

Your answers should be specific to the questions asked.  
Draw neat labeled diagrams wherever necessary. Answer all questions

**LONG ESSAY (Answer any TWO)****2 X 20 = 40 Marks**

1. What is Biotransformation? How it is effected? Give its applications.
2. Discuss the role of PCR in gene mapping and give an account of RFLP and RAPD.
3. Name the various methods of crop quality improvement. Give a detailed account of any two of them.

**SHORT ESSAY (Answer any FIVE)****5 X 10 = 50 Marks**

4. What is Cell cycle and Cell signaling? Give the role of each in plant genetics.
5. Give an account o In-situ conservation of germ plasm.
6. Detail out the role of Vectors in Gene Transfer.
7. Write a note on Autoradiography and Electrophoresis.
8. What are Transgenic plants? Give its applications with suitable examples.
9. What are the methods available for enzyme isolation and purification? Give a detailed account of them.

**SHORT NOTES****2 X 5 = 10 Marks**

10. Hairy root culture and its applications.
11. Synthetic seeds.

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