



HCM-003-001526

Seat No. _____

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

October - 2017

Microbiology : 502

(Bio-Process Technology) (New Course)

Faculty Code : 003

Subject Code : 001526

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

[Total Marks : 70

Instructions :

- (1) All questions are **compulsory**.
- (2) Draw diagrams whenever **necessary**.
- (3) Write answers of all questions in the main answer sheet.

1 Answer the following questions. **20**

- (1) Enlist the chemical methods of immobilization.
- (2) Give the full form of ATCC.
- (3) Calcium Alginate is used for _____ method of Immobilization.
- (4) Define : Precursor.
- (5) Give the full form of CSTF.
- (6) Hockenhull medium is used _____ fermentation.
- (7) GILSP = _____.
- (8) What is Aspect Ratio ?
- (9) Full form of NCYC.
- (10) Citrus fruits contain _____ acid.

- (11) What is primary metabolite ?
- (12) Full name of SCP.
- (13) What is Idiophase ?
- (14) Streptomycin was discovered by _____.
- (15) Which solvent is the most commonly used in super critical fluid extraction ?
- (16) Streptomycin is produced by _____ (organism name)
- (17) Define : Fermentation.
- (18) Huck used the statistical SDA technique to design media for the positive selection of Antibiotic producing soil isolate. What is SDA ?
- (19) Define : Baffles.
- (20) Who developed methods for isolating and propagating single yeast cells to produce pure cultures and established sophisticated techniques for the production of starter cultures.

2 (a) Answer the following : (any three) **6**

- (1) What is production media ?
- (2) Write in brief about fed batch process.
- (3) Enlist the types of Bioreactors.
- (4) Explain Rheology.
- (5) Give an example of enzymes which are used in Brewing and Textile Industries.
- (6) "Biological Assay" – define it.

(b) Answer the following : (any three) **9**

- (1) Write a note on protoplast fusion.
- (2) Write a note on Agitation device.

- (3) Which is the byproduct of streptomycin fermentation?
How its concentration can be increased ?
- (4) Write about Inoculum medium.
- (5) Short note on "Antifoam Agents'.
- (6) What are the benefits of cross-flow filtration ?
- (c) Answer the following : (any two) **10**
- (1) Medium optimization in fermentation industries.
- (2) R-DNA technology as a method of strain improvement.
- (3) Crude carbon and nitrogen sources used in fermentation industry.
- (4) Sterilization of air.
- (5) Explain production of Amino Acid : Lysine.
- 3** (a) Answer the following : (any three) **6**
- (1) What is chelator used in fermentation medium ?
Give an example.
- (2) Define : Chemostate and Turbidostate.
- (3) What is Impeller ?
- (4) Define Del-Factor.
- (5) Write about rotary vacuum filter.
- (5) Define : Stroke's Law.
- (b) Answer the following : (any three) **9**
- (1) Methods of cell separation.
- (2) Write about recovery of penicillin.
- (3) Enlist types of centrifuges used in fermentation industry.

- (4) Labelled diagram of Ideal bioreactor.
- (5) Molasses as C-source of fermentation.
- (6) Explain primary screening of antibiotics producing microbes.

(c) Answer the following : (any two) **10**

- (1) Enlist the characteristics of an ideal, fermentation medium.
 - (2) Write note on range of fermentation.
 - (3) Application of Immobilized enzyme.
 - (4) Various methods for strain improvement.
 - (5) Differences between Inoculum medium and Fermentation medium.
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