

FACULTY OF SCIENCE
M.Sc. III – Semester Examination, December 2014

Subject: Microbiology
Paper – III: Soil Microbiology

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 Soil fertility
- 2 Blue-green algae
- 3 Hemicellulose
- 4 Soil humus
- 5 Nitrate pollution
- 6 Asymbiotic nitrogen fixation
- 7 Microbial transformation of sulfur
- 8 Quality control tests for rhizobial inoculants.

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

- 9 a) Describe the functions of soil bacteria.
OR
b) Explain the microbial diversity in soil and write its significance.
- 10 a) What are the factors that govern the decomposition and biochemistry of degradation of organic matter.
OR
b) Discuss the microbial involvement in mineralization of nitrogenous matter.
- 11 a) Explain the mechanism of denitrification.
OR
b) Write a detailed account on the biochemistry and genetics of nitrogen fixation.
- 12 a) Define biofertilizers. Explain the modern techniques for the large scale production of biofertilizers.
OR
b) Write the trends in microbial transformation of phosphorus in soil.
