

**N.B :All Questions Are Compulsory
: Draw Diagram Where Necessary**

- Q.1 a) What is mass spectrometry technique? Explain any one type. 8
- b) What are global profiling techniques? Explain LCMS. 7
- OR**
- Q.1 c) Describe LC/MS/MS technique in detail. Enlist its uses and applications. 8
- d) Explain “DNA microarray technique” basic steps with well labeled diagram. 7
- Q.2 a) What are the techniques involved in gene manipulation of plants? 8
- b) Describe genome organization in prokaryotes. 7
- OR**
- Q.2 c) Compare and contrast prokaryotic genome and eukaryotic genome. 8
- d) What is GMO? Give its applications? 7
- Q.3 a) Describe GEO database in detail. Explain MAML used for microarray data analysis. 8
- b) Explain various tools for analyzing human genome w.r.t to NCBI database. 7
- OR**
- Q.3 c) Explain siRNA technology in detail with labeled diagram? Enlist applications and uses. 8
- d) Write note on : 7
- I. Promises of microarray technology in treating diseases.
- II. FISH technique
- Q.4 a) “Protein- protein interaction can be studied using STRING database” in various species explain in detail. 8
- b) Explain any 2 experimental based techniques for studying protein–protein interaction. 7
- OR**
- Q.4 c) Write detailed note on MIPS. How it is different from STRING database. 8
- d) Describe “Yeast 2 Hybrid” approach with well labeled diagram 7

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