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Reg. No. : .....

Name : .....

**First Semester B.Sc. Degree Examination, March 2023**

**Career Related First Degree Programme under CBCSS**

**Botany and Biotechnology**

**Vocational Course – I**

**BB 1171 : MICROBIOLOGY**

**(2019 Admission Onwards)**

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. Who discovered the existence of microscopic organisms?
2. What is the sterilizing temperature inside an autoclave?
3. What is Bergey's manual used for?
4. Name the structure that helps bacteria in motility.
5. At which stage of the growth curve exponential growth of bacteria occur?
6. What is the main purpose of serial dilution?
7. Name any one nitrogen fixing bacteria.

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8. Define rhizosphere.
9. What are halophiles?
10. What is the viral protein coat called?

**(10 × 1 = 10 Marks)**

### SECTION – B

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

11. Name two chemicals widely used for sterilization.
12. What is the difference between species and strain?
13. State two differences between gram-positive and gram-negative bacteria.
14. Write briefly on bacterial endospore.
15. State the main difference between batch and continuous cultures.
16. Write a note on anaerobic bacterial culture.
17. State the most important biological difference between bacteria and a virus.
18. Define symbiosis. Cite an example.
19. What are thermophiles? Give one example.
20. What is basal media? Write an example.
21. Mention two living features of a virus.
22. What is the importance of methanogenic bacteria?

**(8 × 2 = 16 Marks)**



### SECTION – C

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

23. Explain the Pasteur's experiment. Why it is considered as important?
24. State four differences between a prokaryotic and eukaryotic cell.
25. Explain the ultra-structure of a bacterial flagellum with the help of a diagram.
26. Describe the various factors that affect the growth of bacteria.
27. Discuss the enriched culture media and its uses.
28. Write the structure of a T4 bacteriophage.
29. Explain the mechanism of nitrogen fixation and the role of microbes in it.
30. Write a note on biofertilizers and its applications.
31. What are the general characteristics of viruses?

**(6 × 4 = 24 Marks)**

### SECTION – D

Answer any **two** questions. **Each** question carries **15** marks.

32. Define Sterilization and elaborate on the different methods of sterilization.
33. Elaborate on the different pure culture methods of bacteria.
34. Explain the role of microorganisms in nitrogen, carbon, phosphorus and sulphur cycles.
35. Describe the lytic and lysogenic cycles of a bacteriophage.

**(2 × 15 = 30 Marks)**