

M.Sc. Sem.-1 Examination

403

Bio-informatics

January-2024

Time : 2-30 Hours]

[Max. Marks : 70

Q1 (A) Explain Singer and Nicolson's fluid mosaic model of plasma membrane. [7 marks]

(B) Give Structure and Functions of Plasmodesmata. [7 marks]

OR

Q1 (A) Give a note on Nucleus in detail. [7 marks]

(B) Give note on functions of Plant Vacuoles. [7 marks]

Q2 (A) Give organization and Role of Microtubules and Microfilaments. [7 marks]

(B) Give functions of Lysosomes. [7 marks]

OR

Q2 (A) Write a brief note on various phases of cell cycle. [7 marks]

(B) Explain structure and functions of Golgi Bodies. [7 marks]

Q3 (A) Explain in detail: Density Gradient centrifugation. [7 marks]

(B) Give basic principle of Gel electrophoresis? Write down the different types of electrophoresis along with its advantages and disadvantage. [7 marks]

OR

Q3 (A) Write down the principle, application, advantages and disadvantages of colorimeter. [7 marks]

(B) What is Chromatography? Write down different types of chromatography and explain any two types in detail. [7 marks]

Q4 (A) Explain the role of Gibberellins and cytokinin in detail. [7 marks]

(B) Write the difference between Cyclic and non-cyclic photophosphorylation. [7 marks]

OR

Q.4 (A) Explain the stages of germination. [7 marks]

(B) Explain different types of Plant movements. [7 marks]

Q5 Answer the following questions. (Any seven) [14 marks]

1. What is the role of carbohydrates in cell membrane?
2. What is the unit of measurement used for expressing dimension (size) of cells?
3. What is Apoptosis?
4. In leaves, name the cell organelle and pigment that is responsible for green colour.
5. What is the key role of Cyclins and Cyclin - dependent Kinase in cell?
6. Which are the basic selection criteria for choosing the appropriate centrifuge for research?
7. Write down differences between rate-zonal and Isopycnic centrifugation.
8. Which are the clinical applications of electrophoresis?
9. Which are the factors affecting the electrophoresis?
10. Which are the applications of FISH?
11. Explain the role of C4 cycle.
12. Explain role of Gibberellins.

