

**M.Sc Microbiology Semester IV Examination**  
**March /April - 2015**  
**Industrial Microbiology Paper No. XIV**  
*Code-3703*

**Time: 02:30h**

**Total Marks: 70**

**Each question carries equal marks.**

- Q. 1** Write a note on: (a) Strain improvement by mutation.  
(b) Enrichment methods.

**OR**

- Q. 1** Discuss in detail the primary and secondary screening of microorganisms for industrial fermentation.
- Q. 2** Explain: (a) The design of a typical mechanically driven large scale fermentor.  
(b) The design of Immobilized enzyme reactors.

**OR**

- Q. 2** (a) Discuss continuous sterilization and its advantages.  
(b) Write briefly on: (i) HMI and (ii) SCADA.
- Q. 3** List and discuss various methods used in product recovery.

**OR**

- Q. 3** Write notes on: (a) Antifoam agents.  
(b) Scale up of Bioprocesses.
- Q. 4** Discuss the fermentative production of penicillin.

**OR**

- Q. 4** a) Explain industrial applications of enzymes.  
b) Write a note on Citric acid recovery.
- Q. 5** Explain SCP production in detail.

**OR**

- Q. 5** Write notes on: (a) Mushroom cultivation.  
(b) Steroid transformations.
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