

TM154050C

Reg. No:.....

Name:.....

**M. Sc. DEGREE (C.S.S.) EXAMINATION, MARCH 2017
SEMESTER IV - ELECTIVE COURSE (BOTANY)
BO4EA3TM - INDUSTRIAL MICROBIOLOGY**

Time: Three Hours

Maximum Marks: 75

PART A

I. Answer any five questions. Each question carries 3 marks

1. Describe batch fermentation.
2. What is the function of buffers in fermentation medium?
3. Describe the working of air lift fermenter.
4. Explain the use of ultrasonication in downstream processing.
5. What is meant by freeze-thawing?
6. What is SCP?
7. Mention any one method of enzyme immobilization.

(5x3=15)

PART B

II. Answer any six questions. Each question carries 5 marks

8. Give an account on microbial metabolites of industrial importance.
9. Explain the biological and chemical assay of fermentation products.
10. Write notes on stirred and static fermentation.
11. Give an account on the common energy and carbon sources used in medium formulations.
12. Give an account of the structure and working of packed tower fermenter.
13. Explain the working of tray fermenter.
14. Give an account on inoculums preparation for microbial fermentation
15. Write note on the common antifoam agents used in fermentation
16. Give an account on Biofuels

(6x5=30)

PART C

III. Answer any two questions. Each question carries 15 marks

17. Give an account on the formulation of microbial media in fermentation
18. Write an essay on the sterilization methods in microbial fermentation
19. Explain the methods of cell disruption in downstream processing
20. Describe the industrial production process of organic acids

(2x15=30)