



HA-003-001526

Seat No. _____

B. Sc. (Sem. V) (CBCS) Examination

May / June – 2017

MB-502 : Microbiology

(Bioprocess Technology) (New Course)

Faculty Code : 003

Subject Code : 001526

Time : 2½ Hours]

[Total Marks : 70

Instruction : All questions are compulsory.

1 Short questions : 20

- (1) Give two uses of Yeast at Industrial scale.
- (2) In which phase of Growth Primary Metabolites are produced ?
- (3) Give names of two groups of commercially important fermentation.
- (4) Give two names of enzymes used in Pharmaceutical Industry.
- (5) Give names of two products for which molasses is used as carbon source.
- (6) The pH of fermentation media can be controlled externally by addition of _____ and _____.
- (7) Organic nitrogen can be supplied in fermentation media as _____.
- (8) Chemically defined amino acid media devoid of protein are necessary in the production of certain _____.
- (9) Give example of continuous industrial fermentation.
- (10) Why fed-batch culture is used in fermentation ?
- (11) Give full form of GILSP.
- (12) The tower fermenter was used for the first time for _____.
- (13) Give names of two methods of product recovery.
- (14) Enlist Mechanical methods of cell disruption.
- (15) Give two examples of Biological assays.

- (16) Give two names of detergents used in Nonmechanical cell disruption method.
- (17) Give two names of fungi producing protease.
- (18) Give two names of organisms producing penicillin.
- (19) Which two organisms produce ethyl alcohol at industrial level ?
- (20) The antibiotic streptomycin is produced by _____.

- 2** (a) Answer any three from six : **6**
- (1) What is the role of Primary and Secondary Metabolites ?
 - (2) Give characteristics of an ideal fermentation medium.
 - (3) Give advantages and disadvantages of Batch fermentation.
 - (4) Enlist criteria for choice of recovery process.
 - (5) What is screening ? Discuss various techniques used in primary screening.
 - (6) What is Riboflavin ? Enlist cultures used to produce it.
- (b) Answer any three from six : **9**
- (1) Discuss development of fermentation industry.
 - (2) What is Media formulation ?
 - (3) Give functions of fermentor.
 - (4) Explain : Cross flow filtration.
 - (5) Discuss Air Sterilization.
 - (6) Explain : L-lysine fermentation.
- (c) Answer any two from five : **10**
- (1) Application of Bioinformatics in fermentation.
 - (2) Component parts of fermentation process.
 - (3) Aeration and Agitation.
 - (4) Cell Disruption Methods by physical means.
 - (5) Citric Acid fermentation.
- 3** (a) Answer any three from six : **6**
- (1) Enlist applications of Amylase.
 - (2) Give difference between inoculum and fermentation media.
 - (3) How media can be sterilized by filtration ?
 - (4) Enlist various continuous filters. Explain any one.

- (5) Which are different organic and inorganic sources of nitrogen used in fermentation media ?
- (6) Give outline of Amylase fermentation by Bacteria.
- (b) Answer any three from six : **9**
- (1) Discuss strain improvements of industrially important organisms.
- (2) What is Media Optimization ?
- (3) Explain any two different types of fermentors.
- (4) Discuss : Bioassay in product recovery.
- (5) Describe : Supercritical fluid extraction.
- (6) Give brief view of immobilization techniques.
- (c) Write short notes on any two from five : **10**
- (1) Carbon as energy source.
- (2) Antifoam Agents
- (3) Types of fermentation processes
- (4) Types of paper chromatography
- (5) Highlights of Ethanol fermentation.
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