



**DBJ-BT-311**

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

**M. Sc. (Sem. III) (CBCS) (W.E.F. 2016) Examination**

**June - 2022**

**BT - 311 : Biotechnology**

*(Fermentation Technology)*

Time : **2.30** Hours]

[Total Marks : **70**

**Instructions:** Attempt any five questions out of the following:

- 1** Answer the following: (2 marks each) **14**
- (i) What are molasses?
  - (ii) State the difference between primary and secondary metabolites.
  - (iii) State the difference between alpha and beta amylases.
  - (iv) What is biosensor?
  - (v) What is affinity chromatography?
  - (vi) What is mass transfer?
  - (vii) What is an azeotrope?
- 2** Answer the following: (2 marks each) **14**
- (i) Enlist raw materials important as nitrogen sources in industrial fermentations.
  - (ii) Name the precursor used in penicillin fermentation.
  - (iii) What is microbial rennet?
  - (iv) What is dialysis?
  - (v) Enlist food spoilage microbes.
  - (vi) What is fed-batch fermentation process ?
  - (vii) What is crowded plate technique?
- 3** Answer the following: (7 marks each) **14**
- (i) Give an account of methods useful in screening industrially important bacteria.
  - (ii) Discuss methods used in the improvement of microbial strains.

- 4 Answer the following: (7 marks each) **14**  
(i) Give an account of importance of aeration and agitation in industrial fermentations.  
(ii) Describe importance and preparation of starter cultures.
- 5 Answer the following: (7 marks each) **14**  
(i) Give an account of methods used for microbial cell disintegration.  
(ii) Describe purification of ethanol from mother liquor by distillation.
- 6 Answer the following: (7 marks each) **14**  
(i) Describe the two main types of continuous fermentation processes.  
(ii) Describe commercial production of lipases.
- 7 Answer the following: (7 marks each) **14**  
(i) Give an account of methods of food processing.  
(ii) Give an account of microbial food-spoilage.
- 8 Answer the following: (7 marks each) **14**  
(i) Describe methods of food preservation.  
(ii) Describe production of SCP.
- 9 Answer the following: (7 marks each) **14**  
(i) Describe methods used for the concentration and extraction of microbial metabolites.  
(ii) Write a detailed note on bioassay.
- 10 Write a note on the following: (7 marks each) **14**  
(i) Genetically modified foods.  
(ii) Designer foods.
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