

Date:10-03-2022

Registration number:

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

M.Sc. MICROBIOLOGY- III SEMESTER

SEMESTER EXAMINATION: OCTOBER 2021

(Examination conducted in January-March 2022)

**MB 9318 – Industrial Microbiology**

Time- 2 ½ hrs Max Marks-70

This question paper contains two printed pages and four parts

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

1. Give the substrates used for SSF.

2. Write notes on Citric acid.

3. What are Photobioreactors? Give examples.

4. What are Filtering devices?

5. Give the importance of Precursors with examples.

6. Write a note on the different Nitrogen sources used in media formulations.

7. Give the highlights of the production of Interferons.

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

8. Discuss the production of Hepatitis B Vaccine.

9. Write notes on the importance of Power requirement in Industry.

10. Diagrammatically describe a Typical Stirred Fermenter.

11. Write notes on Growth kinetics in a Fed Batch Fermenter.

12. What are the types of Immobilization techniques? Briefly explain.

13. Write notes on any one of the Chromatographic Techniques used in product recovery.

14. Explain the production of Penicillin.

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

15. Describe the process of Solvent extraction in product recovery.

16. Discuss the importance and development of inoculum for industrial processes.

17. Discuss the method of Protoplast fusion in strain improvement.

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

18. A natural polysaccharide having the characteristics of existing as a single, double or triple helix, capable of forming hydro colloidal gels produced by a bacterium has found its use in the various industries of importance. Identify the organism producing such a product and describe its production and the industries using them.