

- i) This question paper consists of four parts A, B, C and D. Part D consists of Section - I and Section - II.
- ii) All the parts are compulsory.
- iii) Draw diagrams wherever necessary, unlabelled diagrams or illustrations do not attract any marks.

PART - A

I Answer the following questions in one word or one sentence each.

10×1=10

- 1) What is a taxon?
- 2) Name the type of root modification in banyan.
- 3) Name the family in which the flowers show papilionaceous corolla.
- 4) What is closed vascular bundle?
- 5) Name the type of plastids which store carbohydrates.
- 6) During which stage does synapsis occur?
- 7) What are Porins?
- 8) Name the enzyme which helps in nitrogen reduction in prokaryotes.
- 9) Which type of cells of gastric glands secrete HCl?
- 10) What is serum?

PART - B

II Answer any FIVE of the following questions in 3 to 5 sentences each wherever applicable.

5×2=10

- 11) Mention any two major groups of protozoans with an example for each.
- 12) Distinguish between diploblastic and triploblastic animals. Give an example for each.
- 13) What is phyllotaxy? Name any two types.
- 14) What are nephridia? Mention their types.
- 15) Draw a neat labelled diagram of a mitochondrion.
- 16) Write the physiological effects of cytokinins in plants.
- 17) What are joints? Name any two types of joints in man.
- 18) What is a) Tetany b) Arthritis

PART - C

III Answer any FIVE of the following questions in 40 to 80 words each wherever applicable.

5×3=15

- 19) Briefly explain any three types of taxonomical aids.
- 20) Draw a neat labelled diagram of phloem.
- 21) Mention the significance of mitosis.
- 22) What is photoperiodism? Classify the plants based on photoperiodism.
- 23) Briefly explain the role of enzymes in the digestion of disaccharides.
- 24) Briefly describe the transport of CO₂ in the blood.
- 25) Write a note on any three disorders of circulatory system.
- 26) Briefly explain the role of lungs, liver and skin as excretory organs.

(P.T.O.)

PART - D Section - I

IV Answer any FOUR of the following questions in about 200 to 250 words each wherever applicable. $4 \times 5 = 20$

- 27) List any four important characters of gymnosperms. Give two examples.
- 28) Write the general characters of class Aves.
- 29) Draw a neat labelled diagram of male reproductive system of cockroach.
- 30) Describe the fluid mosaic model of cell membrane. 3
- 31a) Briefly describe the factors affecting enzyme activity. 2
 - b) What is a homopolymer? Give an example.
- 32) Transpiration and photosynthesis in plants is a compromise. Substantiate

Section - II

V Answer any THREE of the following questions in 200 to 250 words each wherever applicable. $3 \times 5 = 15$

- 33) Describe the nodule formation in leguminous plants.
- 34) Write the schematic representation of Z-scheme of light reaction.
- 35) a) What is respiratory quotient (RQ)? 4
Mention the RQ values for carbohydrates, fats and proteins during aerobic respiration. 1
 - b) The respiratory pathway in plants is called amphibolic pathway, Why?
- 36) Draw a neat labelled diagram of sagittal section of the human brain.
- 37) Name the hormones which are responsible for the following functions:
 - a) Stimulates the resorption of water and electrolytes in kidneys.
 - b) Maintains sleep wake cycle.
 - c) Regulates the blood calcium level.
 - d) Provides immunity.
 - e) Supports pregnancy.