

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

P. Pages : 1

Time : Three Hours



GUG/S/23/11293

Max. Marks : 80

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

1. Explain in detail batch & continuous fermentation? **16**
- OR**
- i) Discuss Growth Kinetics and monad models? **8**
ii) Describe Kinetics of immobilized reactor? **8**
2. Describe in detail ion exchange chromatography with their application? In down stream processes. **16**
- OR**
- i) Discuss bio-separation method of down stream processing? **8**
ii) Describe in detail principle and application of centrifugation? **8**
3. What is antibiotics? Describe in detail production of streptomycin? **16**
- OR**
- i) Describe in detail rDNA technology for ethanol production? **8**
ii) Discuss dextrans as a biopolymers? **8**
4. Describe in detail production of Vit – B₁₂? **16**
- OR**
- i) Explain in detail solid state fermentation of Amylase production? **8**
ii) Describe the production of lactic acid from why? **8**
5. Write short note on:
- i) Types of bioreactors? **4**
ii) Explain Ultrafiltration? **4**
iii) Explain steroid transformation? **4**
iv) Discuss production of riboflavin? **4**
