

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 150401****Date: 11-01-2013****Subject Name: Advanced Molecular Biology - I****Time: 02:30 pm to 05:00 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) Enlist various vectors used in genetic engineering. Explain engineered vectors in detail **10**
(b) Explain the principle of isoelectric focusing. **04**
- Q.2** (a) Explain regulation of gene expression in eukaryotes at the level of transcription. **07**
(b) Explain lac operon in detail **07**
OR
(b) Explain trp operon in detail.. **07**
- Q.3** (a) Explain different mechanisms of suppression of mutation **07**
(b) Explain mismatch repair with a neat diagram **07**
OR
- Q.3** (a) Describe the technique of southern blotting in detail. **07**
(b) Explain nucleotide excision repair in detail. **07**
- Q.4** (a) What are the basic tools used in genetic engineering. **07**
(b) Which different methods are used for modifying ends of DNA fragments **07**
OR
- Q.4** (a) What are the different compatibilities for insertion of DNA insert into the vector? **07**
(b) How can recombinant DNA be introduced into a suitable host? **07**
- Q.5** (a) Write a short note on restriction endonuclease. **07**
(b) Explain the principle and working mechanism of PCR **07**
OR
- Q.5** (a) Write a short note on colony hybridization **07**
(b) What is genetic engineering? Enlist various applications of genetic engineering. **07**
