

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 160401****Date: 19-05-2014****Subject Name: Advanced Molecular Biology –II****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) Highlight on the process and mechanism of DNA mobilization during conjugation. **07**  
(b) Explain Chain Termination method of DNA sequencing. **07**
- Q.2** (a) Elucidate on Fluorescent In Situ Hybridization technique with its applications. **07**  
(b) Explain abortive transduction with a suitable diagram. **07**
- OR**
- (b) Write a short note on splicing machinery used to splice nuclear RNA. **07**
- Q.3** (a) Explain mechanism of splicing of nuclear RNA with possibilities of different errors. **07**  
(b) Differentiate between generalized and specialized transduction. **07**
- OR**
- Q.3** (a) What is F prime? How it is generated? **07**  
(b) What is HFr? Explain conjugation of HFr strain. **07**
- Q.4** (a) Compare the structural features of RNA mediated and DNA mediated transposition giving examples. **07**  
(b) Explain structure of Retrovirus and T4 phage. **07**
- OR**
- Q.4** (a) State the peculiar characteristics of autonomous and non autonomous transposable elements. **07**  
(b) Explain lifecycle of T phage. **07**
- Q.5** (a) How patch products are generated during homologous recombination? **07**  
(b) How competence can be developed artificially emphasizing on the divalent cation method? **07**
- OR**
- Q.5** (a) Explain the development of natural competence in *Streptococcus Pneumonia*. **07**  
(b) Schematically represent the meiotic recombination pathway. **07**

\*\*\*\*\*