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Reg. No. :

Name :



First Semester B.Sc. Degree Examination, January 2024

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

Vocational Course – I

BB 1171 : MICROBIOLOGY

(2019 – 2022 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. Identify the uses of an autoclave.
2. Name three major types of microbes.
3. What kind of filter is used for sterile filtration?
4. Bacterial cell wall is made up of.
5. Which bacteria produce endospores?
6. Write the three basic types of bacterial culture media.
7. What tool is used to spread bacteria during spread plating?
8. What is the product formed by nitrogen fixation?
9. Define extremophiles.
10. What are the two basic structural components of a virion?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions. Each question carries **2** marks. (Answer not to exceed **1** paragraph)

11. How did Pasteur's experiment support the cell theory?
12. Write briefly on the radiation method of sterilization.
13. State two differences between a prokaryotic and eukaryotic cell.
14. Write a note on the batch culture.
15. What is meant by rhizosphere effect?
16. What is meant by generation time?
17. What is a selective media?
18. Name the two life cycles of a bacteriophage.
19. What is meant by pure culture?
20. What is serial dilution of bacterial culture mainly used for?
21. Write a note on the role of microbes in phosphorous cycle.
22. What are bio-fertilizers?

(8 × 2 = 16 Marks)

SECTION – C

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

23. Describe the different methods of sterilization.
24. Write briefly on the Bergey's manual of bacterial classification.
25. Differentiate between gram positive and gram negative bacteria.

26. Write a note on the mechanisms of nitrogen fixation.
27. Describe briefly the carbon cycle and its significance.
28. Discuss the essential components of culture media and factors affecting growth of microbes in the media.
29. What are the general characteristics of viruses?
30. Discuss the enriched culture media and its uses.
31. Differentiate between batch and continuous culture.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks. (Answer not to exceed **3** pages)

32. Schematically elaborate on the different stages of bacterial growth curve.
33. Write elaborately on the bacterial motility and structure and types of flagella with diagrams.
34. Explain the structure and lifecycle of T4 bacteriophages.
35. Explain the various methods for the isolation of pure cultures.

(2 × 15 = 30 Marks)