

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-Vth Examination December 2010

Subject code: 150401

Subject Name: Advanced Molecular Biology – I

Date: 13 /12 /2010

Time: 03.00 pm - 05.30 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 briefly steps of gene cloning in detail with a suitable diagram. **07**
(b) Explain various types of mutations in detail with a suitable illustration. **07**
- Q.2** (a) Explain role of mismatch repair in maintaining replication fidelity. **07**
(b) Explain positive regulation of transcription with a suitable example. **07**
- OR**
- (b) Explain negative regulation of transcription with a suitable example. **07**
- Q.3** (a) Explain construction of cDNA library with its steps. **05**
(b) Give types of restriction endonucleases. **03**
(c) Explain Base excision repair in detail. **06**
- OR**
- Q.3** (a) Describe Gene therapy and its various applications. **05**
(b) Explain Ames Test in brief. **03**
(c) Explain nucleotide excision repair in detail. **06**
- Q.4** (a) Explain Polymerase Chain reaction in detail with its modifications. **07**
(b) Write a short note on attenuation. **05**
(c) Define reversion and suppression. **02**
- OR**
- Q.4** (a) Explain Southern hybridization in detail with a neat diagram. **07**
(b) Explain feedback inhibition by end product of the pathway. **05**
(c) Define Transition and Transversion mutation. **02**
- Q.5** (a) Explain concept of catabolite repression. **06**
(b) Describe regulation by covalent modification. **05**
(c) What are the disadvantages of using *E.coli* as a host? **03**
- OR**
- Q.5** (a) What are the properties for a good vector? Explain any two vectors used in *E.coli* **06**
(b) Write a note on regulation of gene expression in eukaryotes at translational level. **05**
(c) Narrate any three applications of genetic engineering. **03**
