

FACULTY OF SCIENCE

M.Sc. III-Semester Examination, January 2018

Subject : MICROBIOLOGY

Paper : IV (B)

Advances in Biotechnology (Elective-II)

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 Bioreactor
- 2 Nutrient uptake efficiency
- 3 Organ culture
- 4 Stem cells
- 5 Nanotechnology
- 6 Nanofibres
- 7 Antisense technology
- 8 Tissue engineering

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

- 9 a) Explain biotic stress tolerance with suitable examples.
OR
b) How quality of foods can be improved for proteins and carbohydrates?
- 10 a) Write about the scale up techniques of animal cell lines and the risks and safety issues.
OR
b) What is Gene knock out mice and explain how transgenics have added to molecular biotechnology.
- 11 a) Write about the synthesis of nano-structures and their significance.
OR
b) Explain the different properties of nanomaterials and nanostructures.
- 12 a) Explain the pharmacogenetics and toxicogenomics and their significance.
OR
b) What is gene therapy? Explain about the different vectors used for tissue specific expression.
