



MAK-003-001526

Seat No. _____

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

October / November – 2016

MB-502 : Bioprocess Technology

Faculty Code : 003

Subject Code : 001526

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) All questions are compulsory.
 - (2) Draw diagram wherever necessary.
 - (3) Figures at the right indicate total marks of the question.

1 Answer the following questions : 20

- (1) Production of Monoclonal antibody is considered as the stage _____ of the development of fermentation Industry.
- (2) Detection and isolation of microorganisms that possess potentially interesting industrial applications is called _____.
- (3) Give full form of ATCC.
- (4) A _____ is a continuous-flow system provided with a photoelectric cell to determine the turbidity of the culture and maintain the turbidity between set points by initiating or terminating the addition of medium.
- (5) Quantity of cell dry matter produced per Quantity of carbon substrate utilized is known as _____ coefficient.
- (6) Antifoams are Surface _____ Agents.
- (7) Inducible enzymes are synthesized only in response to the presence in the environment of _____.

- (8) Phenylacetic acid is the most widely used precursor in _____ production.
- (9) Holding Time required for sterilization of media at 130°C is _____ minutes.
- (10) Viral contaminant can be removed by filter of _____ micron.
- (11) Vaned disc is example of _____.
- (12) _____ organisms require oxygen for their growth.
- (13) Full form of SCP.
- (14) Triazine dyes binds and precipitates certain _____.
- (15) _____ shock caused by a sudden change in salt concentration will cause disruption of a number of cell types.
- (16) Gravimetric analysis is the example of _____ Assay.
- (17) Citrus fruits contain _____ acid.
- (18) Penicillin is discovered by _____.
- (19) Low molecular weight compounds cannot be immobilize by _____.
- (20) Starch is made of _____ and _____.

2 (a) Answer the following : (any 3)

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- (1) Define Primary Screening with example.
- (2) Define production media.
- (3) Define Rheology.
- (4) Define partition coefficient.
- (5) Name any two organisms producing Riboflavin.
- (6) Explain Solvent recovery.

- (b) Answer the following : (Any 3) 9
- (1) Range of fermentation process.
 - (2) Criteria for selecting media for fermentation industry.
 - (3) Spargers used in fermentation industry.
 - (4) Foam separation technique.
 - (5) Give six uses of Amylases.
 - (6) Historical development of industrial microbiology.
- (c) Answer the following : (Any 2) 10
- (1) Improvement of Industrially important microbes by Recombinant DNA technology.
 - (2) Crude Carbon and Nitrogen sources used in fermentation industry.
 - (3) Discuss various points to be considered in designing and construction of a fermenter.
 - (4) Biological assay.
 - (5) Fermentative production of citric acid.
- 3** (a) Answer the following : (Any 3) **6**
- (1) Define Protoplast.
 - (2) Enlist two precursor molecules used in fermentation industry.
 - (3) Define Del factor.
 - (4) Define Precipitation.
 - (5) Characteristics of stains used for alcohol fermentation.
 - (6) Give the biochemical reaction for ethanol production.

(b) Answer the following : (Any 3) 9

- (1) Component parts of fermentation process.
- (2) Role of Inducers and inhibitors in fermentation industry.
- (3) Cyclone column fermenter.
- (4) Tangential filtration process.
- (5) Extraction of penicillin.
- (6) Media optimization.

(c) Answer the following : (Any 2) 10

- (1) Economic aspects of Fermentation Industry.
- (2) Media optimization.
- (3) Batch and continuous fermentation process and their comparative advantages and disadvantages.
- (4) Techniques for cell disruption.
- (5) Immobilization of cells and enzymes.
