



MCB-003-013203

Seat No. _____

M. Sc. (Biotech.) (Sem. II) (CBCS) Examination

April / May - 2018

Paper - 209 : Molecular Biotechnology - I

(Old Course)

Faculty Code : 003

Subject Code : 013203

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instruction : All questions are compulsory. Support your answers with suitable illustrations where required.

1 Answer any **seven** : (2 Marks each) **14**

- (a) Comment on the DNA modifying enzymes.
- (b) What is Reverse transcriptase ?
- (c) What is the role of DNA gyrase in replication ?
- (d) What are different types of Vectors in rDNA technology ?
- (e) Comment on the molecular cloning" ?
- (f) What is cDNA library ?
- (g) What is chromosome walking ?
- (h) Write comment on the chromosome jumping.
- (i) Differentiate genome and gene.
- (j) What is gene mapping ?

2 Write detailed comments on any **two** of the following : **7×2=14**

- (a) DNA methylating enzymes.
- (b) Different enzymes involved in molecular cloning.
- (c) Discuss various steps in molecular cloning.

3 Answer the following : (7 marks each) **14**

- (a) Discuss reaction mechanisms and significance of the restriction enzymes.
- (b) Discuss in detail different vectors used in gene cloning.

OR

3 Write detailed comments on the following : (7 marks each) **14**

- (a) Plasmids and its basic traits.
- (b) PCR and its applications.

4 Answer the following : (7 marks each) **14**

- (a) Discuss various strategies for the selection of the recombinant clones in cloning
- (b) Discuss genomic and cDNA libraries.

5 Write detailed comments on any **two** of the following : **14**
(7 marks each)

- (a) Blotting and DNA hybridization
- (b) Karyotyping
- (c) Microarray Techniques
- (d) Reporter genes.
