

(3 Hours)

(Total Marks : 100)

Please check whether you have got the right question paper.

- N.B:** 1. All questions are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. All questions carry equal marks.

- Q.1** Attempt any two of the following **20**
- Describe the structure and function of nucleolus.
 - Give a detail account of giant chromosomes
 - Give an account of RNA Polymerases and promoters involved in eukaryotic transcription.
 - Describe the process of initiation of translation in eukaryotes.
- Q.2** Attempt any two of the following **20**
- Differentiate between imbibition and osmosis. State the significance of osmosis in absorption of water in plants.
 - State the various modes of transpiration in plants and comment on its significance.
 - What is meant by passive transport? Describe the various modes of passive transport of solutes in plants.
 - Explain Munch hypothesis to explain process of sieve tube translocation.
- Q.3** Attempt any two of the following **20**
- What is bioremediation? Discuss about the factors involved in bioremediation.
 - Describe the process of bioaccumulation of pollutants in the ecosystem.
 - With respect to phytoremediation explain the following terms a) Phytoextraction b) Phytodegradation c) Phytostabilization d) Rhizofiltration
 - Define plant succession. Explain any three stages of a hydrosere citing examples of plants in each stage.
- Q.4** **20**
- Explain techniques and factors affecting somatic embryogenesis.
 - Explain the steps involved in micropropagation with reference to cultivation of Orchids.
 - Explain the technique of isolation of protoplast. Add a note on its applications.
 - Describe the methodology for preparation of synthetic seeds.
- Q.5** Attempt any four of the following **20**
- Functions of vacuole
 - Capping
 - Aminoacylation of t-RNA molecule
 - Applications of somatic hybridization in agriculture
 - Monoclimax theory
 - Phytodegradation