

FACULTY OF SCIENCE

M.Sc. IV-Semester (CBCS/NONCBCS) Examination, May / June 2015

Subject : Biochemistry

**Paper : III
Biotechnology**

Time : 3 hours

Max. Marks : 80

Note : Answer all questions from Part-A and Part-B. Each question carries 4 marks in Part-A and 12 marks in Part-B.

**PART – A (8 x 4 = 32 Marks)
(Short Answer Type)**

- 1 Describe the role of microbes in bioremediation process.
- 2 How is cheese manufactured?
- 3 What is IPR? What rights are available to protect it?
- 4 What are plasmids? How do they work as cloning vectors?
- 5 What is gene therapy? How it can be used to treat diseases?
- 6 Give a detailed account on application of transgenic mice.
- 7 Illustrate the principle of site directed mutagenesis.
- 8 Write a note on various tags used for protein purification.

**PART – B (4 x 12 = 48 Marks)
(Essay Answer Type)**

- 9 a) Describe in detail microbial production of recombinant human insulin.
OR
b) Discuss on :
 - i) Biomining
 - ii) Superbug
- 10 a) What are plantibodies? How they are expressed in plants? Explain the human application of plantibodies with suitable example.
OR
b) Describe in detail terminator seed technology. What are the ethical issues of terminator technology?
- 11 a) Explain the process of Mammalian cloning by nuclear transfer with "Dolly" as an example.
OR
b) Describe in detail the strategy for generating conventional knockout mice with illustration.
- 12 a) Explain the methods used for enzyme immobilization. What are the applications of immobilized enzymes?
OR
b) What is targeted drug delivery? Describe in detail the various delivery vehicles and applications of targeted drug delivery.
