

B.Sc. Semester - 6 (CBCS) Examination
March/April-2025 (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.

Que-1(A)	Objective type questions.	(04)
	1) Mention the role of Louis Pasteur in development of industrial Microbiology. 2) Enlist the different methods for improvement of industrially important microbes. 3) Give examples of any two major range of commercially important fermentation. 4) Define : Screening	
Que-1(B)	Answer in Brief (any one out of two)	(03)
	1) Protoplasm fusion to improve industrial microbial strain 2) Types of fermentation processes	
Que-1(C)	Write a Note on (any one out of two)	(07)
	1) Primary screening of industrially important microorganisms 2) Component parts fermentation process	
Que-2(A)	Objective type questions	(04)
	1) Give examples of antifoam agents used during fermentation. 2) Define : Inoculum stain 3) What is importance of media optimization in bioprocess engineering? 4) Give examples of antifoam agents used in media formulation.	
Que-2(B)	Answer in Brief (any one out of two)	(03)
	1) Types of fermentation media 2) Role of Growth Regulators in media	
Que-2(C)	Write a Note on (any one out of two)	(07)
	1) Various Carbon sources used in media formulations 2) Discuss the methods used for optimizing media composition in bioprocesses	
Que-3(A)	Objective type questions	(04)
	1) Mention the use of baffles in fermenter. 2) Overheating of fermentation during fermentation is controlled by cooling jackets. (True/False) 3) What is Del factor? 4) Write one point of difference between Batch and continuous fermentation.	
Que-3(B)	Answer in Brief (any one out of two)	(03)
	1) Use of heat for media sterilization 2) Batch fermentation processes	

- Que-3(C) Write a Note on (any one out of two) (07)**
- 1) Diagram of basic industrial bioreactor/Fermenter
 - 2) Types of Impellers
- Que-4(A) Objective type questions (04)**
- 1) Enlist the methods of cell separation.
 - 2) What is the principle behind liquid solvent extraction?
 - 3) Define: Downstream processes
 - 4) Name any two methods for biological assay of fermentation products
- Que-4(B) Answer in Brief (any one out of two) (03)**
- 1) Discuss the role of filtration in cell separation.
 - 2) Turbidity analysis to check industrial fermentation.
- Que-4(C) Write a Note on (any one out of two) (07)**
- 1) Discuss solvent recovery techniques commonly used in bioprocesses.
 - 2) Various mechanical techniques for cell disruption.
- Que-5(A) Objective type questions (04)**
- 1) Which raw materials are used in Riboflavin production?
 - 2) Industrial alcohol is produced by using bottom yeast as starter culture. (True/False)
 - 3) Define: Immobilization
 - 4) Give two examples of amylase producing microbial strain.
- Que-5(B) Answer in Brief (any one out of two) (03)**
- 1) Advantages of immobilization.
 - 2) Microbial groups producing Citric acid.
- Que-5(C) Write a Note on (any one out of two) (07)**
- 1) Penicillin production
 - 2) Various methods for enzyme production
