

T. Y. B. SC. (BIOTECHNOLOGY) SEM – VI (2010 COURSE) :

WINTER - 2017

SUBJECT: INDUSTRIAL BIOTECHNOLOGY

Day : Tuesday
Date : 07/11/2017

W-2017-0962

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 are the various Carbon sources used in media formulation?
 - ii) What is secondary screening? Explain with an example.
- B)** Answer **ANY FIVE** of the following: (10)
- i) What are the different inorganic Nitrogen sources used in media formulation?
 - ii) What are growth factors? Mention their role in media.
 - iii) Mention the criteria for transfer of inoculum.
 - iv) What are shotgun and objective approaches?
 - v) What is fed batch fermentation?
 - vi) What is upstream and downstream processing?
- Q.2 A)** Write short notes on **ANY FOUR** of the following: (16)
- i) What are the different methods of microbial strain improvement?
 - ii) Discuss the various methods of preservation of industrially important microorganisms.
 - iii) What is inoculum development? Explain with reference to yeast.
 - iv) What is the role of inducers and precursors in media?
 - v) Explain solid state fermentation of Amylase.

SECTION –II

- Q.3 A)** Answer **ANY ONE** of the following: (06)
- i) Draw a well labelled diagram of a typical fermenter. Explain the functions of its various parts.
 - ii) Discuss the industrial fermentation of ethanol.
- B)** Answer **ANY FIVE** of the following: (10)
- i) How is glucose monitored during fermentation?
 - ii) What is reverse osmosis? Mention its applications.
 - iii) Name the organism used in Gluconic acid fermentation.
 - iv) What are the various applications of papain?
 - v) Mention various methods of Solid Waste Management.
 - vi) What is pilot fermenter? Mention its significance.
- Q.4** Answer **ANY FOUR** of the following: (16)
- i) Explain foam monitoring and its control using antifoam probe
 - ii) What are the different methods of enzyme immobilization?
 - iii) Discuss industrial fermentation of Penicillin.
 - iv) Draw a flow chart of streptomycin production.
 - v) What are the different types of sensors used for process monitoring?
- Q.5 A)** Write short notes on **ANY FOUR** of the following: (16)
- i) Basket centrifuge
 - ii) Activated sludge
 - iii) Insulin production
 - iv) Lactic acid fermentation.
 - V) Plate and frame filter.

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