

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER–EXAMINATION – MAY- 2012****Subject code: 160401****Date: 09/05/2012****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) Explain Life cycle of Retrovirus with a suitable diagram. **07**
(b) Explain splicing machinery mediated by spliceosome machinery. **07**
- Q.2** (a) Explain in brief: a) genetic mapping b) genetic linkage **07**
c) DNA fingerprinting.
(b) Explain any one DNA sequencing method. **07**
OR
(b) Elaborate on the polymerase chain reaction. **07**
- Q.3** (a) Explain Conjugation phenomena by *E coli* F factor **07**
(b) Define transduction and briefly explain the types of transduction. **07**
OR
- Q.3** (a) Elaborate on Hfr conjugation and chromosomal transfer **07**
(b) Explain applications of generalized transduction. **07**
- Q.4** (a) Explain site specific recombination by a serine recombinase. **07**
(b) State the general characteristics of transposable elements. **07**
OR
- Q.4** (a) Explain site specific recombination by a tyrosine recombinase. **07**
(b) Explain in brief the genetic organization of different classes of transposable elements. **07**
- Q.5** (a) Define: a) Branch Migration b) Resolution c) Crossing Over **07**
(b) Explain the development of natural competence in *Streptococcus* **07**
Pneumonia.
OR
- Q.5** (a) Define: a) Recombination b) Holliday Junction **07**
c) Heteroduplex DNA.
(b) Explain the phenomena of transformation in gram negative bacterial cell **07**
by giving specific example.
