QP Code: U25C055

Reg. No : ....
Name : ....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

III SEMESTER (FYUGP) DEGREE EXAMINATIONS, OCTOBER 2025

B. Sc. Microbiology

MBY3CJ201 : MICROBIAL PHYSIOLOGY

2024 Admission Onwards

(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

Answer ***all****. Each question carries* ***3*** *Marks.* ***(Ceiling: 24 Marks)***

1. Give two examples for primary and continuous cell cultures.
2. What is aw?
3. What are the main methods to obtain synchronous culture?
4. State the role of carrier proteins in active transport.
5. State the difference between chemolithotrophs and chemoorganotrophs.
6. Explain the role of the hydrogenase enzyme in hydrogen-oxidizing bacteria.
7. Give any three examples of bacteria that exhibit quorum sensing.
8. Describe the characteristics of lag phase.
9. Explain briefly the principle of pock assay with its significance in cultivation of viruses.
10. Explain the role of catabolite repression in diauxic culture.

Section B

Answer ***all****. Each question carries* ***6*** *Marks* ***(Ceiling: 36 Marks)***

11. Explain the importance of water in bacterial cells.
12. Compare symport, antiport, and uniport systems with suitable microbial examples.
13. Write an essay on acidophiles, neutrophiles and alkaliphiles.
14. Give an outline about the process of binary fission in bacteria with a neat diagram.
15. Describe the effect of temperature on microbial growth with suitable examples.
16. Explain the difference between lithotrophs and organotrophs with suitable examples.

Turn Over

17. Compare and contrast batch culture system and continuous culture system.

18. Explain the process of hydrogenotrophic methanogenesis with an example.

Section C

*Answer **any one**. Each question carries **10** Marks* ***(1x10=10marks)***

19. Discuss about quantitative measurement of bacterial growth by cell number.

20. Describe cultivation of viruses in embryonated eggs with suitable examples.

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