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Mani Priya Rao  
M.Sc. (II) Microbio

Code No. 8597

**FACULTY OF SCIENCE**

**M.Sc. III-Semester Examination, December 2013**

**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 (8X4 = 32 Marks)  
[Short Answer Type]**

1. Microbial Biomass carbon in soil.
2. Morphological diversity of soil microbes
3. Role of temperature in organic matter decomposition
4. Most probable number technique
5. Ammonification
6. Legume root nodules
7. Thiobacillus
8. Quality control tests for biofertilizers

**PART – B (4x12 = 48 Marks)  
[Essay Answer Type]**

- 9.(a) Explain in details with examples of factors affecting distribution of microflora in a given ecosystem.
- OR**
- (b) Compare and contrast different soil types.
- 10.(a) Describe the biochemistry of lignin decomposition with a focus on role of different enzymes.
- OR**
- (b) Write in detail about formation of soil humus and its importance in soil structure and fertility.
- 11.(a) Explain genetics and regulation of nitrogen fixation.
- OR**
- (b) Write about nitrate pollution and its impacts on human health with special note on contribution of agricultural practices to it.
- 12.(a) Write in detail about iron cycle and its ecological significance.
- OR**
- (b) Write about role of microbes in soil sulphur cycle and explain about enzymes involved.

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