



ANDHRA UNIVERSITY TRANS-DISCIPLINARY RESEARCH HUB

INDUSTRIAL MICROBIAL PRODUCTS

Unit. I

Fundamentals involved in production of industrial microbial product details of fermentors, synthetic and natural medium, Precursors, Sterilization methods and inoculum preparation

Unit. II

A detailed study of ethanol production by fermentation, using black strap molasses, Starchy substance and glucosic like waste sulfate liquid, Purification methods of fermented broth and production of absolute ethyl alcohol

Unit. III

Materials for fermentative production of vinegar, lactic acid, citric acid and Aminoacids. The method involves selection of particular strain of the microorganism for industrial fermentation, process details and purification.

Unit. IV

Production of alcoholic beverages with beer, brandy, whisky and wine Production of Baked goods, cheese and other dairy products

Unit. V.

Production of antibiotics. Tetracyclines. alkaloids, bakers yeast and microbial enzymes and co-enzymes. Fermentative materials for producing vitamins

Texts References:

1. Samuel C. Prescott and Ceceil. Gunn, "industrial microbiology", McGraw hill publication.
2. L. E, Casida. Jr "Industrial Microbiology", Wiley Eastern limited.
3. H.J.Peppler and D.,Pulman, "Microbial technology" Vol I and II (Academic Press).
4. A. E. Humphrey, "Biochemical Engineering"



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Time: 3Hours

Max. Marks: 100

All questions carry equal marks.

Answer any FIVE

1. Explain industrial fermentation. Write in detail about the raw materials and medium requirements for fermentation process.
2. Describe the industrial fermentation process for the production of ethanol.
3. Explain the process details for the production of Citric Acid by fermentation on an industrial scale.
4. Describe the fermentation process for the manufacturing of Vinegar.
5. Elaborate the steps involved in the production process of cheese.
6. Explain the fermentation process for the production of Vitamin B₁₂
7. Write in detail the microbial production of Streptomycin and its applications.
8. a) Write notes on Bakers' Yeast and its production
b) Describe the fermentation process for the production of any industrial enzyme.