

M.Sc. Semester - 4 (CBCS) Examination**March/April- 2018****FERMENTATION TECHNOLOGY -2****(ELECTIVE - 1)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Que-1 Answer the following (any Seven). (14)

- (a) What are different process included under down stream processing ?
- (b) Enlist various factors that regulate microbial production of citric acid.
- (c) Enlist applications of antibiotics.
- (d) Enlist various by-products of ethanol fermentation.
- (e) Outline biosynthesis of lactic acid.
- (f) What is brewery ?
- (g) Enlist microorganisms used for Vitamin B₁₂ production with their average yields.
- (h) What are the advantages of using immobilized enzymes ?
- (i) State various applications of proteases.
- (j) State industrial applications of microbial amylases.

Que-2 Answer the following (any Two) (14)

- (a) Discuss recovery of Glutamic acid.
- (b) Discuss the methods used for microbial cell disintegration.
- (c) Discuss the recovery of ethanol from fermented medium.

Que-3 Answer the following. (14)

- (a) Discuss the advantages of using thermophilic microbes in ethanol fermentation.
- (b) Discuss various methods of cell immobilization.

OR

Que-3 Answer the following.

- (a) Discuss the process for the production of penicillins.
- (b) Comment on the importance of medium formulation in glutamic acid fermentation.

Que-4 Answer the following. (14)

- (a) Discuss various applications of pectinases.
- (b) Describe microbial production of xanthan.

Que-5 Write a short note on (any Two) (14)

- (a) Semi-synthetic Penicillins
- (b) Down-stream processing
- (c) Vitamin B₁₂ recovery
- (d) Enzyme-based detergents and bleaching agents
