

GUJARAT TECHNOLOGICAL UNIVERSITY**B E Sem-VI Examination May 2011****Subject code: 160401****Subject Name: Advanced Molecular Biology-II****Date: 16/05/2011****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Describe Branch Migration with appropriate diagram **07**
 (b) Discuss on conservative site specific recombination and DNA rearrangements arising due to the same. **07**

Q.2 (a) Explain the Double Strand Break (DSB) Repair model for Homologous Recombination **07**
 (b) Explain the mechanism of Recombination by a Serine Recombinase with suitable diagram. **07**

OR

(b) Define transposition and general characteristics of Transposable elements. **07**

Q.3 (a) Write a brief note on DNA Transposons. **07**
 (b) Explain the Cut and Paste Mechanism of Transposition **07**

OR

Q.3 (a) Discuss on Conjugation by *E. Coli* F factor **07**
 (b) Explain how Hfr strains arise **07**

Q.4 (a) Explain in brief the key steps for transformation in *Streptococcus Pneumoniae* **04**
 (b) Explain life cycle of T4 phage **05**
 (c) Explain the process of DNA fingerprinting with neat and labeled diagram **05**

OR

Q.4 (a) Diagrammatically represent the cycle for generalized transduction **04**
 (b) Explain life cycle of Retrovirus with a neat and labeled diagram. **05**
 (c) Write a short note on Spliceosome machinery. **05**

Q.5 (a) Discuss Chain termination method of DNA sequencing with its modifications **07**
 (b) Explain mechanism of splicing by group I introns. **07**

OR

Q.5 (a) Explain different techniques of physical mapping of genes. **07**
 (b) Write a short note on gene targeting and gene replacement. **07**
