



ST. MARGARET SR. SEC. SCHOOL
MIDTERM EXAMINATION 2023-24
BIOLOGY (O44)
CLASS XI A
SAMPLE PAPER

Time: 3Hrs

MM 70

General Instructions:

- All questions are compulsory.
 - The question paper has five sections and 33 questions. All questions are compulsory.
 - Section–A has 16 questions of 1 mark each; Section B has 5 questions of 2 marks each; Section C has 7 questions of 3 marks each; Section D has 2 case-based questions of 4marks each; and Section E has 3 questions of 5 marks each.
 - There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
 - Wherever necessary, neat and properly labeled diagrams should be drawn.
1. Which of the following cell organelles is involved in the breakdown of organic matter?
(a) Lysosomes (b) Cytoplasm (c) Golgi bodies (d) Mitochondria
 2. The petiole is swollen and spongy in
a) Nepenthes b) Trapa c) Eichornia d) Utricularia
 3. Epidermal hairs are seen in
a) Young roots b) Young stem c) Leaves d) Both a & b
 4. Notochord occurs throughout life and all through the length of the body in
a) Cephalochordata b) Hemichordata c) Urochordata d) Vertebrata
 5. Radial symmetry is found in
a) Coelenterata and Platyhelminthes b) Coelenterata and Echinodermata c) Arthropoda and Mollusca d) Porifera and Coelenterata
 6. The fleshy part of monocot seed is
a) Scutellum b) Endosperm c) radicle d) plumule
 7. Conifers can tolerate extreme environments because of
a) Presence of vessels b) Thick cuticle c) Superficial stomata d) Broad hardy leaves
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 9. Two organisms of same class but different families will be kept under
a) Order b) Genera c) Species d) Phylum
 10. Archae and N₂ fixing bacteria are classified in
a) Kingdom plantae b) kingdom Protista c) Kingdom Monera d) Kingdom animalia
 11. Botanical gardens and zoological parks have
a) Collection of endemic species b) collection of endangered species c) collection of endemic and endangered species d) collection of local plants and animals

12. Which is the common characteristic of multicellular fungi, filamentous algae and protonema of mosses?

- a) Mode of nutrition b) Diplontic life cycle c) Multiplication by fragmentation d) Members of Plant Kingdom

In the following questions, a statement of assertion is followed by a statement of reason.

Mark the correct choice as:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.**
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

13. Assertion: Gymnosperms do not produce seeds.

Reason: The ovules of gymnosperms are not enclosed in ovaries.

14. Assertion: Cyanobacteria are blue green algae with all prokaryotic structures.

Reason: They are green due to presence of chlorophyll.

15. Assertion: Lysosomes are membrane bound cell organelle.

Reason: Lysosomes help in destroying nonfunctional cells

16. Assertion: Prop roots arise from the branches of Ficus tree.

Reason: Ficus tree has a large canopy.

SECTION B

17. a) Pteridophytes show heterospory. How is it evolutionary significant?

b) Why is bryophyte called as amphibians of plant kingdom?

18. Write down the differences between Bacteria and Fungi based

a) Type of cytoplasmic ribosome b) Location of extra chromosomal DNA

19. Give scientific reasons for the following statements.

a) Plant body of alga is a thallus.

b) Virus is a link between living and nonliving things.

20. Draw a neat labelled diagram illustrating digestive system of

21. Study the given table and fill in the blanks (a),(b),(c) and (d)

Phylum	characters
Chaoanocytes	(a)
(b)	Jointed legs
Molluscs	(c)
(d)	Metagenesis

SECTION C

22. Compare and contrast Urochordata, cephalochordate and chordate.

23. How is epidermis modified in roots , stem and leaf?

24. Describe the structure of flagellum.

25. Give an account of endocrine system of frog.

26. Distinguish between

a) Liverworts and Moss

- b) Haplontic and diplontic life cycle
- c) Gametophyte and sporophyte

27. Explain the parts of a fruit taking coconut as an example

28. Enumerate the salient features of Phylum Platyhelminthes

SECTION D

29. Frogs can live both on land and in freshwater and belong to class Amphibia of phylum Chordata. The most common species of frog found in India is *Rana tigrina*. They do not have constant body temperature i.e., their body temperature varies with the temperature of the environment. You might have also noticed changes in the colour of the frogs while they are in grasses and on dry land. They have the ability to change the colour to hide them from their enemies (camouflage). This protective coloration is called mimicry. You may also know that the frogs are not seen during peak summer and winter. During this period they take shelter in deep burrows to protect them from extreme heat and cold.

- a) Why can't we see frogs in peak summers and winters? (2)
- b) Write any features of frogs which help them to survive in their habitat. (2)

30. These studies showed that the cell membrane is composed of lipids that are arranged in a bilayer. Also, the lipids are arranged within the membrane with the polar head towards the outer sides and the hydrophobic tails towards the inner part. This ensures that the nonpolar tail of saturated hydrocarbons is protected from the aqueous environment. The lipid component of the membrane mainly consists of phosphoglycerides. Later, biochemical investigation clearly revealed that the cell membranes also possess protein and carbohydrate. The ratio of protein and lipid varies considerably in different cell types. In human beings, the membrane of the erythrocyte has approximately 52 per cent protein and 40 per cent lipids.

- a) How are proteins arranged in plasma membrane?
- b) What provides quasifluid nature to the plasma membrane? Explain. (2+2)

SECTION E

31. Describe the mitotic events with the help of neat labeled diagrams

OR

Prophase I of meiosis reduces the chromosome number into half. Explain the events which leads to the reduction of chromosome number? (5)

- 32. a) State the identifying anatomical features of a monocot root
- b) Distinguish between a dicot and a monocot root with the help of diagrammatic sketches. (2+3)

OR

How does the leaf anatomy of a monocot plant differ from a dicot plant? Explain with the help of suitable illustrations.

- 33. a) What are breathing roots? How does it help the plant to survive in its habitat?
- b) Distinguish between prop root and stilt root.
- c) What is an inflorescence? Explain its types. (1+1+3)