

[Time: 2½ Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B:**
1. All questions are **compulsory**.
 2. All question carry equal marks.
 3. Draw neat labelled diagram wherever necessary.

- Q.1 Answer any two of the following: 12
- a. Elaborate on the factors that influence the choice of nitrogen sources.
 - b. Describe any two methods used for large scale animal cell cultivation.
 - c. How would you control and measure pressure and foam in a fermentor.
 - d. Discuss filter sterilization of media and air for a fermentation process.
- Q.2 a. Answer any one of the following: 08
- i) Describe the different physicomachanical methods of cell disruption.
 - ii) Explain any two aerobic processes for effluent treatment.
- b. Explain any one of the following 04
- i) Use of filter aids
 - ii) Oxidation ponds
- Q.3 Explain any two of the following: 12
- a. Sweetners derived from starch hydrolysis.
 - b. Role of enzymes in cheese making.
 - c. Lipase catalyzed inter esterification to modify edible oils and fats:
 - d. Types of amylases and their applications in food industry.
- Q.4 Discuss any two of the following: 12
- a. Fermentation steps in wine production.
 - b. Role of microorganisms in flavor formation in food stuffs.
 - c. Bacteriocin types and application.
 - d. Utilization of dairy waste for production of useful products.
- Q.5 Write short notes on any three of the following: 12
- a. Strain improvement.
 - b. Media optimization.
 - c. Septic tanks.
 - d. Glucose oxide its applications in food.
 - e. Microbes as food colourants.
 - f. Microbial production of citric acid.