

FACULTY OF SCIENCE

M. Sc. III – Semester Examination, December 2016

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 profile
2. Blue green algae
3. Cellulose
4. Soil humus
5. Nitrification
6. Nitrate pollution
7. Microbial transformation of phosphorus
8. Rhizobial inoculants

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

- 9 (a) Explain the methods of estimation of soil microorganisms.
OR
(b) Discuss the microbial diversity in soil and write its significance.
- 10 (a) What is lignin? Write the biochemistry of decomposition of lignin.
OR
(b) Describe the role of microbes in mineralization of nitrogenous organic matter.
- 11 (a) Write a detailed account on the mechanism of denitrification.
OR
(b) Briefly mention the ecological and economic importance of nitrogen fixation.
- 12 (a) What are bio-geo chemical cycles? Write the role of microbes in the transformation of sulfur in soil.
OR
(b) How the bacterial fertilizers are responsible for the soil productivity and in turn crop productivity?
