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T – 3437

Reg. No. :

Name :

Second Semester B.Sc. Degree Examination, August 2024

Career Related First Degree Programme under CBCSS

Group 2 (a) Botany and Biotechnology

Vocational Course

BB 1271 : MICROBIAL METABOLISM, GENETICS AND DISEASES

(2023 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. What are photoautotrophs?
2. Name a carotenoid pigment.
3. Define a plasmid.
4. Mention the beneficial role of Cyanobacteria.
5. What is meant by Hfr cell?
6. What is spontaneous mutation?
7. In which life cycle, the bacteriophage DNA integrates into the host genome?
8. What causes tuberculosis?
9. Name a disease spread by mosquito.
10. Name the causative organism of the pandemic COVID-19.

(10 × 1 = 10 Marks)

P.T.O.



SECTION – B

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

11. Write briefly on uptake of solutes into bacterial cells.
12. What are phycobiliproteins?
13. Explain the basic nutritional classification of bacteria.
14. What is the importance of lactic acid fermentation?
15. Cite the major difference between stringent and relaxed plasmids.
16. State the importance of R-factor in plasmids.
17. How mutations can be induced in a bacteria?
18. Differentiate between F+ and F- bacterial cells.
19. What is the major difference between bacterial transduction and conjugation?
20. Which is the causative organism of chicken pox? What are the symptoms?
21. Give examples of two food-borne infections.
22. Why dengue fever can be life threatening?

(8 × 2 = 16 Marks)

SECTION – C

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

23. Explain Griffith's experiment and its importance.
24. Give an account on electron transport and oxidative phosphorylation in bacteria.
25. Write a detailed note on Col plasmids.
26. What is bacterial transduction? What is its significance?



27. Explain the process of glycolysis in bacteria.
28. Brief a note on test for mutagenicity.
29. How does the botulinum food poisoning occur?
30. Explain two important viscerotropic viral infections that affect humans.
31. Elaborate on two important airborne bacterial diseases, causes, symptoms and preventive measures.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Answer not to exceed three page.

32. Elaborate the mechanisms of photosynthesis in bacteria. Discuss the role of various photosynthetic pigments.
33. Give a detailed account of various steps involved in the lactic acid fermentation process.
34. Describe in detail the mechanism of horizontal gene transfer during bacterial conjugation.
35. Write an essay on three major dermatoviral viral diseases that affect humans with its causative organisms and symptoms.

(2 × 15 = 30 Marks)

