

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V • EXAMINATION – SUMMER 2013****Subject Code: 150401****Date: 14-05-2013****Subject Name: Advance Molecular Biology I****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) What is recombinant DNA? How is it made? **07**  
(b) Write an account on specific cleavage pattern of restriction endonuclease enzymes. **07**
- Q.2** (a) What should be properties of an ideal vector? Give features of any two engineered vectors used in gene cloning. **08**  
(b) How is genomic library and cDNA library constructed? **06**
- OR**
- (b) Enlist different types of mutations with example of each. **06**
- Q.3** (a) How can recombinant DNA be integrated into the host *E.coli*? **07**  
(b) Explain mismatch repair with a neat diagram. **07**
- OR**
- Q.3** (a) What are the different possibilities of ligation when a vector is to be joined to a recombinant DNA? **10**  
(b) Differentiate between Southern, Northern and Western Blotting Techniques. **04**
- Q.4** (a) Explain trp operon in detail. **08**  
(b) Write an account on gene therapy and its applications **06**
- OR**
- Q.4** (a) What is Polymerase Chain reaction? How does it amplify DNA? **08**  
(b) Enlist different tools used in genetic engineering. **06**
- Q.5** (a) What are the regulation mechanisms at the level of post transcription? **08**  
(b) What is the effect of glucose on lac operon? **06**
- OR**
- Q.5** (a) Explain feedback inhibition in detail. **08**  
(b) Explain different mechanism of suppression of mutation with a suitable example. **06**

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