



RX-003-1016011 Seat No. _____

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

March - 2019

MB - 601 : Microbiology

(Bioprocess Technology)

Faculty Code : 003

Subject Code : 1016011

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

[Total Marks : 70

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

- 1** (A) Answer specifically : **4**
 (1) Define Screening.
 (2) What is Recombinant DNA technology?
 (3) What is Protoplast Fusion?
 (4) Define: Molasses
- (B) Answer in Brief : (Any One) **2**
 (1) Why Fermentation industries are important?
 (2) What are Primary Screening Media?
- (C) Answer in detail : (Any One) **3**
 (1) Give few examples of Primary Screening media used for isolation of Antibiotic Producers.
 (2) Why improvement of industrial microbes is important?

- (D) Write a note : (Any One) 5
- (1) Range of Fermentation processes.
 - (2) Economic aspects of Fermentation industry.
- 2 (A) Answer specifically : 4
- (1) What is Inoculum media?
 - (2) What is Bioreactor?
 - (3) Define: Precursors
 - (4) What are Antifoam agents?
- (B) Answer in Brief : (Any One) 2
- (1) What are synthetic media?
 - (2) List the types of Molasses.
- (C) Answer in Detail : (Any One) 3
- (1) Write the difference between Synthetic and Crude media?
 - (2) Give the examples of Crude Nitrogen sources as Raw material.
- (D) Write a note : (Any One) 5
- (1) Write on media optimization.
 - (2) Write on Fermentation media and its types.
- 3 (A) Answer specifically : 4
- (1) Define: Aeration process
 - (2) What is medium sterilization?
 - (3) What do you mean by Aseptic Operation?
 - (4) Why Agitation is important?

- (B) Answer in Brief : (Any One) **2**
- (1) What is the importance of Baffles in Bioreactor?
 - (2) Give function of Impeller.
- (C) Answer in Detail : (Any One) **3**
- (1) What is Tower Fermentor?
 - (2) What is Airlift Fermentor?
- (D) Write a note (Any One) **5**
- (1) Write criteria for design of a Fermentor.
 - (2) What is the importance of sterilization process in Fermentation industries?
- 4 (A) Answer specifically : **4**
- (1) What is Sedimentation process?
 - (2) What are Biological Assay?
 - (3) Define: Two phase Aqueous Extraction system
 - (4) What is Supercritical Fluid Extraction?
- (B) Answer in Brief : (Any One) **2**
- (1) What is the importance of Centrifugation techniques in fermentation industries?
 - (2) Give few examples of non-mechanical method of Cell lysis.
- (C) Answer in Detail : (Any One) **3**
- (1) Which are the chemical methods of assay of Fermentation products?
 - (2) What do you mean by Solvent recovery method?
- (D) Write a note : (Any One) **5**
- (1) List out Cell Disruption techniques and explain any one in detail.
 - (2) Write on Biological assay of Fermentation product.

- 5 (A) Answer specifically : 4
- (1) Name the organism producing Amylase enzyme.
 - (2) Name the organism producing Ethyl Alcohol.
 - (3) Which organism produces Citric acid?
 - (4) Define: Immobilization
- (B) Answer in Brief : (Any One) 2
- (1) Name two techniques of immobilization of Cell/ Enzyme.
 - (2) Name the different antibiotic producing microbes.
- (C) Answer in Detail : (Any One) 3
- (1) What are the uses of Ethyl alcohol?
 - (2) Write the basic difference between Enzyme producer and Antibiotic producer.
- (D) Write a note : (Any One) 5
- (1) Give overview of Immobilization techniques in Fermentation techniques.
 - (2) Production of Vitamin- Riboflavin.
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