

Bachelor of Science (B.Sc.) Semester–V Examination
MOLECULAR BIOLOGY AND rDNA TECHNOLOGY
Optional Paper–2
(Biotechnology)

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) All questions are compulsory and carry equal marks.

(2) Draw neat diagrams wherever necessary.

1. Describe various characteristic properties of genetic code. 10

OR

- (a) Explain the importance of Shine and Dalgarno sequence in prokaryotic translation. 5

- (b) Describe attachment of amino acids to its tRNA. 5

2. Describe in detail initiation process of prokaryotic translation. 10

OR

- Describe in detail the termination process of prokaryotic translation. 10

3. Describe in detail the plasmid vectors. 10

OR

Describe in brief :

- (a) Restriction endonucleases 5

- (b) Cosmid as vector. 5

4. Describe the principle and technique of PCR. 10

OR

- Describe genomic and cDNA library. 10

5. Solve any **TEN** of the following :

- (i) Name any one amino acid coded by single codon. 1

- (ii) Name the first codon which was deciphered. 1

- (iii) Who proposed Wobble Hypothesis ? 1

- (iv) Name any one antibiotic which affects translation. 1

- (v) Name any one elongation factors of translation. 1

- (vi) From which end does protein synthesis starts ? 1

- (vii) What is a phagemid ? 1

- (viii) Which enzyme is more efficient in blunt end ligation of DNA ? 1

- (ix) Define transfection. 1

- (x) What is meant by expression vector ? 1

- (xi) Name the scientist who invented PCR technique. 1

- (xii) Name any one medicine prepared by the use of rDNA technology. 1