

Q.P. Code : 12796

(2½ Hours)

[ Total Marks : 75

- N.B. : (1) Attempt all questions.  
(2) All questions carry equal marks.  
(3) Draw neat labeled diagrams wherever necessary.

- 1 a) Do as directed (Any three) 3
- i. Name two sweeteners added to yogurt.
  - ii. State the role of salt in cheese production.
  - iii. Define Homofermentation
  - iv. Give two examples of normal flora of milk.
  - v. Name two genera of psychotropic organisms found in milk
  - vi. Name two coloring agents used in butter.
- 1 b) Answer the following (Any two) 12
- i. Schematically represent Swiss cheese production.
  - ii. Discuss : "Characteristics and role of starter cultures used in the dairy industry"
  - iii. Explain the factors affecting bacteriological quality of milk.
  - iv. Elaborate on any two tests based on oxidation reduction quality of milk.
- 2 a) Give one example of: (Any three) 3
- i. Culture for ethanol fermentation
  - ii. Fungal culture used in citric acid fermentation
  - iii. Organism used for beta lactam antibiotic production
  - iv. Semi-synthetic penicillin
  - v. Raw material used in ethyl alcohol fermentation
  - vi. Raw material used in wine
- 2 b) Attempt the following: (Any two) 12
- i. Explain the process of Penicillin production.
  - ii. What is vinegar? With a labeled diagram explain the design of trickling filter.
  - iii. Describe production of wine in detail.
  - iv. Give an account of production of citric acid by submerged culture process.

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- 3 a) Give the role of: (Any three) 3
- i. Injector
  - ii. Sample port
  - iii. Dissolved Oxygen electrode
  - iv. Antifoam agent
  - v. pH probe
  - vi. Exit gas analyser
- 3 b) Attempt the following (Any two) 12
- i. Give the working of the airlift fermentor with an inner loop
  - ii. Discuss the working of bioreactors used for animal cell culture
  - iii. Elaborate on the measurement and control of pressure in fermentation process
  - iv. Give the working of Bubble column fermentor
- 4 a) Explain the terms (Any three) 3
- i. Liquid shear
  - ii. Exclusion chromatography
  - iii. Whole broth processing
  - iv. Reverse osmosis
  - v. Crystallization
  - vi. Precipitation
- 4 b) Elaborate on the following: (Any two) 12
- i. Factors involved in Scale up in a fermentation process
  - ii. Filtration in downstream processing with reference to pressure leaf filters
  - iii. Any three mechanical methods of cell disruption in detail
  - iv. Distillation in a downstream processing with a neat labelled diagram
- 5 Write short notes on: (Any three) 15
- i. Pasteurization
  - ii. Manufacture of butter and its spoilage
  - iii. Foam separation
  - iv. Packed column reactor
  - v. Streptomycin production
  - vi. Spoilage of beer