

FACULTY OF SCIENCE

M.Sc. IV-Semester Examination, May / June 2017

**Subject: Microbiology
Paper- II
Microbial Biotechnology**

Time : 3 Hours

Max. Marks: 80

**PART – A (8x4=32 Marks)
(Short Answer Type)**

1. Downstream processing of alcohol
2. Preparation of wort
3. Vitamin B12 and its importance in metabolism
4. Brief process of glutamic acid production
5. (Semic-synthetic) antibiotics
6. Schematic diagram of penicillin production
7. Importance of biopesticides
8. Proteases

**PART – B (4x12=48 Marks)
(Essay Answer Type)**

- 9.(a) Briefly describe beer production and write the importance of carbonation?
OR
(b) Describe the key steps involved in wine making and their influence on product quality and production yields.
- 10.(a) Describe the citric acid production and its down stream processing.
OR
(b) Write an regulatory role of carbon and nitrogen components in fermentative production of vitamin B12 and briefly describe the steps in down – stream processing.
- 11.(a) Explain the importance of production medium for Penicillin and the key enzymes associated.
OR
(b) Write on commercial importance of different tetracyclines and production of any one.
- 12.(a) Explain fermentation process for lipase production and its industrial importance.
OR
(b) Briefly explain recombinant insulin production.