

**T. Y. B. Sc. (Biotechnology) SEM – VI (2010 COURSE) : WINTER -  
2018**

**SUBJECT: INDUSTRIAL BIOTECHNOLOGY**

**Day :** Saturday  
**Date :** 20/10/2018

**W-2018-1201**

**Time** 10.00 AM TO 01.00 PM  
**Max.Marks:**80

**N.B.**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in the **SEPARATE** answer book.

**SECTION –I**

- Q.1 A)** Answer **ANY ONE** of the following: (06)
- i) What is primary screening? Discuss the steps in primary screening.
  - ii) Discuss industrial fermentation of Amylase in brief.
- B)** Answer **ANY FIVE** of the following: (10)
- i) What are the criteria for selection of industrially important microorganisms?
  - ii) What are the components of fermentation process?
  - iii) What is inoculum development?
  - iv) What is the world scenario of enzyme fermentation?
  - v) What is the role of chelators in fermentation media?
  - vi) Mention criteria for selecting raw materials for formulation of fermentation media.
- Q.2 A)** Write short notes on **ANY FOUR** of the following: (16)
- i) Preservation methods of industrially important microorganisms.
  - ii) Nitrogen sources in fermentation media.
  - iii) Antifoam agents
  - iv) Inoculum development of bacteria
  - v) Solid state fermentation.

**SECTION –II**

- Q.3 A)** Answer **ANY ONE** of the following: (06)
- i) Draw a neat labelled diagram of a typical fermenter and explain its various parts.
  - ii) Discuss industrial production of streptomycin.
- B)** Answer **ANY FIVE** of the following: (10)
- i) Name the various methods of enzyme immobilization. Give the applications of immobilized enzymes.
  - ii) How is glucose monitored during fermentation?
  - iii) What are the applications of papain?
  - iv) What are the different methods of measurement of biomass?
  - v) What is ultra-filtration? Give its significance
  - vi) What is Rotameter? Mention its functions.
- Q.4** Answer **ANY FOUR** of the following: (16)
- i) Explain the methods of assessment of Papain activity.
  - ii) Discuss ethanol fermentation in brief.
  - iii) Draw a flow chart of Penicillin production.
  - iv) Discuss the process of Latex collection.
  - i) Discuss an anaerobic process of Solid Waste Management.
- Q.5 A)** Write short notes on **ANY FOUR** of the following: (16)
- i) pH measurement and control
  - ii) Trickling filter
  - iii) Lactic acid fermentation.
  - iv) Rotary vacuum filter
  - v) Gluconic acid production.