

B.Sc. Semester - 6 (CBCS) Examination
March/April-2026 (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 one secondary metabolite produced by microorganisms. 2. Fermentation can proceed in the absence of carbon dioxide. (True/ False) 3. List component parts fermentation process. 4. Write the contributions of Louis Pasteur.	
Que.1(B)	Answer in brief (Any 1 out of 2)	(03)
	1. Improvement of industrially important microbes by protoplast fusion. 2. Write a brief note on historical development of industrial microbes.	
Que.1(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 brief note on range of fermentation process.	
Que.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.	
Que.2(B)	Answer in brief (Any 1 out of 2)	(03)
	1. Media formulation. 2. Minerals as a raw material.	
Que.2(C)	Write a note on (Any 1 out of 2)	(07)
	1. Various crude forms are used as nitrogen sources in fermentation. 2. Discuss in detail on fermentation media types.	
Que.3(A)	Objective type questions.	(04)
	1. Which gas is incorporated in fermentation for aeration? 2. State the types of spargers. 3. What is Del factor? 4. Mention types of fermenter.	
Que.3(B)	Answer in brief (Any 1 out of 2)	(03)
	1. Advantages of batch and continuous sterilization. 2. Importance of agitation.	
Que.3(C)	Write a note on (Any 1 out of 2)	(07)
	1. Bubble column fermenter. 2. Describe basic functions of fermenter and discuss scale up.	
Que.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. Precipitation is a type of cell separation. (True/False) 4. Difference between upstream and downstream processing.	
Que.4(B)	Answer in brief (Any 1 out of 2)	(03)
	1. Product Recovery by super critical fluid extraction. 2. Non-mechanical methods of cell disruption.	

- Que.4(C) Write a note on (Any 1 out of 2) (07)
1. Biological assay of fermentation products.
 2. Write a detail note on Methods of Cell separation by filtration.
- Que.5(A) Objective type questions. (04)
1. Which materials are used for immobilization of microorganisms?
 2. Give one example of organic acid.
 3. Give example of amylase producing microorganisms.
 4. Mention name of streptomycin producing microorganism.
- Que.5(B) Answer in brief (Any 1 out of 2) (03)
1. Ethyl alcohol production.
 2. Protease – Microorganisms, laboratory fermentation.
- Que.5(C) Write a note on (Any 1 out of 2) (07)
1. Production of vitamins: Riboflavin
 2. Production of amino acid: Lysine
