

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-V • EXAMINATION – SUMMER • 2015**

**Subject Code: 150401**

**Date:02/05/2015**

**Subject Name: Advanced Molecular Biology - I**

**Time: 02.30pm-05.00pm**

**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) Define the term mutation. Write in detail about types of mutation. **07**  
(b) Enlist types of repair mechanism. Discuss in detail about any one. **07**
- Q.2** (a) What are the basic tools used in genetic engineering? Write in detail. **07**  
(b) Explain the process of feedback inhibition with suitable example. **07**
- OR**
- (b) Give various applications of gene therapy with suitable examples. **07**
- Q.3** (a) Write a detail note on chromosome walking. **07**  
(b) Enlist and explain various restriction endonucleases with their cleavage pattern. **07**
- OR**
- Q.3** (a) Give detail account on mode of action and types of vectors. **07**  
(b) What do you understand by the term gene libraries? Write in detail about its construction. **07**
- Q.4** (a) Discuss about various electrophoretic techniques with respect of protein. **07**  
(b) Define the term replication fidelity. How editing and mismatch repair helps in maintenance of it. **07**
- OR**
- Q.4** (a) With example of lac operon explain the process of regulation of transcription. **07**  
(b) Define and differentiate positive and negative regulation for transcriptional regulation. **07**
- Q.5** (a) Write in detail about following: (any two) **07**  
Attenuation, Anti Termination, Covalent Modification, Isoelectric focusing  
(b) Give a detail account on western blotting. **07**
- OR**
- Q.5** (a) Enlist and explain antibiotics that block transcription. **07**  
(b) Describe the process of gene cloning with its merits and demerits. **07**

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