



**MOLECULAR BIOLOGY**  
**PAPER IV (RS 2 & RS 3)**

**Q.P. CODE: 9244**

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

**LONG ESSAY (Answer any TWO)**

**2 X 20 = 40 Marks**

1. What is mapping? Explain principle and process of mapping of any two human disease genes.
2. Explain the principle, process and applications of gene cloning.
3. Explain the organization of signal transduction pathway of cell communication.

**SHORT ESSAY (Answer any FIVE)**

**5 X 10 = 50 Marks**

4. What are genetic elements that control gene expression?
5. Explain the strategies for production of recombinant Insulin.
6. What is apoptosis? Explain various events and regulation of apoptosis.
7. Explain the peptide chemistry and peptidomimetics.
8. Explain the structure and functions of plasma membrane.
9. Explain the principle, process and modifications of polymerase chain reaction technique.

**SHORT NOTES**

**2 X 5 = 10 Marks**

10. Monoclonal antibodies
11. Write a note on nucleic acid technologies.

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