

MSC4bioE0111 **Seat No: _____**
M.Sc. Semester - 4 (CBCS) Examination
March/April- 2018
BIOMOLECULAR ENGINEERING
(ELECTIVE - 1)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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- Que-1 Answer Any Seven (2 Marks each) (14)
- (a) What are various levels of the protein in structures ?
 - (b) Why amino acids are referred as Zwitter Ions ?
 - (c) What is beta sheet in protein molecule ?
 - (d) What is protein folding ?
 - (e) Comment on the over expression of a gene.
 - (f) What are the insoluble fractions of the expressed during the over expression ?
 - (g) What is the Real Time PCR ?
 - (h) What are various objectives of the protein engineering ?
 - (i) What is molecular breeding ?
 - (j) Can we create a protein with the combination of properties which never exist in nature ?
Comment.
- Que-2 Write detailed comment on Any Two of the following. (14)
- (a) Geometry of the peptides linkage.
 - (b) Quaternary structures of the protein.
 - (c) Tertiary structures of the protein.
- Que-3 Write detailed comments on : (7 Marks each). (14)
- (a) Molecular chaperones and protein folding.
 - (b) construction and significance of the of the chimeric genes.
- OR
- Que-3 Answer the following (7 marks each).
- (a) Discuss directed evolution in the light of sequence optimization.
 - (b) What are various methods of PCR ? Highlight their significance in molecular biology and diagnostics.
- Que-4 Answer the following (7 marks each). (14)
- (a) How inclusion bodies are formed during over expression of a gene ? Discuss various strategies to prevent it.
 - (b) Discuss the significance and various methods of in-vitro protein folding.
- Que-5 Write comments on Any Two (7 marks each). (14)
- (a) Genetic heterogeneity and protein engineering.
 - (b) DNA sequencing and its significance.
 - (c) Site directed mutation and protein engineering.
 - (d) Methods of the Primer designing.
