

RAN-2103080603010002
M.Sc. (Microbiology) (Sem. - III) Examination October - 2025
Microbiology : MB3001: Fermentation Technology
Time: 3 Hours]
[Total Marks: 70

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) Figures to the right indicate full marks of the question. (3) Draw neat and labelled diagrams whenever necessary.	Seat No.: Student's Signature
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- Q. 1 Give detailed answers. (Any Two) 18**
- Describe the various screening methods for industrially important microorganisms, including high-throughput screening.
 - Explain the methods to access silent biosynthetic pathways and the role of metabolomics in the discovery of novel compounds.
 - Describe the techniques for strain improvement, focusing on the selection and improvement of industrial organisms
- Q. 2 Answer the following. (Any Two) 18**
- What are typical media used in industrial fermentation? Explain their formulation with suitable examples.
 - Explain the importance and different methods of media sterilization.
 - Describe the statistical optimization of media.
- Q 3. Answer the following. (Any Two) 18**
- Discuss in detail: aerated stirred-tank batch fermenter.
 - Explain the methods used for measuring process variables and on-line analysis of chemical factors in fermenters.
 - Discuss the current trends and prospects in fermenter design and applications. Also discuss the function and relevance of a pilot-scale unit in microbial process development.
- Q. 4 Write short notes on any two of the following. 16**
- Write a detail note on removal of microbial cells, other solid matters and foam separation.
 - Explain the principles of liquid-liquid extraction, drying, and crystallization.
 - Discuss the various disposal methods and treatment processes for effluents