

BSCbioCC6010
B.Sc. Semester - 6 (CBCS) Examination
Oct/Nov -2020
BIOPROCESS TECHNOLOGY (CORE)

Seat No : _____

Time: 2:00 Hours

Marks: 56

Instructions:

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Q.1

- A. Answer the following. (Any One) (07)
1. Write a detailed note on economic aspects of fermentation industry.
 2. How protoplast fusion can be used to improve production strain?
- B. Answer the following. (Any One) (04)
1. Explain: Auxanography.
 2. Short note on: Growth curve as microbial metabolites.
- C. Answer the following (Any Three) (03)
1. Define: Turbidostat
 2. Enlist different methods for strain improvement.
 3. Give any two name of recombinant products produced by genetically engineered organisms.
 4. Primary metabolites produced in _____ phase and Secondary metabolites produced in _____ phase of microbial growth.
 5. Generally Reverse Transcriptase enzyme used for DNA cutting in recombinant technology. (True/False)

Q.2

- A. Answer the following. (Any One) (07)
1. Describe various nitrogen sources used in fermentation medium preparation.
 2. Write in detail about media optimization.
- B. Answer the following. (Any One) (04)
1. Write characteristics of ideal antifoam agent.
 2. Difference between: Natural Medium and Artificial Medium.
- C. Answer the following (Any Three) (03)
1. Define: Precursors.
 2. State difference between inoculum and production medium.
 3. The pH of fermentation media may be controlled externally by addition of _____ and _____.
 4. What is corn steep liquor? State its use in fermentation.
 5. Give two names of antifoaming agents.

Q.3

- A. Answer the following. (Any One) (07)
1. Discuss the sterilization of production media for fermentation process.
 2. Explain agitation and aeration system in detail.
- B. Answer the following. (Any One) (04)
1. Sterilization of fermentation equipments.
 2. Fermenter configuration.

C. Answer the following (Any Three)

(03)

1. Distinguish between sparger and impellor.
2. Define: Containment.
3. What is Del factor?
4. What is the main function of fermenter?
5. Heat labile medium is sterilized by filtration. (True/False)

Q.4

A. Answer the following. (Any One)

(07)

1. Write detailed note on centrifugation in context to cell separation method.
2. Explain mechanical techniques for cell disruption.

B. Answer the following. (Any One)

(04)

1. Role of precipitation technique in cell separation.
2. Two phase aqueous extraction in product recovery.

C. Answer the following (Any Three)

(03)

1. Enlist non-mechanical methods of cell disruption.
2. Why disintegration of cells is required in product recovery?
3. Name the different centrifuges used in cell separation.
4. State the difference between upstream process and downstream process.
5. Define: Dialysis for purification of product.

Q.5

A. Answer the following. (Any One)

(07)

1. Describe citric acid production in detail.
2. Write a detailed note on production of Ethyl alcohol.

B. Answer the following. (Any One)

(04)

1. Microbial production of lysine.
2. Enlist the methods of immobilization in fermentation process.

C. Answer the following (Any Three)

(03)

1. Name the microorganisms used to produce α -amylases
2. Give the name of any two industrially important enzymes.
3. Name some of the important semisynthetic penicillins.
4. *Ashbya gossypii* is used for production of _____.
5. Give the Scientific name of baker's Yeast.
