



SEAT No. \_\_\_\_\_

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[11/A9] B.Sc

Sardar Patel University  
Semester examination 2022(04/10/22)

B.Sc VI<sup>th</sup> Semester-Biotechnology

Course no. US06CBIT05

Industrial Biotechnology

Time – 2hrs(3.30 to 5.30PM)

Marks-70

NOTE- Figure in the right indicates marks .

All questions are compulsory. Make necessary diagram wherever needed.

Q.1. Multiple Choice Question (MCQ). Select correct answer from given MCQ. [10marks]

1. Which of the following substrate used as carbon sources in fermentation process  
(A) Molasses (B) Ammonium salts  
(C) Corn steep liquor (D) Yeast extract
2. Select the most advance method of strain improvement technique  
(A) Mutant selection (B) Recombination  
(C) Genetic engineering (D) Protoplast fusion
3. Enrichment culture technique are used during  
(A) Secondary screening (B) Primary screening  
(C) Inoculums development (D) Downstream processing
4. Which enzyme are most commonly used for cell disruption.  
(A) Cellulase (B) Lysozyme (C)  $\beta$ -lactamase (D) Amylase
5. A device in which the organism is cultivated and motivated to form desired product are-  
(A) Agitator (B) Fermentor (C) Impellar (D) Sparger
6. Which of the following are methods of downstream processing  
(A) Separation of cells (B) Purification  
(C) Concentration of desired product (D) All of the above
7. Aeration in fermenter is provided by  
(A) Sparger (B) Impellers (C) Baffles (D) Stirrer shaft.
8. \_\_\_\_\_ can used as flavorings agents in beer production  
(a) Hops (b) Sunflower  
(c) Mustard flower (d) All of these
9. Cheese are invariably made from  
(A) Casein of milk (B) Riboflavin of milk (C) Fat of milk (D) Minerals of milk.
10. Select the bacteria which causes food poisonings in humans  
(A) Clostridium spp. (B) Salmonella spp.  
(C) Steptomyces spp (D) All of the above

P.T.O

**Q.2.Fill in the blanks/true false**

**(08 Marks)**

- a. Fermentation is-----process.
- b. Solvent extraction is part of-----.
- c. C crit is used for analysis of-----.
- d. Sparkling wine are also called-----.
- e. Corn steep liquor is source of fat-True/False
- f. Sparger is needed for aeration- True/False
- g. PH electrode is made up of steel- True/False
- h. Canning is responsible for food spoilage- True/False

**Q.3. Short questions (2 marks each) attempt any ten**

**[2x10=20marks]**

- [1] What do you mean by term fermentation?
- [2] Write a brief note on application of fermentation.
- [3] Why screening of microbial strain is important?
- [4] Define fermenter.
- [5] What is significance of aeration during fermentation?
- [6] What do you mean by downstream processing?
- [7] Enlist various structural component of fermenter which controls aeration and agitation.
- [8] Give the effect of pH on fermentation.
- [9] Enlist the various effects of temperature on fermentation.
- [10] Write a brief note on importance of ethanol.
- [11] Enlist various ingredients of beer.
- [12] What is red wine?

**Q.4.Attempt any four questions**

**(8x4=32)**

- 1. Enlist and explain techniques of media sterilization in detail. [8]
- 2. Explain various media ingredients for typical fermentation process. [8]
- 3. Briefly describe the major steps of downstream processing. [8]
- 4. Write notes on solvent extraction in detail. [8]
- 5. Write short notes on methods of measurement of temperature for fermentation. [8]
- 6. What is KLa? Explain in detail. [8]
- 7. Explain the production of beer through fermentation process. [8]
- 8. Describe various techniques of food preservation in detail. [8]

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