

Roll No. Total No. of Printed Pages : 4

Code No. : B04-207

Fourth Semester Online Examination, May-June, 2022

M. Sc. MICROBIOLOGY

Paper II

**INDUSTRIAL MICROBIOLOGY AND
FERMENTATION TECHNOLOGY**

Time : Three Hours] [Maximum Marks : 80

Note : ● Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.

● Part C (Short answer type) and D (Long answer type) of each question should be answered within the word limit 200-250 and 400-450.

Unit-I

1. (A) Why fermenter is used ? 2
(B) What is antifoam ? 2
(C) Write the differences between batch and continuous fermentations. 4

Or

Write the differences between primary screening and secondary screening.

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(D) Explain the design and applications of fermenters.

12

Or

Explain the scale-up of fermentations.

Unit-II

2. (A) Define microbial strain. 2
(B) Draw schematic diagram of Protoplast fusion. 2
(C) Describe DNA shuffling. 4

Or

Describe Cassette mutagenesis.

(D) Explain the role of environmental factors and genetic factors for improvement of strains. 12

Or

Explain down stream processing in Industrial Microbiology.

Unit-III

3. (A) Define Auxotrophic mutant. 2
(B) What is Alarmone ? 2

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- (C) Describe the methods available for immobilizing enzymes. 4

Or

Write applications of Amylases and Proteases enzymes.

- (D) Explain the methods of commercial enzyme production. 12

Or

Describe production process for vitamins.

Unit-IV

4. (A) What are the percent of alcohol in Beer and Wine ? 2
- (B) What is Pasteur Effect ? 2
- (C) Write the applications of amino acids in health and food industry. 4

Or

Write the mode of action of Tetracyclin and streptomycin.

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- (D) Explain the wine fermentation. 12

Or

Describe commercial production of Penicillin.

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