



DCI-003-1016011

Seat No. _____

B. Sc. (Sem. VI) Examination

July - 2022

Microbiology : MB-601

(Bioprocess Technology) (Old Course)

Faculty Code : 003

Subject Code : 1016011

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions : (1) All Questions are Compulsory.

(2) Right side figure indicates mark of question.

(3) Draw diagram if necessary.

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|---|---|---|
| 1 | (a) (1) Define : Screening process. | 4 |
| | (2) What is meaning of fermentation in Latin ? | |
| | (3) What is spheroplast ? | |
| | (4) Define pH value. | |
| | (b) What are improved strains ? | 2 |
| | (c) Write the advantage of Mutation. | 3 |
| | (d) Explain Ranges of fermentation with examples. | 5 |

OR

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|---|--|---|
| 1 | (a) (1) Define GLP. | 4 |
| | (2) Define sparger. | |
| | (3) Define Role of Wilkins agar plate. | |
| | (4) Define protoplast fusion. | |

	(b) What is importance of pure culture.	2
	(c) What is application of cellulase ?	3
	(d) What are various criteria of secondary screening programme ?	5
2	(a) (1) Define Molasses.	4
	(2) Define Growth factors.	
	(3) Define Antifoam Agents.	
	(4) Define Sporulation process.	
	(b) What are properties of improved strain ?	2
	(c) What is synthetic media ?	3
	(d) Explain Role of Aeration in production.	5
OR		
2	(a) (1) Define Buffer.	4
	(2) Define crude fermentation medium.	
	(3) Define Pasteurization.	
	(4) Define precursor.	
	(b) How Agitation effect the production ?	2
	(c) Name crude carbon sources.	3
	(d) Explain with example, how some fermentation media are pasteurized and not sterilized.	5
3	(a) (1) Define Aeration.	4
	(2) Define Baffles.	
	(3) Define Air lift fermentor.	
	(4) Define Biovessel.	
	(b) What is the Role of cooling Jacket system.	2
	(c) Why Head space is must in vessel ?	3
	(d) Which are the method of medium sterilization in fermentation industries.	5

OR

3	(a)	(1) Define continuous fermentation.	4
		(2) Define Role of centrifugation.	
		(3) Define cold method of sterilization.	
		(4) Define vortex formation.	
	(b)	Name any method for cold sterilization.	2
	(c)	How medium gets contaminated ?	3
	(d)	List out types of Bioreactors and explain design of any one.	5
 4	(a)	(1) Define Dielectric constant.	4
		(2) Define paper chromatography.	
		(3) Define pH value.	
		(4) What are intracellular fermentation product ?	
	(b)	Application of Alcohol in fermentation industries.	2
	(c)	Role of centrifugation & filtration in Bioprocess.	3
	(d)	Discuss Mechanical method of Cell Disruption.	5
		OR	
4	(a)	(1) Define Biological indicator.	4
		(2) Define colorimeter.	
		(3) Name microbe producing Citric Acid.	
		(4) What is Role of buffering Agent.	
	(b)	Advantage of Spectrophotometric assay.	2
	(c)	Advantages of cup agar diffusion assay.	3
	(d)	Write about Supercritical fluid extraction system.	5
 5	(a)	(1) Define immobilization process.	4
		(2) Define Covalent Bond.	
		(3) Define Encapsulation technique.	
		(4) Write one advantage of Enzyme immobilization.	
	(b)	What is upstream process ?	2
	(c)	Write few properties of Alcohol producing Yeast.	3
	(d)	Explain Two phase aqueous extraction system.	5

OR

5	(a) (1) Define Vitamin.	4
	(2) Name substrate of cellulase enzyme.	
	(3) Name method used for Alcohol estimation.	
	(4) Name physico - chemical techniques.	
	(b) Name few technique of cell immobilization.	2
	(c) Write major drawbacks of Immobilization Technique	3
	(d) Production of Vitamin - Riboflavin by fermentation process.	5
