

## BOTANY

1. Write critical notes on any four of the following: (4x7½=30)
- (a) One-step multiplication curve of T2 phage
  - (b) Development of rhizophore in Selaginella
  - (c) Role of Phytoalexins in disease resistance in plants.
  - (d) Protoplast isolation and its culture
  - (e) Application of growth regulators in plant development
  - (f) Mechanisms of transport of organic solutes in phloem.

### Part I

2. (a) Describe the life-cycle of Batracho-spermum.  
(b) Discuss the role of microbes in Medicine.  
(c) Write the causal organism, symptoms and methods of control of black-stem rust of wheat. (30)
3. (a) Describe the development of female cone of Pinus.  
(b) Discuss the significance of heterospory in Pteridophytes.  
(c) Explain with suitable example the difference between embryogeny in dicotyledons and monocotyledons. (30)
4. (a) Write in brief the economic importance of Atropa and Cinchona.  
(b) Discuss the concept of various floristic regions of India.  
(c) Why is Compositae regarded as the most highly evolved family? (30)

### Part II

5. (a) Mention different types of Mutations? Comment upon their significance in evolution and crop improvement.  
(b) What is Genetic Drift? How does gene recombination take place in populations?  
(c) Write a short account on male sterility and its significance in plant breeding. (30)
6. (a) Photosynthesis helps in nitrogen metabolism of plants Justify.  
(b) Describe in brief the biosynthetic pathway of Gibberellin synthesis.  
(c) Describe the Agrobacterium mediated gene transfer in plants. (30)
7. (a) Write a short note on Endangered Plants.  
(b) What is the concept of Biodiversity? Explain why temperate forests are less productive than tropical forests.  
(c) What are transgenic plants? Discuss their role in agriculture. (30)