



Seat No. \_\_\_\_\_

**H-003-1016011**

**Third Year B. Sc. (Sem. VI) (CBCS) (W.E.F. 2016) Examination**

**April - 2023**

**Bio Process Technology : MB601**

**Faculty Code : 003**

**Subject Code : 1016011**

Time :  $2\frac{1}{2}$  / Total Marks : 70

- 1 (a) Objective type question : 4
- (1) Define fermentation.
  - (2) Define recombinant DNA technology.
  - (3) What is screening ?
  - (4) What is protoplast fusion ?
- (b) Answer in brief : (any one) 2
- (1) Give a difference between primary screening and secondary screening.
  - (2) Why fermentation industries are important ?
- (c) Answer in detail : (any one out of two) 3
- (1) Explain range of fermentation.
  - (2) Explain component parts of fermentation.
- (d) Write a note on : (any one) 5
- (1) Write a note on economic aspect of fermentation.
  - (2) Write a note on application of protoplast fusion and recombinant DNA technology.
- 2 (a) Objective type questions : 4
- (1) What are precursors ?
  - (2) What is synthetic media ?
  - (3) What is the role of media in fermentation process ?
  - (4) Write an example of minerals used in fermentation process.

- (b) Answer in brief : (any one) 2  
 (1) Give application of growth regulators and buffers.  
 (2) Define anti form agents.
- (c) Answer in detail : (any one) 3  
 (1) Explain media optimization.  
 (2) Write difference between production media and inoculum media.
- (d) Write a note on : (any one) 5  
 (1) Write a note on fermentation media and its type.  
 (2) Write a note on carbon and nitrogen source as raw materials.
- 3** (a) Objective type question : 4  
 (1) What is aseptic operation ?  
 (2) What are bio reactors ?  
 (3) What is medium sterilization ?  
 (4) Give a function of impeller.
- (b) Answer in brief : (any one) 2  
 (1) Define batch fermentation.  
 (2) Write basic function of fermenter.
- (c) Answer in detail : (any one) 3  
 (1) Explain continuous fermentation.  
 (2) Explain aeration and agitation.
- (d) Write a note on : (any one) 5  
 (1) Write a note on sterilization process in fermentation industry.  
 (2) Write a note on types of bioreactor.
- 4** (a) Objective type question : 4  
 (1) What is precipitation ?  
 (2) What is downstream process ?  
 (3) Define sedimentation.  
 (4) Write application of cell disruption technique.

- (b) Answer in brief : (any one) 2  
 (1) Write a use of centrifugation.  
 (2) Define two phase aqueous extraction.
- (c) Answer in detail : (any one) 3  
 (1) Explain non mechanical method for cel destruction.  
 (2) Explain supercritical fluid extraction.
- (d) Write a note on : (any one) 5  
 (1) Write on chemical assay of fermentation product.  
 (2) Write a note on mechanical method of cell disruption.
- 5** (a) Objective type question : 4  
 (1) What is immobilization ?  
 (2) Write use of amylases.  
 (3) Which organism produces ethyl alcohol ?  
 (4) Which organism produces citric acid ?
- (b) Answer in brief : (any one) 2  
 (1) Write importance of Riboflavin vitamin.  
 (2) Write the function of protease enzyme.
- (c) Answer in detail : (any one) 3  
 (1) Explain organic acid production.  
 (2) Explain production of vitamin Riboflavin.
- (d) Write a note on : (any one) 5  
 (1) Describe antibiotic production.  
 (2) Describe immobilization in fermentation process.
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