Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-V Examination-Nov/Dec.-2011

Subject code: 150401 **Date: 22/11/2011**

Subject Name: Advanced Molecular Biology-I

Time: 2.30 pm -5.00 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)** Discuss the role of editing and mismatch repair in maintaining replication fidelity. **07**

(b) Define DNA repair. Explain in detail mismatch repair mechanism. **07**

Q.2 **(a)** Define feedback inhibition. How it is useful in metabolic pathway regulation? Give suitable example. **07**

(b) Define gene library. Explain various types of gene library. **07**

OR

(b) Give the detail description on chromosome walking. **07**

Q.3 **(a)** Describe in detail various steps involve in gene cloning **10**

(b) Write a note on isoelectric focusing and its applications in genetic engineering. **07**

Q.3 **(a)** Discuss the applications of genetic engineering with suitable example **07**

(b) What do you understand by gene therapy with suitable example explain it. **07**

Q.4 **(a)** Define covalent modification. Describe the process of covalent modification by taking example of glycogen metabolism regulation. **10**

(b) Define following terms with example: **04**

- Feed back inhibition

- Inhibitor
- Modulator
- Attenuation

Q.4	**(a)**	Describe in detail regulation of gene expression in prokaryotes by lac operon.	**07**
	(b)	Give type and physiological significances of various types of restriction endonucleases.	**07**
Q.5	**(a)**	Enlist various types of mutation. Give brief explanation about each.	**10**
	(b)	Write a short note on SOS repair system as a DNA repair mechanism.	**04**
Q.5	**(a)**	Give a detail account on PCR and its types with suitable application.	**07**
	(b)	What are the significances of DNA repair mechanism? Explain excision repair mechanism.	**07**

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