

B.Sc. Semester - 6 (CBCS) Examination
March/April-2023 (NEW COURSE)
Bioprocess Technology (Core (New))

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

1. All questions are compulsory.
 2. Figures to the right indicate marks.
-

Q.1**(A) Objective type questions.****(04)**

1. Define: Secondary metabolites with suitable example.
2. Name two organisms used for screening.
3. Write the contributions of Sir Alexander Flemming.
4. Enlist the different methods for strain improvement.

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

1. Protoplast fusion
2. Explain glimpses of historical developments, who built foundation of industrial microbiology.

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

1. Enlist different primary screening techniques. Explain any two of them in detail.
2. Write a detail note on Economic aspects of fermentation industry.

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

1. Mention the name of agricultural waste which is preferred as raw material for making fermentation media.
2. Phenylacetic acid is still the most widely used precursor in penicillin production. (True/ False)
3. Give two examples of Chelators.
4. Define: Growth factors.

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

1. Various carbon source in fermentation medium.
2. An ideal properties of antifoam agents.

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

1. Discuss various nitrogen sources in detail.
2. Write detail note on Media Optimization

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

1. State role of baffles.
2. Any two types of sparger.
3. Tower fermenter is also known as a Bubble column fermenter. (True/False)
4. Mention two criteria for design of a fermenter.

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

1. Batch and Continuous sterilization both have their own advantages and limitations.
2. Basic function of a fermenter.

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

1. Write detail note on Aeration and Agitation.
2. Tower fermenter.

Q.4

(A) Objective type questions.

(04)

1. How Two-Phase aqueous system is used in enzyme extraction.
2. Mention any two methods of product recovery.
3. Contact dryers are used in product recovery. (True/False)
4. Types of filtration techniques.

(B) Answer in brief (Any 1 out of 2)

(03)

1. Explain: Centrifugation techniques are important methods used to separate microbial biomass during product recovery.
2. Product Recovery by liquid liquid extraction,

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

(07)

1. Write a detail note on Methods of Cell separation.
2. Mechanical and Non-mechanical methods of Cell Disruption.

Q.5

(A) Objective type questions.

(04)

1. Define: Immobilization.
2. Give one example of organic acid.
3. Give example of amylase producing microorganisms.
4. Economic significance of riboflavin.

(B) Answer in brief (Any 1 out of 2)

(03)

1. Lysine Production of amino acids.
2. Explain: Primary screening of antibiotic and organic acid producing microorganisms.

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

(07)

1. Production of organic solvents.
2. Immobilization in fermentation process.
