

STD XI

FIRST TERM EXAM

Time: 3hrs

28 -9-14

BIOLOGY (THEORY)

Marks: 70

General instructions:

- i) All questions are compulsory.
 - ii) This question paper consists of four sections A, B, C, and D. 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, one value based question of 4 marks and Section D is of 3 questions of five marks each.
 - iii) There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of 3 marks and all questions of 5 marks each. A student should attempt only one of the alternatives in such questions.
 - iv) Wherever necessary, the diagram drawn should be neat and properly labeled.
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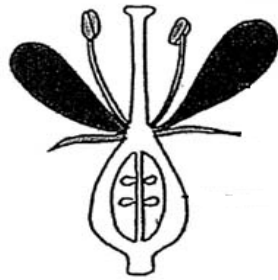
SECTION A

1. Give scientific term for the following: (1)
 - a) root that helps to get oxygen for respiration
 - b) The pattern of arrangement of leaves on the stem.
2. State the location and function of lenticels. (1)
3. Golgi apparatus remains in close association with Endoplasmic reticulum. Why? (1)
4. Name the most abundant protein in the whole of the biosphere. (1)
5. The transverse section of two plant material shows the following anatomical features. What will you identify them as? (1)
 - a) Vascular bundles are conjoint, closed and surrounded by sclerenchymatous bundle sheath.
 - b) Vascular bundles conjoint, open and arranged in a ring.

SECTION B

6. If the head of a Cockroach is cut off, it will still live for one week. Give reason. (2)
7. a) How are ribosomes of Prokaryotes and Eukaryotes different? (2)
b) Name the scientist who first observed ribosomes under Electron microscope.
8. Study the given pictures, identify the type of flower (A) and (B) based on the position of Calyx, Corolla, Androecium in respect of the ovary on the thalamus. Give one example each. (2)

(A)



(B)

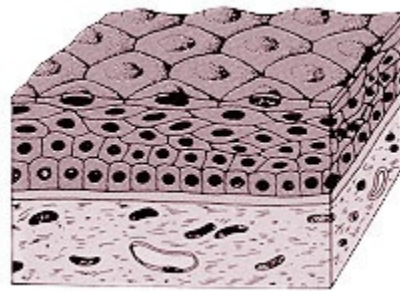


9. Differentiate between the following tissues (a) and (b), and specify one location of each.(2)

(a)



(b)

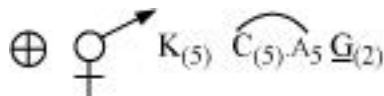


OR

Mention the type of tissue found in the following parts:

- a) inner surface of fallopian tube
- b) walls of blood vessels
- c) inner lining of pancreatic ducts
- d) tubular part of nephron

10. From the given floral formula, identify the family and describe the androecium and gynoecium with technical terms. (2)

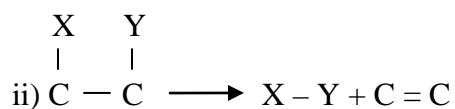
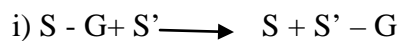


SECTION C

11. a) A specialized differentiated form of cell membrane called mesosome is the characteristic of prokaryotes. Give functions of mesosome. (3)

b) Define cell cycle.

12. a) Mention the type of enzymes that catalyses following reactions: (3)



- b) State the significance of co-factor in an enzyme.
- c) Name the fastest known enzyme.
13. a) Define guttation. (3)
- b) Name the scientist who won Nobel prize for mapping the pathway of Carbon assimilation in photosynthesis.
- c) Which are the two main components that determine water potential?
14. How are chromosomes classified based on the position of centromere? Explain (3)
15. Describe different regions of the root tip of a dicot plant. (3)
16. Explain the Fluid Mosaic model of cell membrane. Name the scientists who proposed this model. (3)
17. Draw a neat diagram to show the L.S of phloem and label the following parts: (3)
- a) Sieve tubes b) Companion cell c) Phloem parenchyma

OR

- Draw a neat labeled diagram to show the structure of a monocot seed.
18. All enzymes are proteins and the enzyme action is affected by change in the tertiary structure of protein. Explain any three conditions that affect the enzyme action. (3)
19. List the events that occur in a cell during interphase stage of cell cycle. (3)
20. Water absorbed by root hairs move into deeper layers of root by two distinct pathways. Explain the pathways. (3)
21. Give the functions of the following: (3)
- a) Intercalated disc b) Ommatidia c) Malpighian tubules
22. Illustrate the following: (3)
- a) Glycosidic bond b) Peptide bond (c) Phosphodiester bond
23. Wood is a major product of metabolism in trees. It has been in use for human needs even before metals were discovered. The characteristic features of wood depend on its tissue components and time of production. (4)
- a) Botanically what does the term “wood” mean?
- b) How does early wood differ from late wood? (give one difference)
- c) How can we estimate the age of a tree?
- d) Heart wood is preferred for making furnitures. Why?

SECTION D

24. a) Compare the anatomy of a dorsiventral leaf and isobilateral leaf. (5)
- b) Name the tissues involved in secondary growth of dicot plants.
- c) How is cambial ring formed during secondary growth in dicot stem?

OR

- a) How does periderm formation take place in a dicot stem?
- b) Distinguish between the following:
- i) Endarch and exarch xylem. ii) radial and conjoint vascular bundles
25. a) Mention the key events of prophase and metaphase of equational division in a plant cell.
- b) How is cytokinesis in plant cell different from animal cell? (5)

OR

- a) List the main events of pachytene stage of prophase I.
- b) What is the significance of meiosis?
- c) Describe the following terms:
- i) Synapsis ii) Chiasmata
26. Explain pressure flow hypothesis of translocation of sugars in plants. (5)

OR

Explain the role of root pressure and transpiration pull in transport of water in plants.

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