

Class - XI
Subject - Biology (Theory)

Time - 3 hrs.

M.M. 70

General Instructions :-

- (i) *All questions are compulsory.*
- (ii) *The question paper consists of five Sections A, B, C, D and E. Section A contains 5 questions of one mark each, Section B is of 5 questions of two marks each, Section C is of 12 questions of three marks each and Section D is of one question of four marks and Section E is of three questions of five marks each.*
- (iii) *There is internal choice in one question of 2 marks, one questions of 3 marks and all three questions of 5 marks.*
- (iv) *Draw diagrams wherever necessary.*

SECTION – A

1. What is mixotrophic mode of nutrition, cite an example?
2. Which algae is used for commercial production of agar.
3. Which class of vertebrates include viviparous forms.
4. Where is ossein found.
5. What does the abbreviation ICZN stand for.

SECTION – B

6. Distinguish between simple epithelium and compound epithelium.

OR

Differentiate between aereolar and adipose tissue.

7. Where are companion cells located in flowering plants? What is their function ?

8. What is vexillary aestivation, give an example ?

9. Differentiate between polyp and medusa body form of Chidarians.

10. What is protonema stage in the life cycle of a moss.

SECTION – C

11. How does substrate concentration affect enzyme activity, explain. *it is first stage of moss in which a green filamentous structure arise*

12. Differentiate between (a) nucleoside and a nucleotide.

(b) Primary and Secondary metabolites

13. Why cell membranes referred to as protein icebergs in a sea of lipids, explain the statement and depict with the help of a diagram.

OR

Explain the ultra structure of chloroplast, why is it called semi-antonymous.

14. Differentiate between skeletal and smooth muscles.

15. Draw a labelled diagram of alimentary canal of cockroach.

16. Differentiate between Sapwood and heartwood.

17. What are sclereids ? Where are they found.

18. What is placentation? Describe free central type of placentation, give an example.

19. Compare the salient features of Monera and Protista.

20. ✓ What is imbibition, give its importance.
21. ✓ What is hydroponics, what is its importance.
22. ✓ Draw a schematic diagram to show alternation of generation in Bryophytes.

SECTION – D

23. In the village, Arvind observed ~~that~~ some white substance spread on the crops, he asked his grandfather about it. Grandfather replied that it is NPK fertilizer to get better yield.

- (i) What is NPK fertilizer ?
- (ii) What is the role of phosphorous and potassium in plants ?
- (iii) What is exhibited by grandfather's action.

SECTION – E

24. ✓ (a) With the help of diagram explain the stages of mitosis in an animal cell.
- (b) Explain briefly the process of cytokinesis in plants.

OR

What is endomembrane system, which organelles are a part of this system. Explain any two.

25. ✓ Describe the process of secondary growth in dicot stem.

OR

- (a) Differentiate between cartilaginous and bony fishes.
- (b) Give diagnostic features of mollusca.

26. (a) Explain the theory of Transpiration pull for ascent of sap.
- (b) What is root pressure, what is its importance.

OR

- (a) Explain the formation of root nodules in leguminous plants.
- (b) Give diagrammatically representation of the steps involved in conversion of atmospheric nitrogen into ammonia in root nodules.