



HDZ-003-1133002 Seat No. _____

**M. Sc. (Biotechnology) (Sem. III) (CBCS)
Examination**

November / December – 2017

BT - 312 : Molecular Biotechnology
(Core - II)

Faculty Code : 003

Subject Code : 1133002

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

[Total Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) Support your answers with suitable illustrations where required.

- 1** Answer Any **Seven** out of 10 : (2 Marks each) **14**
- (a) Comment on the common features of the Southern hybridization and Northern hybridization.
 - (b) Why the peptide sequencing is important?
 - (c) Comment on the basics of the Electrophoretic mobility shift assay.
 - (d) What is the significance of the Protein-Protein interaction?
 - (e) Comment on the Reporter genes.
 - (f) What is cat?
 - (g) What are molecular chaperons?
 - (h) Comment on the in-vitro protein folding.
 - (i) What is protein engineering?
 - (j) What is antisense RNA technology?
- 2** Answer any **two** of the following : **7×2=14**
- (a) Discuss nucleic acid hybridization techniques used for the gene detection and expression.
 - (b) Discuss the process and significance of various types of PCR.
 - (c) Discuss different strategies for protein sequencing.

- 3** Answer the following : (7 marks each) **14**
- (a) Discuss gel retardation assay.
 - (b) Discuss Chloramphenicol acetyl transferase briefly with its application in expression kinetics.

OR

- 3** Answer the following : (7 marks each) **14**
- (a) Discuss Protein-Protein interactions and its relevance.
 - (b) Discuss reporter genes in context with promoter probing studies.

- 4** Write in detail on : (7 marks each) **14**
- (a) Explain molecular chaperons with suitable examples.
 - (b) Discuss in detail in-vitro protein folding.

- 5** Write comments on Any **Two** of the following : **14**
(7 marks each)
- (a) Discuss Rational design strategy in protein engineering.
 - (b) Discuss the concept of gene shuffling with respect to protein engineering.
 - (c) Explain drug design approach by inhibiting nucleic acid synthesis using antisense RNA technology.
 - (d) Describe drug design by blocking enzyme activity with examples.
