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(Pages : 3)

Name.....

Reg. No.....

FOURTH SEMESTER B.VOC. DEGREE EXAMINATION, APRIL 2022

Organic Farming

GEC 4SA 12—SOIL AND AGRICULTURAL MICROBIOLOGY

(2020 Admissions)

Maximum : 80 Marks

Time : Three Hours

Part A

Answer all the questions.
Each question carries $\frac{1}{2}$ mark.

1. Wilt of cotton is caused by _____.
2. Name a phosphate solubilizing bacteria.
3. _____ protects nitrogenase from oxygen in root nodules of leguminous plants.
4. Name a biocontrol agent used against root-knot nematodes.
5. Earth's lithosphere includes the uppermost mantle and _____.
6. Write any two examples of free living nitrogen fixing bacteria.
7. Azospirillum participates in all steps of nitrogen cycle except _____.
8. _____ is a microbial interaction in which one species is benefitted and other species is harmed.
9. *Fusarium oxysporum* cause _____ disease in tomato.
10. Give an example of filamentous bacteria which are capable of oxidizing inorganic sulphur compounds.
11. Crown gall disease is caused by _____.
12. _____ is a hyphal network that extends in to root penetrating epidermal and cortical cells of ectomycorrhizal plants.

(12 × $\frac{1}{2}$ = 6 marks)

Turn over

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Part B

*Answer all the questions.
Each question carries 2 marks.*

13. Papaya ring rot disease.
14. Luminescent bacteria.
15. Ammonification.
16. Commercial importance of Azolla- anabaena.
17. Parasitism.
18. VAM.
19. Xanthomonas citri.
20. Trichoderma.
21. Rhizosphere effect.
22. Nitrogenase.

(10 × 2 = 20 marks)

Part C

*Answer any six questions.
Each question carries 5 marks.*

23. Write a note on lithosphere
24. Explain various types of mycorrhizae
25. Discuss various steps involved in phosphorous cycle. Mention the role of microbes in the cycle.
26. Explain about Papaya ring spot and tomato yellow leaf curl.
27. Briefly discuss about biological control measures of plant diseases
28. Briefly explain the process of soil formation.
29. Mention the agricultural importance of biofertilizers
30. Briefly mention the important factors affecting soil microflora.

(6 × 5 = 30 marks)

Part D

Answer any two questions.

Each question carries 12 marks.

31. Write about various microbial interactions with suitable examples.
32. Explain the major steps involved in nitrogen cycle and mention its importance.
33. Explain the symptoms, disease cycle and control measures of important fungal diseases affecting tomato, sugarcane, potato and cotton.

(2 × 12 = 24 marks)