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N – 4243

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, June 2022
Career Related First Degree Programme under CBCSS
Group 2(a) : Botany and Biotechnology
BB 1171 : MICROBIOLOGY
(2015 - 2018 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** the questions in a **word** or **one** or **two** sentences. **Each** question carries **1** mark.

1. What is the germ theory of diseases?
2. Name a filtration technique used for sterilization.
3. Define a biovar.
4. What is the function of bacterial flagella?
5. Name an anaerobic bacteria.
6. Name the polysaccharide backbone present in the bacterial cell wall.
7. Define nitrogen fixation.
8. In which life cycle the bacteriophage DNA integrates into the host genome?
9. Name the protein coat of a virus.
10. What are halophiles?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks. (Answer not to exceed **one** paragraph)

11. Write two advantages of batch culture.
12. Give two examples of chemicals used in sterilization.
13. Name two microorganisms that can fix nitrogen.
14. What is basal media? Give an example.
15. What is rhizosphere of a plant?
16. Write any two factors that affect the growth of bacteria.
17. What are halophiles?
18. Mention the main benefit of mycorrhizal association to the plant.
19. What are the two basic structural units of a virion?
20. What is the purpose of sporulation in bacteria?
21. What is serial dilution of bacterial culture mainly used for?
22. Mention two living features of a virus.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. **Each** question carries **4** marks. (Answer not to exceed **120** words)

23. Discuss the enriched culture media and its uses.
24. What are the significance of Pasteur's experiments in microbiology?
25. Write briefly on the Bergey's manual of bacterial classification.
26. Write a note on anaerobic culture methods.

27. Differentiate between prokaryotes and eukaryotes.
28. What are the different types of bacterial flagella?
29. Describe the lysogenic cycle of a bacteriophage.
30. Briefly explain the role of microbes in carbon and phosphorous cycles.
31. Write briefly on the structure of a T4 bacteriophage.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed three pages)

32. Discuss the various factors affecting the growth of bacteria in cultures. Schematically elaborate the different stages of bacterial growth curve.
33. Define Sterilization and elaborate on the different methods of sterilization.
34. Write an essay on the mechanism of nitrogen fixation and the role of microbes in it. Elaborate on symbiotic associations.
35. Explain the various methods for the isolation of pure cultures.

(2 × 15 = 30 Marks)
