

Unit IV

8. What are different biosafety guidelines which are being followed in India ?
9. What are intellectual property rights ? Explain various forms of IPRs.

Roll No.

Exam Code : J-21

Subject Code—52511

B. Sc. EXAMINATION

(Main/Reappear) (Batch 2018 Onwards)

(First Semester)

BIOTECHNOLOGY

BIT-101-L

Paper I

Introduction to Biotechnology

Time : 3 Hours

Maximum Marks : 80

Note : Attempt any *Five* questions. Q. No. **1** is compulsory. All questions carry equal marks.

1. Attempt any *four* questions :

- (i) Who invented PCR ? What do you mean by inverse PCR ?

- (ii) A cloning vector possesses a bacterial origin of replication, a selectable marker (antibiotic resistance gene), and cos sites from a bacteriophage. What type of cloning vector is this ? And what size insert molecule can it carry ? Explain with example.
- (iii) Explain the role of the linkers and adaptors in gene cloning experiments.
- (iv) Briefly describe the anaerobic treatment of water.
- (v) What are Patents ? What are the various requirements for the award of a patent ?

Unit I

- 2. List five major landmarks which revolutionized the area of biotechnology ?
- 3. What are plant cell, tissue and organ culture ? Explain different types of sterilization techniques and roles of different growth regulators used in a tissue culture Lab.

Unit II

- 4. Explain the role of DNA fingerprinting in forensic medicine, parental dispute and varietal identification.
- 5. Write short notes on the following :
 - (i) Southern blotting
 - (ii) Nonradioactivity labelled probes
 - (iii) cDNA libraries
 - (iv) Type II RE.

Unit III

- 6. What is a Monoclonal Antibody ? How are they produced and write their various applications ?
- 7. Briefly describe the applications of biotechnology in agriculture.