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Reg. No. : .....

Name : .....

Second Semester B.Sc. Degree Examination, September 2023

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

BB 1271 : MICROBIAL METABOLISM, GENETICS AND DISEASES

(2019 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in a **word** or **one** of two sentences.

1. What are autotrophs?
2. State the role of leghaemoglobin in nitrogen fixing.
3. Give another name of cyanobacteria.
4. Which is the site of oxidative phosphorylation in bacteria?
5. Name a bacteria which is able to convert ethanol to vinegar.
6. Which gene transfer technique involves direct contact between bacteria?
7. What is meant by spontaneous mutation?
8. Define stringent plasmid.
9. Which bacteria produces botulinum toxin?
10. Name the carrier of dengue virus.

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions. Answer not to exceed **one paragraph**.

11. Name two mechanisms for the uptake of solutes into bacterial cell.

12. Define anoxygenic photosynthesis.

13. What is glycolysis? Where does it occur in bacteria?

14. What is anaerobic respiration? Give one example.

15. Briefly describe the nutritional classification of bacteria.

16. Discuss the significance of Griffith's experiment.

17. What is the difference between F+ and F- bacterial cells?

18. How the mutations can be induced in a bacteria?

19. Define bacterial transduction.

20. What are resistance plasmids?

21. Name two air-borne infections.

22. What are the symptoms of Measles? Name the causative organism.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Answer not to exceed **half page**.

23. Cite the differences between chlorophyll a and bacteriochlorophyll.

24. Describe the mechanism of photosynthesis in green sulfur bacteria.

25. Explain the tricarboxylic acid cycle.

26. Write notes on lactic acid fermentation in bacteria.

27. Explain different types of plasmids in bacteria.

28. What is Ames test and how does it work?

29. Discuss various repair mechanisms in bacterial genome.

30. Write notes on two soil-borne bacterial infections.

31. Explain two important viscerotropic viral infections that affect humans.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Answer not to exceed **3** pages.

32. Elaborately explain different methods of bacterial recombination.

33. Write an essay on photosynthesis in bacteria. Add a note on various pigments involved.

34. Give an account on major dermatoviral diseases affecting humans and its preventive measures.

35. Give a detailed account on anaerobic respiration in bacteria.

(2 × 15 = 30 Marks)
