

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

P. Pages : 1

Time : Three Hours



**GUG/W/23/11293**

Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.

1. What is Batch and continuous fermentation? Describe different types of continuous fermentations. **16**

**OR**

Write note on followings.

- a) Geometry of Fermenter. **8**  
b) Fluidized bed reactor. **8**

2. Describe different methods of purification of fermented product. **16**

**OR**

Describe different methods of drying of fermented product. **16**

3. Describe industrial production of chloramphenicol with flow sheet diagram. **16**

**OR**

Write note on followings-

- a) r-DNA technology for ethanol production. **8**  
b) Production of xanthan. **8**

4. Describe the industrial production of Lactic acid from whey and add note on its applications. **16**

**OR**

Describe industrial production of Gibberellin with flow sheet diagram. **16**

5. Write short note on followings.
- a) Reynold numbers. **4**  
b) Membrane filters. **4**  
c) Methane production. **4**  
d) Applications of Amylase. **4**

\*\*\*\*\*