

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Mixing of sub questions is not allowed.
 4. Draw diagrams wherever necessary.

- Q.1 a) Explain 'Embryo rescue' State the factors involved in embryo rescue. 06
- b) With the help of suitable diagram explain the regions of Ti plasmid, its transfer and integration. 06
- OR
- c) What is Somatic embryogenesis? State its advantages and disadvantages. 06
- Q.2 a) Write a note on herbicide resistant plant. 06
- b) Write a note on transgenic fruits. 06
- OR
- c) Write the steps for production of Golden rice. 06
- Q.3. a) Comment on phenyl propanoid pathway and give significance of the same. 06
- b) Write a note on alkaloids. 06
- OR
- c) Give the classification of secondary metabolites on the bases of chemical structure and give examples. 06
- Q.4 a) Explain 2 approaches of gene prediction in detail (homology and ab initio)? 06
- b) Write note on Clustering technique in microarrays analysis(any one in detail) 06
- OR
- c) Explain intra molecular method for protein comparison in detail? 06
- Q.5 Write short note : (ANY THREE) 12
- a) What are metabolic pathways? Mention any one database.
 - b) Write note on scop database.
 - c) Explain vector less DNA transfer in plants.
 - d) Application of Therapeutic and industrial enzymes.
 - e) Explain Somaclonal variation.