

B.Sc. Semester - 6 (CBCS) Examination
March/April-2023 (OLD COURSE)
BIOPROCESS TECHNOLOGY(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1**A. Objective type questions.****(04)**

1. Define: Screening.
2. Fermentation can proceed in the absence of oxygen. (True/ False)
3. List component parts fermentation process.
4. Write the contributions of Louis Pasteur.

B. Answer in brief (Any 1 out of 2)**(03)**

1. Strain optimization.
2. Improvement of industrially important microbes by recombinant DNA technology.

C. Write a note on (Any 1 out of 2)**(07)**

1. Fermentation processes of primary and secondary metabolites involve various stages.
2. Write a detail note on range of fermentation process.

Q.2**A. Objective type questions.****(04)**

1. Give two examples of alkylating agent.
2. Define: Pharma media.
3. What are sulphite waste liquor?
4. Examples of crude carbon sources.

B. Answer in brief (Any 1 out of 2)**(03)**

1. Fermentation media and its types.
2. Why agricultural waste is preferred as raw material for making fermentation media?

C. Write a note on (Any 1 out of 2)**(07)**

1. Various crude forms are used as nitrogen sources in fermentation.
2. Inoculum and Production medium

Q.3**A. Objective type questions.****(04)**

1. What is the role of agitation in fermentation?
2. State the types of sparger.
3. Mention importance of baffles in fermenter.
4. Bubble column fermenter is also known as tower fermenter. (True/False)

B. Answer in brief (Any 1 out of 2)**(03)**

1. Sterilization of fermenter.
2. Comparative advantages and disadvantages of Batch and Continuous sterilization.

C. Write a note on (Any 1 out of 2)**(07)**

1. Types of bioreactors.
2. Describe basic components of fermenter and discuss scale up.

Q.4**A. Objective type questions.****(04)**

1. Enlist main types of industrial centrifuge used in product recovery.
2. Convection dryers are used in product recovery. (True/False)
3. Any two methods of cell separation.
4. Difference between upstream and downstream processing.

B. Answer in brief (Any 1 out of 2)**(03)**

1. Explain: Different types of filtration techniques are used to separate microbial biomass during product recovery.
2. Product Recovery by Two Phase aqueous extraction.

C. Write a note on (Any 1 out of 2)**(07)**

1. Discuss various cell disruption methods.
2. Biological assay of fermentation products.

Q.5**A. Objective type questions.****(04)**

1. Who discovered Penicillin?
2. Give one example of organic solvent.
3. Give example of protease producing microorganisms.
4. Define: Immobilization.

B. Answer in brief (Any 1 out of 2)**(03)**

1. Explain: Primary screening of antibiotic and organic acid producing microorganisms.
2. Amylase – Microorganisms, laboratory fermentation and production.

C. Write a note on (Any 1 out of 2)**(07)**

1. Immobilization in fermentation process.
2. Production of vitamins: Riboflavin
