DHH-003-013402 Seat No. _____

M. Sc. (Biotechnology) (Sem. - IV) (CBCS) Examination

May / June – 2015

BT - 420 : Molecular Biotechnology - II

(Core - II)

Faculty Code : 003

Subject Code : 013402

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

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

Q.1. Answer **ANY SEVEN** (2 Marks each) 14

a. What is structural genomics?
b. What is functional genomics?
c. What is gene shuffling?
d. What is staggered PCR?
e. What are chimeric genes?
f. What is global gene expression?
g. What is the error prone PCR and its significance?
h. What are the objectives of protein engineering?
i. What is Gel mobility shift assay?
j. What is rationale protein design?

Q.2. Answer **ANY TWO** of the following: 7x2 = 14

a. What is gene detection? Describe various approaches in gene detection and expression.
b Discuss various types of the PCR techniques and their implications.
c. What is the DNA-Protein interaction? Discuss various techniques to study this phenomenon.

Q.3. Answer the following (7 marks each) 14
a. Discuss molecular chaperones of the extremophiles.
b. What is the role of the molecular chaperone in over expression of a gene? Discuss.

OR

Q.3. Answer the following (7 marks each) 14
a. Discuss the inclusion bodies and its implication in over expression.
b. Discuss reporter gene systems, their products and assay systems.

Q.4. Answer the following (7 marks each) 14
a. Discuss modified dialysis methods with respect to the protein folding.
b. What is sequence optimization? Describe basic steps involved in the directed evolution.

Q.5. Write comments on **ANY TWO** (7 marks each) 14

a. Limits of the extremity and designing novel enzymes

b. Random approaches in protein engineering

c. Reporter gene systems in signaling pathway

d. Family shuffling
