



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester 6) Internal Examination - 2026
US06MAMIC02: Fermentation Technology

Date: 07/03/2026, Saturday
Time: 10:45 AM to 12:15 PM

Total marks :30

Q-1 Attempt all following multiple-choice question.

(06)

1. Primary screening is mainly used to:
(a) Determine product yield (b) Detect microorganisms producing desired metabolites
(c) Improve strain genetically (d) Sterilize media
2. Which of the following is commonly used as a carbon source in fermentation?
(a) Ammonium sulfate (b) Molasses (c) Urea (d) Nitrate
3. The adding inoculum into bioreactor is known as _____
(a) Sterilization (b) Seeding (c) Aeration (d) Agitation
4. If the product is extracellular, the first step is:
(a) Cell disruption (b) Filtration or centrifugation (c) Crystallization (d) Drying
5. Centrifugation separates cells based on:
(a) Color (b) Shape (c) Density differences (d) Solubility.
6. Reference Standard Endotoxin developed by U.S.P for LAL test is:
(a) EC-5 (b) EC-4 (c) EC-3 (d) EC-2

Q-3 discuss the characteristics of an ideal industrial fermentation medium.

(06)

OR

Q-3 Describe the significance of secondary screening.

(06)

Q-4 Criteria used for design of industrial fermenter.

(06)

OR

Q-4 Describe factors affecting mass transfer of oxygen or $K_L a$.

(06)

Q-5 Methods of Immobilization of microbial enzymes and cell.

(06)

OR

Q-5 Write a Note on: Disruption of microbial cells.

(06)

Q-6 Write a Note on: LAL Test

(06)

OR

Q-6 Explain Baker's yeast fermentation.

(06)





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Quiz



Fill in the blank

- (1) Antibiotics are _____ metabolites (secondary, Primary)
- (2) Increasing production from lab to industry level is called _____. (Scale down, Scale-up)
- (3) Concentrations of nutrients, microorganisms, and product remain relatively constant over time is known as _____. (Steady state operation, Continuous operation)
- (4) The formation and persistence of gas bubbles at the surface of a liquid is known as _____. (Mixing, Foaming)
- (5) Intracellular products require _____ (Cell disruption, Filtration only)
- (6) Liquid-liquid extraction is based on _____. (Density difference, Solubility difference in two immiscible liquids)
- (7) Which of the following biosafety level is applicable to non-pathogenic organisms? (BL 2, BL1)
- (8) Sterility testing is performed to detect _____. (Pyrogens only, Viable microorganisms)

True or Falls

- (1) Ammonium sulphate is commonly used as a nitrogen source in fermentation media.
- (2) Foam in fermenters is controlled by adding antibiotic.
- (3) The larger the $K_L a$ the higher the aeration capacity of the system.
- (4) Impeller is component part of agitation system.
- (5) Chromatography separates molecules based on properties such as size, charge, or affinity.
- (6) Reverse osmosis removes water from solution.
- (7) Thioglycollate Medium is mainly used for Fungi.