Register Number:
Date: 17/04/2020

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURY-27
M.Sc. FOOD SCIENCE AND TECHNOLOGY - III SEMESTER
SEMESTER EXAMINATION: NOVEMBER 2020
FST 3119 – FERMENTATION TECHNOLOGY

Time- 2 1/2 hrs **Max Marks-70**

This paper contains 2 printed pages and 04 parts

I. Answer any FIVE of the following 3×5=15

1. What is continuous system of fermentation? Write the kinetics of the continuous fermentation.
2. Write a note on types of baffles used in the design of fermenter.
3. What is a photobioreactor? Mention its application.
4. What is Rheology of fermentation broth? Mention its properties.
5. What is centrifugation? Mention the applications of centrifugation in down-stream processing.
6. Write a note on protein based contaminants in the final fermentation products.
7. Write the principle of Bradford's method of protein estimation.

II. Answer any FIVE of the following 5×5=25

8. What is solid-state fermentation? Mention its applications and advantages in industrial production of metabolites.
9. Discuss the industrial production of amino acids.
10. Write notes on scale-up and scale-down studies of bioreactor.
11. What is fluidized bioreactor? Write a note on its design and application.
12. Write notes on different types of drying techniques used in downstream processing.
13. What is quantification of protein? Explain in detail the Lowry's method of protein estimation.
14. What are the significance and advantages of fermented foods?

III. Answer any TWO of the following 10×2=20

15. Discuss in detail the measurement of temperature, pressure and pH in fermentation process.
16. What is a fermenter? Discuss in detail the design of a typical fermenter.
17. What are airlift and packed bed bioreactors? Discuss in detail the airlift and backed bed bioreactors.

IV. Answer the following 10×1=10

18. What is chromatography? Write the principles of chromatography? Discuss in detail the types of chromatographic techniques used in the down-stream bioprocessing and its applications.