

Paper Code: BT-24B

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M. Tech.
(SEM II) EVEN SEMESTER EXAMINATION, 2015-16
GENETIC ENGINEERING

[Time: 3 hrs.]

[Max. Marks: 100]

Note: Attempt all questions. All questions carry equal Marks.

1. Attempt any *TWO* of the following: - [10x2=20]
 - (a) What should be the specific features in an ideal cloning vector?
 - (b) Explain the various steps in PCR with a flow diagram.
 - (c) Outline the different patterns produced by restriction enzymes.

2. Attempt any *TWO* of the following: - [10x2=20]
 - (a) Enumerate various steps involved in gene cloning.
 - (b) What are the differences in composition and application of Stacking gel and Running gel of SDS-PAGE?
 - (c) Discuss the method and applications of DNA fingerprinting.

3. Attempt any *TWO* of the following: - [10x2=20]
 - (a) What is the importance of copy number in r-DNA Technology? Explain the technique to control the plasmid copy number?
 - (b) Discuss the methodology and applications of Real-Time PCR.
 - (c) Explain any one method of Genomic Library preparation.

4. Attempt any *TWO* of the following:- [10x2=20]
 - (a) Explain the difference between approaches of DNA isolation from different sources.
 - (b) Compare the Northern and Western blot procedures.
 - (c) What are the various parameters for Primer Design?

5. Write short note on any *FOUR* of the following: - [5x4=20]
 - (a) Chromosome Walking
 - (b) Cosmids
 - (c) HOTSTART PCR
 - (d) Liposome Fusion
 - (e) SNP
 - (f) Virus based vectors