

BOTANY

1. Write critical notes on any four of the following:

(4×7½=30)

- (a) Economic impotence of fungi
- (b) Male sterility in plants
- (c) Role of phytochrome in photoperiodism
- (d) Use of apomixis in plant breeding
- (e) Seed habit and its significance in Sillaginiales
- (f) Biostatistics and its application

PART I

2.(a) Write different mode of preservation of microorganism. (10)

(b) Describe in brief the reproductive behavior of lichens. (10)

(c) Describe the life-cycle of *Lyellia bartenschlagii*. (10)

3.(a) Explain the mechanisms of dispersal of spores in moss. (10)

(b) What are medullary vascular bundles? Describe with reference to anomalous secondary growth in *Boerhaavia*. (10)

(c) Role of phosphate solubilizing bacteria in agriculture. (10)

4. (a) Write about the endemic plants of India. (10)

(b) Explain diagrammatically the floral features of Solanaceae and Compositae. (10)

(c) Write the botanical name and its economic importance of the following:

- (i) Opium
- (ii) Ginger
- (iii) Cinchona
- (iv) Turmeric
- (v) Cardamom

(5*2=10)

PART II

5.(a) Define euchromatin and heterochromatin. Discuss the chemical composition of chromosomes found in higher plants. (10)

(b) What is allopolyploid? Discuss the method of development of triticales on commercial scale. (10)

(c) How does operon regulate the metabolic processes in prokaryotes? Explain with suitable example.

- (10)
- 6.(a) Explain the process of oxidative phosphorylation for the synthesis of ATP. (10)
- (b) Auxin-Cytokinin ratio affects root-shoot development in callus. Justify. (10)
- (c) What is Heterosis? How does physical basis of gene transfer help in crop improvement? (10)
- 7.(a) What is the concept of Biodiversity? Describe the different strategies used for biodiversity conservation. (10)
- (b) What are the impacts of global warming on plant community? Discuss their causes and remedies. (10)
- (C) How can we produce recombinant DNA? Describe their applications in producing transgenic plants. (10)

