

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