**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU -27**

Registration Number:

Date & Session:7-12-22

**M.Sc. MICROBIOLOGY – III SEMESTER**

**SEMESTER EXAMINATION: OCTOBER 2022**

**(Examination conducted in December 2022)**

**MB 9321: INDUSTRIAL MICROBIOLOGY**

**Time: 2 ½ Hours Max Marks: 70**

This question paper contains **1** printed page and **four** parts

**I. Answer any Five of the following 5x3=15**

1. Give the importance of fermentation technology.

2. Write notes on Photobioreactors.

3. What are the substrates for SSF?

4. What is the significance of melanin biosynthesis?

5. What are Interferons? Why are they used?

6. Giving examples define Newtonian Fluids.

7. Why are antifoams important? Give examples.

**II. Answer any Five of the following 5x5=25**

8. Discuss the preservation of cultures.

9. Write notes Filter aids.

10. Diagrammatically describe a typical fermenter.

11. Describe the production of Glutamic acid

12. How is Xanthan gum produced commercially?

13. Differentiate between batch and continuous fermentation.

14. List the carbon sources in media formulation with their significance.

**III. Answer any two of the following 2x10=20**

15. Compare the different techniques of Strain improvement.

16. Discuss the methods of immobilization of cells and its importance.

17. How does cell disruption help in downstream process? Explain.

**IV. Answer the following 1x10=10**

18. An important industrial chemical that finds its use in the manufacture of drugs, plastics, polishes, cosmetics, perfumery and in recent times in sanitisers, can be produced commercially by the use of microbes.

 What is this chemical? Describe its production.