QP Code: P25B024

Reg. No : .....

Name : .....

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

II SEMESTER (CBCSS-PG) DEGREE EXAMINATION, MARCH 2025

M Sc Microbiology

MBG2C07 : INDUSTRIAL MICROBIOLOGY

2024 Admission Onwards

Time:3 Hours **Maximum Weightage:30**

Part A

*Short answer type questions: Answer **any four** questions. Weightage **2** for each question.*
(4x2 = 8 Weightage)

1. Define crowded plate technique. [BTL1]
2. What is the volumetric mass transfer coefficient? [BTL1]
3. Mention different electrodes used to measure pH in a fermenter. [BTL1]
4. Analyze factors that influence shelf life of a product. [BTL4]
5. Analyze the impact of Carbon source on the yield of acetone and butanol in the fermentation process. [BTL3]
6. Analyze the impact of yeast activity across different stages of beer fermentation. [BTL4]
7. Analyse the importance of water in media formulation. [BTL4]

Part B

*Short essay-type questions: Answer **any four** questions. Weightage **3** for each question.*
(4x3 = 12 Weightage)

8. Explain the advantages of aqueous two-phase separation system for protein purification. [BTL2]
9. How would you explain the role of microbial fermentation in the industrial production of Vitamin B12? [BTL3]
10. Analyse the regulatory mechanisms involved in the biosynthesis of primary metabolites. [BTL4]
11. Apply your knowledge to categorize centrifuges based on their operational principles and applications in microbiology. [BTL3]

Turn Over

12. Evaluate the impact of fermentation on the safety and side effects of Ayurvedic medicines.Can fermentation reduce potential toxicity or improve therapeutic outcomes? [BTL5]

13. Differentiate between direct heat exchanger and indirect heat exchanger in continuous sterilization process. [BTL3]

14. Analyze the factors that affect the efficiency of lactic acid production from whey, and discuss on the optimization of these factors to enhance the overall yield. [BTL4]

Part C

*Essay-type questions: Answer **any two** questions. Weightage **5** for each question.*
(2x5 = 10 Weightage)

15. Explain inoculum development with suitable examples. [BTL3]

16. Explain in detail the different industrially important microbial enzymes. [BTL1]

17. Explain briefly about the aeration and agitation system in fermenter. [BTL4]

18. Analyze the influence of fermentation parameters such as aeration, pH, and temperature on Streptomycin yield. [BTL4]

****