

Roll No.

Total No. of Printed Pages : 4

B04-308

Fourth Semester Online Examination, May-June, 2022

M. Sc. BIOTECHNOLOGY

Paper III

BIOPROCESS ENGINEERING AND TECHNOLOGY

Time : Three Hours]

[Maximum Marks : 80

Note : (i) 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.

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

UNIT-I

1. (A) Write about different types of fermentor in two sentences only. 2
- (B) What are process for media sterilization ? 2
- (C) Describe process of maintenance of micro-organism. 4

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Or

Describe the process of isolation and preservation of industrial micro-organism

- (D) Describe about kinetics of microbial fermentation. 12

Or

Describe the process of inoculum preparation and maintenance.

UNIT-II

2. (A) What is Photobioreactors ? 2
- (B) What is fluidized bioreactors ? 2
- (C) Describe measures required for stability of microbial reactors. 4

Or

Explain the process for analysis of mixed microbial population.

- (D) Describe methods for measurement and control of bioprocess parameters. 12

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Or

Give comment on the following :

- (a) Continuous process for fermentation
- (b) Pulsed bioreactors.

UNIT-III

- 3. (A) What is DOC and what are its significance ? 2
- (B) What is COD and what are its significance ? 2
- (C) Comment on disposal process of effluents 4

Or

Comment on liquid-liquid extraction process.

- (D) Describe about process of whole cell immobilization and its industrial application. 12

Or

Give a comprehensive account about use of microbes in mineral beneficiation.

UNIT-IV

- 4. (A) Comment on idea of canning for food preservation. 2

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- (B) Comment on pasteurization of food product. 2
- (C) Describe process of production of Ethanol by fermentation. 4,

Or

Describe process of production of gluconic acid by fermentation.

- (D) Explain the process of industrial production of Glutamic acid and Lysine. 12

Or

Explain about process of production of streptomycin and tetracycline at industrial level.

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