

Sl. No.

No. of Printed Pages : 1

21MBL3C9L

M.Sc. III Semester Degree Examination, April/May - 2023

MICROBIOLOGY

DSC 9 : Bioprocess Engineering and Industrial Microbiology

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following, each question carries **equal** marks. Question No.1 is **compulsory**.

1. (a) Describe type of fermenters and their function. 7
(b) Explain industrially important micro-organisms. 7
2. (a) Write a note on media formulation. 7
(b) Give an account on industrially produced enzymes. 7
3. (a) Explain Antifoaming agents. 7
(b) Write a note on organic acids from microbes. 7
4. (a) Give an account on steps involved in upstream process. 7
(b) Give an account on steps involved in downstream process. 7
5. (a) Explain the role of HPLC in bioprocess engineering. 7
(b) Write a note on SDS-PAGE. 7
6. (a) Explain strain improvement techniques. 7
(b) Write a note on Industrially produced beverages. 7
7. (a) Explain the different phases of microbial cell growth. 7
(b) Give an account of industrially produced amino acids. 7
8. (a) Write a note on industrially produced antibiotics. 7
(b) Describe immobilization and its applications. 7

- o o o -

