

**NOTE:**

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. For **Q 2, Q 3 and Q 4** attempt A and B **OR** C and D.

**Q 1 Do as directed (Any fifteen)**

**15**

1. State true or false. Enrichment culture technique is a secondary screening technique.
2. Name any one Lactic Acid bacteria.
3. Name any one of the strain improvement techniques.
4. Media containing starch can be used for the screening of \_\_\_\_\_ enzyme producers.
5. Name the medium used for the preservation of *Clostridium* spp. by serial subculture.
6. \_\_\_\_\_ oil is used for preservation by overlaying cultures.
7. Name any one desirable property used for the screening of yeast for alcohol production.
8. State the importance of sampling during fermentation.
9. \_\_\_\_\_ may be used for continuous sterilization.
10. Adding feed and removal of spent broth at the same rate is a feature of \_\_\_\_\_ fermentation.
11. Give significance of aeration in a fermentor.
12. Feed is added without removal of spent broth in \_\_\_\_\_ type of fermentation.
13. Solid state fermentation is preferably used for the cultivation of \_\_\_\_\_.
14. Name any one downstream production technique.
15. Write any one disadvantage of bioprocess methods.
16. What is the full form of AUC?
17. Write the formula used to calculate R<sub>f</sub> value.
18. Detection of amino acids separated by paper chromatography can be done by using -----reagent.
19. What are the different routes of drug administration?
20. PCV is used for the determination of -----in fermentation process.

- Q 2 A Discuss the role of fungi in different industrial production processes with suitable examples. 08
- Q 2 B Write a note on primary screening of antibiotic producers from soil. 07
- OR
- Q 2 C Describe lyophilisation as a preservation technique. 08
- Q 2 D Give significance of sugar and alcohol tolerance of yeast for ethanol production. 07
- Q 3 A Give an account of continuous sterilization. 08
- Q 3 B Give an account of fermentative production of ethanol using a flow-sheet. 07
- OR
- Q 3 C Discuss the different components of fermentation media. 08
- Q 3 D Describe pH and Temperature as fermentation process parameters. 07
- Q 4 A Define Bioavailability and write a short note on the serum concentration-time profile for a hypothetical drug administered extra-venously. 08
- Q 4 B What are physical- chemical and biological assay methods? Discuss with proper example and state both assay methods' advantages and disadvantages. 07
- OR
- Q 4 C What is a biological assay? State its advantages and disadvantages and write a short note on test organisms used for biological assay 08
- Q 4 D Write a short note on turbidity analysis and cell yield determination. 07
- Q 5 Write a short note on any three of the following 15
- a Auxanography.
  - b Turbidostat type of continuous fermentation.
  - c Maintenance of aseptic conditions in fermentation.
  - d Titrimetric and gravimetric analysis.
  - e Half-life determination of a drug.