Yeast
- (b) Rhizobium
- (c) Plasmodium
- (d) Lactobacillus

Q3. Which method is used for preserving milk for a longer period?

- (a) Fermentation
- (b) Pasteurisation
- (c) Germination
- (d) Nitrogen fixation

Q4. Which of the following is an example of a biodegradable substance?

- (a) Plastic bag
- (b) Glass bottle
- (c) Vegetable peel
- (d) Aluminium foil

Q5. The basic structural and functional unit of life is the:

- (a) Tissue
- (b) Organ
- (c) Cell
- (d) Organ system

Q6. Which cell organelle controls most activities of a cell?

- (a) Cytoplasm

- (b) Nucleus
- (c) Cell wall
- (d) Vacuole

Q7. Which structure is present in a plant cell but generally absent in an animal cell?

- (a) Cell membrane
- (b) Cytoplasm
- (c) Cell wall
- (d) Nucleus

Q8. Which type of reproduction involves only one parent?

- (a) Sexual reproduction
- (b) Asexual reproduction
- (c) Fertilisation
- (d) Internal fertilisation

Q9. The fusion of male and female gametes is called:

- (a) Budding
- (b) Fertilisation
- (c) Fragmentation
- (d) Germination

Q10. Which animal reproduces by budding?

- (a) Hydra
- (b) Cow
- (c) Frog
- (d) Hen

Q11. The period of life when the reproductive organs begin to mature is called:

- (a) Infancy
- (b) Adolescence
- (c) Old age
- (d) Childhood

Q12. Which hormone is mainly responsible for the development of male secondary sexual characteristics?

- (a) Oestrogen
- (b) Testosterone
- (c) Insulin
- (d) Thyroxine

Q13. Which of the following is an endangered species?

- (a) Asiatic lion
- (b) Domestic dog
- (c) Cow
- (d) Buffalo

Q14. A protected area where wild animals live in their natural habitat is called a:

- (a) Zoo
- (b) Wildlife sanctuary
- (c) Aquarium
- (d) Botanical garden

Q15. Which microorganism causes malaria?

- (a) Bacteria
- (b) Virus
- (c) Protozoan
- (d) Fungus

Q16. Which part of a cell is known as the jelly-like substance in which cell organelles are present?

- (a) Cell wall
- (b) Cytoplasm
- (c) Nucleus
- (d) Cell membrane

SECTION B — Very Short Answer Questions

8 × 2 = 16 Marks

Q17. What are microorganisms? Name any two groups of microorganisms.

Q18. Give two useful applications of bacteria.

Q19. Why should antibiotics not be taken without the advice of a doctor?

Q20. Differentiate between a plant cell and an animal cell on any two points.

Q21. What is fertilisation? Name the two types of fertilisation found in animals.

Q22. What is metamorphosis? Give one example.

Q23. What is adolescence? Mention one physical change that occurs during this period.

Q24. State any two measures for the conservation of forests and wildlife.

SECTION C — Short Answer Questions

6 × 3 = 18 Marks

Q25. Explain how microorganisms are useful in the preparation of food products. Give three examples.

Q26. Explain the role of Rhizobium bacteria in maintaining soil fertility.

Q27. Draw a neat labelled diagram of a plant cell and label any six parts.

Q28. Differentiate between sexual and asexual reproduction on the basis of:

- (i) number of parents
- (ii) involvement of gametes
- (iii) similarity of offspring.

Q29. Explain any three major changes that occur in boys or girls during adolescence.

Q30. What is deforestation? Explain any two consequences of deforestation.

SECTION D — Competency / Case-Based Questions

3 × 4 = 12 Marks

Q31. Read the case and answer the questions.

Riya observed that milk kept outside the refrigerator became sour after some time. Her mother explained that certain

microorganisms grow in milk and convert some of its components into acids. She also told Riya that milk can be heated to a particular temperature and then rapidly cooled to reduce harmful microorganisms.

- (a) Name the microorganism commonly associated with curd formation.
- (b) What is the process of converting milk into curd called?
- (c) What is pasteurisation?
- (d) Why should pasteurised milk still be stored properly?

Q32. Read the case and answer the questions.

A student observed onion peel under a microscope. He noticed a regular arrangement of rectangular structures. He also observed a distinct boundary around each structure and a prominent nucleus.

- (a) What are the structures observed by the student?
- (b) Name the outer rigid covering of a plant cell.
- (c) What is the function of the nucleus?
- (d) Why are cells called the basic units of life?

Q33. Read the case and answer the questions.

A forest area was cleared to construct roads and buildings. After a few years, the region experienced soil erosion, reduced rainfall and a decline in wildlife.

- (a) Name the process described above.
- (b) How does it cause soil erosion?
- (c) Why does deforestation affect wildlife?
- (d) Suggest one effective measure to reduce deforestation.

SECTION E — Long Answer Questions

3 × 6 = 18 Marks

Q34. Explain the different modes of reproduction in animals. Describe:

- Asexual reproduction
- Budding
- Binary fission
- Sexual reproduction
- Fertilisation

OR

Explain the life cycle of a frog with the help of a neat labelled diagram.

Q35. Explain the structure and functions of the major parts of a cell. Also differentiate between plant and animal cells.

OR

Draw and explain a labelled diagram of an animal cell.

Q36. What is wildlife conservation? Explain the importance of:

1. Wildlife sanctuaries
2. National parks
3. Biosphere reserves

Also mention three measures that can help conserve biodiversity.