



**JAX-003-013301**

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

**M. Sc. (Biotech) (Sem. III) (CBCS) Examination**

**December - 2019**

**BT - 313 : Fermentation Technology**

**Faculty Code : 003**

**Subject Code : 013301**

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

[Total Marks : 70

1 Answer the following : (Any **Seven** out of Ten, each of **14** Two marks)

- (1) What are primary metabolites?
- (2) How does fermentation differ from respiration?
- (3) What is internal feedback?
- (4) What are stirrer gland and bearings?
- (5) What is distillation?
- (6) Define Filtration.
- (7) Define fermentation.
- (8) What is single cell protein?
- (9) Enlist preservation techniques.
- (10) Define food spoilage.

2 Answer the following : (Any two out of Three, each of **14** Seven marks)

- (a) Explain in detail the control systems used during a fermentation process.
- (b) Write an easy on methods of measuring process variables
- (c) Write an easy on media optimization.

- 3** Answer the following : (each of Seven marks) **14**
- (a) Enlist and explain various strategies to scale up the bioprocess.
  - (b) Write an essay on design and function of some special purpose fermenter.

**OR**

- 3** Answer the following : (each of Seven marks) **14**
- (a) Discuss in detail, membrane processes.
  - (b) Explain value maximization approaches.
- 4** Answer the following : (each of Seven marks) **14**
- (a) Explain in detail production and recovery of ethanol.
  - (b) Write an essay on lactic acid fermentation.
- 5** Answer the following : (Any **Two** out of four, each of Seven marks) **14**
- (a) Write a note on pasteurization.
  - (b) Explain different types of food preservation techniques.
  - (c) Write a note on food spoilage.
  - (d) Explain in detail the food packaging processes.
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