

Time: 3 Hours 15 Minutes

Max. Marks: 70

PART A

I. Answer the following questions in one word or one sentence each: 10 × 1 = 10

1. What is an herbarium
2. Define metabolism?
3. What is phyllotaxy?
4. How does diffusion differ from active transport?
5. What are thylakoids?
6. Define plasmolysis.
7. In which muscular tissue intercalated discs are found?
8. Name the stage of cell cycle where DNA replication takes place?
9. Name the nodule forming bacteria in non leguminous plants.
10. Define tidal volume.

PART B

II. Answer any five of the following questions in about 3-5 sentences each wherever applicable. 5 × 2 = 10

11. Write the difference between virus and viroids.
12. What are radial and conjoint vascular bundles?
13. What is binomial nomenclature? Who proposed it?
14. Draw a neat labeled diagram of Nostoc filament.
15. Write any two physiological effects of Auxins on plants.
16. Mention the significance of Mitosis.
17. List the functions of HCl in digestion.
18. What are myofibrils? Name two important proteins present in myofibrils.

PART C

III. Answer any five of the following questions in about 40-80 words each wherever applicable. 5 × 3 = 15

19. Explain the mechanism of blood clotting.
20. Define the following: a) Differentiation b) Dedifferentiation c) Redifferentiation
21. What are micronutrients? Mention any four.
22. Explain the process of Carbohydrate digestion in human alimentary canal.
23. Write a note on collenchyma tissue.
24. a) Draw a neat labeled diagram of stomatal apparatus.
b) Mention one difference between Dicot and Monocot stomatal apparatus.
25. Draw a neat labeled diagram of T 4 bacteriophage.
26. With reference to lipids, state what are,
a) oils b) fats c) waxes

PART D
SECTION I

IV. Answer any four of the following questions in 200-250 words each, wherever applicable.

4 × 5 =
20

27. List the general characters of phylum Annelida.
28. Explain the structure of chloroplast with a neat labeled diagram.
29. Explain the classification of Enzymes.
30. List the differences between chondrichthyes and osteichthyes.
31. Mention the types of placentation with an example.
32. Explain transpiration pull theory of ascent of sap

SECTION II

V. Answer any three of the following in about 200-250 words each wherever applicable:

3 × 5 = 15

33. Define Law of limiting factors. Explain four external factors affecting the rate of photosynthesis.
34. a) Briefly explain alcoholic fermentation.
b) What is R.Q? Name the respiratory substrate whose R Q value is one.
35. Describe the conducting system of heart.
36. Draw a neat labeled diagram of Neuron.
37. List any five hormones of pituitary gland and write one function of each.