Ind. Ist/Ist
8/10

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 psychotrophic organisms found in milk
vi. Name two coloring agents used in butter.

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1 b) Answer the following (Any two)
i. Schematically represent Swiss cheese production.
ii. Discuss :"Characteristics and role of starter cultures used in the dairy industry"
iii. Explain the factors affecting bacteriogical 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

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