

## FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2016

(CUCBCSS-UG)

Core Course—Microbiology

MBY 4B 06—SOIL AND AGRICULTURAL MICROBIOLOGY

Time : Three Hours

Maximum : 80 Marks

## Section A

Answer **all** questions.

Each question carries ½ mark.

1. A predatory bacterium is :
  - (a) *Rhodococcus*.
  - (b) *Pseudomonas*.
  - (c) *Bdellovibrio*.
  - (d) *Acinetobacter*.
2. A soil bacteria that reduce sulfate to  $H_2S$  is :
  - (a) *Thiobacillus thiooxidans*.
  - (b) *Desulfotomaculum*.
  - (c) *Bacillus subtilis*.
  - (d) *Bradyrhizobium*.
3. Soil having particle size less than 0.002 mm. are called
  - (a) Loam.
  - (b) Sand.
  - (c) Silt.
  - (d) Clay.
4. Podolization is a process of accumulation of \_\_\_\_\_ in soil.
  - (a) Silica.
  - (b)  $CaCO_3$ .
  - (c) Iron and aluminium oxides.
  - (d) Clay.
5. The branch of soil science that focus on the formation, description and classification of soil in their natural environment is called \_\_\_\_\_
6. Fungi specialized in trapping and digesting nematodes.
7. The causative agent of early blight in potato is
8. *Frankia* is a nitrogen fixing species grouped under \_\_\_\_\_
9. Micro-organisms inhabiting aerial parts of plants is called
10. \_\_\_\_\_ are organisms which grow and nourish from host and cause damage to host.
11. Name a fungi used as biofungicide.
12. The fungal components in lichens is called

(12 x V2 = 6 marks)

Turn over

**Section B***Answer all questions.**Each question carries 2 marks.*

- |                                     |                               |
|-------------------------------------|-------------------------------|
| 13. <i>Xanthomonas compestris</i> . | 14. PGPRs.                    |
| 15. NPV.                            | 16. Phylloplane.              |
| 17. Crown gall.                     | 18. Papaya ring rot virus.    |
| 19. VAM.                            | 20. Amensalism.               |
| 21. Citrus canker.                  | 22. Phosphate solubilization. |

**(10 x 2 = 20 marks)****Section C***Answer any **six** of the following.**Each question carries 5 marks.*

Write short notes on :

23. Red rot of sugarcane.
24. Classification of Mycorrhizae.
25. Bacterial insecticides.
26. Role of micro-organisms in carbon cycle.
27. Aetiology and symptoms of Bunchy top of banana.
28. Luminescent bacteria.
29. Rumen microflora of animals.
30. Advantages of biofertilizers over chemical fertilizers.

**(6 x 5 = 30 marks)****Section D***Answer any **two** of the following.**Each question carries 12 marks.*

31. What is biological nitrogen fixation ? Explain the mechanism of symbiotic nitrogen fixation.
32. Write a note on different types of soil. What are the factors influencing **microflora** of soil.
33. Discuss various types of interactions observed between populations of micro-organisms. -

**(2 x 12 = 24 marks)**