

D 41970

(Pages : 2)

Name.....

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2018

(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. Diazotrophs are bacteria that can perform _____
2. Early blight of potato is caused by fungi _____
3. Soil is formed from rock called _____
4. Apart from C, H, O and N _____ is an essential element for biosynthesis of nucleic acids.
5. Sulfur oxidation is the process by which micro-organisms convert _____ into elemental sulfur (S⁰)
6. *Fusarium oxysporum* cause _____ disease in cotton.
7. _____ is an example of nematophagous fungi.
8. All the members of a microbial population use the same resources and occupy the same ecological niche leads to negative interaction called _____
9. Photosynthesis is key step in _____ biogeochemical cycle.
10. _____ is a unidirectional relationship between populations in which one population benefits and the other one is unaffected.
11. Purple sulfur bacteria for anoxygenic photosynthesis use _____ instead of water.
12. _____ is responsible for the earthy smell of soil.

(12 × ½ = 6 marks)

Section B

Answer all questions.

Each question carries 2 marks.

Comment on :

13. Phylloplane.
14. Banana bunchy top.
15. Humus.

Turn over

16. *Bacillus thuringiensis*.
17. Phosphate solubilising bacteria.
18. Ectoparasite.
19. Predation.
20. Crown gall.
21. *Metarhizium*.
22. *Gloeocapsa*.

(10 × 2 = 20 marks)

Section C

Write short note on any six of the following.

Each question carries 5 marks.

23. What is meant by denitrification? Discuss the impact of this on soil fertility.
24. Discuss the symptoms and disease cycle of cankers of citrus.
25. Discuss briefly about the bio fertilizer.
26. Discuss briefly about Lichens.
27. Discuss briefly about the structure and function of Heterocyst.
28. Discuss briefly about the advantages of bio insecticides.
29. Discuss the events of nitrification in nitrogen cycle. Why nitrification is important for agriculture?
30. What is meant by symbiotic nitrogen fixation? Discuss with the example of *Rhizobium*.

(6 × 5 = 30 marks)

Section D

Answer any two of the following questions.

Each question carries 12 marks.

31. Discuss briefly about the symptoms, disease cycle and control measures of following crop diseases.
 - (a) Angular leaf spot of cotton.
 - (b) Red rot of sugarcane.
32. Briefly discuss on various types of soil. What are the factors influencing microbial growth and distribution in soil?
33. What are Mycorrhizae? Discuss the characteristic features of different types of mycorrhizae. Give note on its application in agriculture.

(2 × 12 = 24 marks)