

M.Sc.(Microbiology) (CBCS Pattern) Third Semester  
**PSMBT-11 - Paper-III: Bioprocess Technology**

P. Pages : 1

Time : Three Hours



**GUG/W/18/11293**

Max. Marks : 80

- 
1. Write notes on.
- a) Construction, design and parts of fermenters. 8
  - b) Types of bioreactor. 8
- OR**
- Write in detail about process optimization of fermentation. 16
2. Describe ion exchange chromatography in detail. 16
- OR**
- Write notes on.
- a) Purification methods. 8
  - b) Drying techniques. 8
3. Explain the production of ethanol by *S.Cerevisiae* in detail. 16
- OR**
- Write notes on.
- a) Production of streptomycin. 8
  - b) Production of dextran. 8
4. Describe in details production of glucose oxidase. 16
- OR**
- Write notes on.
- a) Production of riboflavin. 8
  - b) Production of amylase. 8
5. Write short notes on.
- a) Monods model. 4
  - b) Reverse osmosis. 4
  - c) Steroid transformation. 4
  - d) Carotenoids production. 4

\*\*\*\*\*