



**BBF-003-1016011**      Seat No. \_\_\_\_\_

**B. Sc. (Sem. VI) (CBCS) (W.E.F. 2016) Examination**

**July - 2021**

**Microbiology : MB - 601**

*(Bioprocess Technology) (New 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 indicates marks of question.  
(3) Answer any five questions from given 10 questions.  
(4) Draw diagram if necessary.

- 1 (A) (a) Define : Solid State fermentation. 4  
(b) Define : Inoculum media.  
(c) Define : Isolation process.  
(d) What is Mutation ?  
(B) What is aerobic fermentation process ? 2  
(C) Write the importance of Enrichment technique. 3  
(D) Write on Component parts of Bioprocess. 5
- 2 (A) (a) What is Bioprocess ? 4  
(b) What is pure culture ?  
(c) Define Reactor.  
(d) Define fungi.

	(B) What are industrial improved strain ?	2
	(C) "Parameters of secondary screening".	3
	(D) Write on Recombinant DNA Technology.	5
<b>3</b>	(A) (a) Define Buffer solution.	4
	(b) Define Molasses.	
	(c) Name any Antifoam agent.	
	(d) Define : Bioindicators.	
	(B) What is the role of Inducers in Bioprocess ?	2
	(C) Why medium formulation is important ?	3
	(D) Write note on Raw materials of fermentation medium.	5
<b>4</b>	(A) (a) What is synthetic medium ?	4
	(b) Define Endospore.	
	(c) Role of Inducers in medium.	
	(d) Define Refinery Black Strap molasses.	
	(B) Name synthetic sources of Nitrogen.	2
	(C) Give importance of precursors.	3
	(D) Note on "Media Optimization.	5
<b>5</b>	(A) (a) Define sporulation media.	4
	(b) Define : Continuous fermentation.	
	(c) Why Aseptic operations are important ?	
	(d) What is Vortex formation ?	
	(B) Why Air Sterilization is important in Bioprocess ?	2
	(C) What is air lift fermenter ?	3
	(D) Write on basic functions of fermentor.	5
<b>6</b>	(A) (a) Define Production Medium.	4
	(b) Define Agitation process.	
	(c) Role of Baffles.	
	(d) What is location of Impeller in Reactor ?	

- (B) Major disadvantage of Airlift fermenter. **2**
- (C) List out method used for medium sterilization. **3**
- (D) Discuss various types of Bioreactors. **5**
- 7** (A) (a) Define supercritical fluid extraction. **4**
- (b) Name a method of Non-mechanical disintegration of cells.
- (c) Define optimization process.
- (d) Use of amylase enzyme.
- (B) Role of chromatography in Bioprocess. **2**
- (C) Disadvantages of solid shear technique. **3**
- (D) Discuss the methods of cell separation. **5**
- 8** (A) (a) Define Bioassay. **4**
- (b) What are bioindicators ?
- (c) Name any method of diffusion assay.
- (d) Define : Centripetal force.
- (B) Name physical assay of fermentation products. **2**
- (C) What is role of 'Liquid-Liquid extraction system' ? **3**
- (D) Write on supercritical fluid extraction for product recovery. **5**
- 9** (A) (a) Name one method of immobilization of enzymes. **4**
- (b) What is the application major of immobilized enzymes/cells ?
- (c) Which fungi produce citric acid ?
- (d) Name alcohol producing microbe.
- (B) Enlist types of Amylases. **2**
- (C) List out the advantages of immobilization. **3**
- (D) Write in detail penicillin fermentation. **5**

- 10** (A) (a) Name different types of centrifuge. **4**  
(b) Give applications of proteases.  
(c) Name fungi producing antibiotic.  
(d) Where cross linking method is used ?
- (B) Write the use of sedimentation method. **2**
- (C) What are the properties of Bioindicators used in Bioassay ? **3**
- (D) Write in detail production of amino acids – Lysine. **5**
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