

Please check whether you have got the right question paper.

- N.B:**
1. Question No.1 is **compulsory**.
  2. Attempt any 3 questions out of remaining 5 questions.
  3. Draw diagram wherever necessary.

1. Write short notes on any four of the following: **20**
    - a) Enrichment technique
    - b) Biosurfactant
    - c) Aerobic fermentation
    - d) Airlift bioreactor
    - e) Carbon catabolite repression
    - f) Submerged fermentation
  
  2.
    - a) What criteria are used for medium optimization? **10**
    - b) What is inoculum development? Discuss the key points to be considered in developing an inoculum. **10**
  
  3.
    - a) Explain functioning and importance of bubble column and airlift bioreactors. **10**
    - b) Describe various part of a typical fermenter. Illustrate with suitable diagram. **10**
  
  4.
    - a) Explain the method of production of cider-vinegar. **10**
    - b) Describe the method involved in penicillin production. **10**
  
  5.
    - a) Write a note on feedback inhibition and repression. **10**
    - b) Define KLa. Discuss the factors affecting KLa values. **10**
  
  6.
    - a) Describe upstream and downstream processing in fermentation. **10**
    - b) Describe preservation of useful microbes. **10**
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