

**M.Sc. Semester - 4 (CBCS) Examination**  
**August/September -2020 [OLD COURSE]**  
**FERMENTATION TECHNOLOGY -2 (ELECTIVE - 1)**

**Time: 2:00 Hours****Marks: 56****Instructions:**

1. Figures to the right indicate marks.
  2. There are five questions in the question paper.
  3. Answer any four of the following questions.
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**Que-1 Answer the following (Any seven out of ten, each of 02 marks) [14]**

1. Enlist microbial cell separation methods.
2. What is Molasses? Give its types.
3. Write methods for product separation.
4. Write steps for the downstream process.
5. Which microbe is used for the production of vitamin B-12?
6. Write a pathway of ethanol production.
7. What is SCP?
8. Which microbes are used for Polysaccharide synthesis?
9. Write methods for cell immobilization.
10. What is differential distillation?

**Que-2 Answer the following (Any two out of three, each of 07 marks) [14]**

1. Write a short note on drying and crystallization
2. Briefly describe methods for purification of fermentation products
3. What is foam separation? Briefly describe.

**Que-3 Answer the following (each of 07 marks) [14]**

1. Write a note on sugar substrate useful for Ethanol production
2. Write a note on Immobilization of whole cells.

OR

**Que-3 Answer the following (each of 07 marks) [14]**

1. Write a short note on biomass production.
2. Write a note on Citric acid fermentation.

**Que-4 Answer the following (any two each of 07 marks) [14]**

1. Write a note on fermentative production of vitamin B12
2. Write a note on fermentative production of lactic acid.

**Que-5 Answer the following (Any two out of four, each of 07 marks) [14]**

1. Briefly describe the industrial application of enzymes
2. Describe the fermentative production of amylase.
3. Describe various sources of enzymes.
4. Describe fermentative production of Xanthan.

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