

B.Sc. (H) Botany Semester VI

Plant Biotechnology

Sample Questions

1. Restriction endonucleases are molecular scissors. Elaborate.
2. *Agrobacterium tumefaciens* is a natural genetic engineer. Explain.
3. Discuss biosafety issues related to genetically modified organisms.
4. What do you mean by antisense RNA technology? Describe it with reference to Flavr Savr tomato?
5. With the help of suitable diagram, explain the structure of Ti plasmid. How can it be modified for use as a vector for plant transformation?
6. Explain the technique of protoplast isolation, fusion and culture. Give two examples of intra and/or inter specific hybrids produced by somatic hybridization.
7. Describe various methods of selection of transformed organism in DNA recombinant technology. How the role of selectable markers are different from reporter genes.
8. Describe the structure of Ti plasmid. With suitable illustrations explain *Agrobacterium* mediated transformation via cointegrate **OR** binary vector approach.
9. Describe with examples various direct methods of gene transfer used in plant biotechnology.
10. Discuss steps involved in cDNA library construction. Explain how it is better than genomic DNA library.
11. Enumerate the various types of cloning vectors used in plant biotechnology with special reference to different prokaryotic vectors.