



DO-003-1194004

Seat No. _____

M. Sc. (Microbiology) (Sem. IV) (CBCS) Examination

March – 2022

Micro - 422 : Fermentation Technology - II

Faculty Code : 003

Subject Code : 1194004

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

[Total Marks : 70

1 Answer any seven : (2 marks each) 14

- (i) What is crystallization?
- (ii) What is French press used for?
- (iii) What is spent sulphite liquor?
- (iv) What is simultaneous saccharification and fermentation process?
- (v) Enlist microorganisms used for commercial lysine production.
- (vi) What is semisynthetic Penicillin?
- (vii) What is pernicious anemia?
- (viii) Which microbial strains are genetically engineered for Vitamin B₁₂ production?
- (ix) Enlist the major objectives for which industrial enzyme-producing microbial strains are improved.
- (x) Enlist enzymes used in the production of high fructose syrup from starch.

2 Answer any two of the following : (7 marks each) 14

- (i) Discuss the process of obtaining anhydrous ethanol from fermentation medium.
- (ii) Explain the steps of enzyme protein isolation from spent fermentation medium.
- (iii) Discuss various methods used for the separation of biomass from spent medium.

- 3** Answer the following : (7 marks each) **14**
(i) Describe production of SCP using molasses as substrate.
(ii) Discuss any one method of enzyme immobilization.
- OR**
- 3** Answer the following : (7 marks each) **14**
(i) Compare fermentative production of ethanol using bacteria and yeast.
(ii) Describe biomass production using hydrocarbons as substrate.
- 4** Answer the following : (7 marks each) **14**
(i) Describe lactic acid fermentation in detail.
(ii) Give basic structure of penicillin and describe penicillin fermentation.
- 5** Written short notes on any **two** of the following : **14**
(7 marks each)
(i) Microbial Polysaccharides
(ii) Pectinases in fruit juice production
(iii) Amylases in Textile Industry
(iv) Use of Chymosins in Dairy
-