

C 61231

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Name.....

Reg. No.....

**FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2019**

(CUCBCSS—UG)

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. \_\_\_\_\_ is an example of free living, aerobic nitrogen fixing bacteria commonly seen in agricultural soil.
2. \_\_\_\_\_ and \_\_\_\_\_ are two important physical factors that can influence the character of microflora of soil.
3. Region of soil closely surrounding the root is called \_\_\_\_\_.
4. 'Earth smell' of soil is due to presence of \_\_\_\_\_.
5. \_\_\_\_\_ is an example of sedimentary biogeochemical cycle.
6. Pedon means \_\_\_\_\_.
7. \_\_\_\_\_ form a symbiotic relationship with a plant forming a sheath around the root tip of the plant.
8. \_\_\_\_\_ describes the relationship between two species that interact but do not affect each other.
9. Parasites that penetrate the host cell and remain inside are called \_\_\_\_\_.
10. *Tomato Yellow Leaf Curl Virus* (TYLCV) has got a genome made up of \_\_\_\_\_.
11. Crown gall is caused by the bacterium \_\_\_\_\_.
12. Citrus canker is a disease affecting citrus species caused by the bacterium \_\_\_\_\_.

(12 × ½ = 6 marks)

**Section B**

*Answer all questions.*

*Each question carries 2 marks.*

Comment on :

- |                                    |                           |
|------------------------------------|---------------------------|
| 13. Predation.                     | 14. Rhizosphere effect.   |
| 15. BBTV.                          | 16. <i>Azospirillum</i> . |
| 17. <i>Arthrobotrys conoides</i> . | 18. Soil horizon.         |

**Turn over**

19. *Xanthomonas oryzae*.  
20. Humus.  
21. Synergism.  
22. Soil test.

(10 × 2 = 20 marks)

### Section C

*Write short note on any six questions.*

*Each question carries 5 marks.*

23. Briefly discuss the red rot of sugarcane.  
24. What is meant by soil texture ? Briefly discuss the classification of soil on the basis of soil texture.  
25. Microflora of stomach is vital for the survival of the ruminant animal. Discuss.  
26. Discuss the influence of Mycorrhizal association on plant growth.  
27. With example discuss the role of micro-organisms in Carbon cycle.  
28. Discuss briefly about Azolla Anabaena symbiosis.  
29. Discuss briefly about the Sulfur cycle.  
30. What is meant by biofertilizers ? Discuss.

(6 × 5 = 30 marks)

### Section D

*Answer any two of the following.*

*Each question carries 12 marks.*

31. Briefly discuss the nitrogen cycle. With example explain the role of micro-organisms.  
32. Briefly discuss the Fusarium wilt of tomato. Give symptoms, disease cycle and control measures.  
33. What are biopesticides ? Discuss about various types of biopesticides that are commercially used and their advantage over chemical pesticides.

(2 × 12 = 24 marks)