

B.Sc. Examination March - 2017

Semester - VI

Paper Name: Mi-604- Basic Industrial Microbiology

Paper Code: 4646

Time: 2:30 Hours

Total Marks: 70

Instructions: (a) Figure to the right indicates total marks of respective question.
(b) Draw neat, clean and labeled diagram wherever necessary.

1.(a) Define enzyme immobilization. Explain immobilization of enzymes by cross binding & microencapsulation methods. 07

1.(b) How did Louis Pasteur develop fermentation technology? 07

OR

1.(a) Explain: Continuous stirred tank bioreactor. 07

1.(b) Explain: Gene manipulation technique for strain improvement. 07

2.(a) Discuss: Testing a pharmaceutical product for its sterility. 07

2.(b) Explain: Preparation of inoculum for a fermentation process. 07

OR

2.(a) Describe: The era of discovery of antibiotics and growth of industrial fermentation through century. 07

2.(b) Discuss: The application of immobilized enzymes. 07

3.(a) Sketch a design of a typical fermenter & explain various criteria for designing it. 07

3.(b) Explain: Primary screening technique. 07

OR

3.(a) Discuss: Industrial equipment sterilization. 07

3.(b) Explain: Lyophilization & mineral oil overlaying methods for preservation of microbes. 07

4.(a) Explain immobilization of enzymes by covalent binding & adsorption & entrapment method. 07

4.(b) Differentiate industrial and traditional fermentation process. 07

OR

4.(a) Discuss: Fluidized – bed bioreactor. 07

4.(b) Explain: Spargers & impellers. 07

5.(a) Discuss: Sterilization of air and production media. 07

5.(b) What is starter culture? Write on its preservation and importance. 07

OR

5.(a) Explain: Protoplast fusion technique & role of plasmids for strain improvement. 07

5.(b) Discuss: Air- lift fermenter. 07