Day: **Monday**
Date: **09/04/2018**

S-2018-1063

Time: **10.00 am to 01.00 pm**
Max. Marks: 60

N.B.:
1) Q1 and Q5 are compulsory.
2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
4) Answers to Both the sections to be written in SEPARATE answer books.
5) Draw a labeled diagram WHEREVER necessary.

SECTION - 01

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)
   a) What do mean by upstream and downstream processing?
   b) How the culture preservation is carried out by using liquid Nitrogen?
   c) What is submerged and surface fermentation?
   d) What is Protoplast fusion technique?
   e) Enlist various parts of fermenter
   f) What are baffles? Mention its role.

Q.2) Answer the following: (5 Marks X 2 = 10)
   a) Explain strain improvement technique by isolation of auxotrophic mutants.
   b) How isolation of industrially important microorganisms with desired characteristics is carried out?

Q.3) Explain the following: (5 Marks X 2 = 10)
   a) Continuous fermentation
   b) Explain measurement and control of pH and temperature during fermentation

Q.4) Write short notes on the following: (5 Marks X 2 = 10)
   a) Role of Chelators and Minerals
   b) Sparger

SECTION - 02

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)
   a) What are antifoam probes?
   b) What is the role of impeller in fermenter?
   c) How cell disruption is carried out by detergents?
   d) Mention the significance of Gel permeation chromatography in product recovery
   e) What do you mean by downstream processing?
   f) What do you mean by QA, QC?

Q.6) Answer the following: (5 Marks X 2 = 10)
   a) What is solid state fermentation? Mention its significance.
   b) Explain solvent recovery by distillation

Q.7) Explain the following: (5 Marks X 2 = 10)
   a) Explain Fluidized bed reactor and its applications
   b) Write SOP for Good documentation.

Q.8) Write short notes on the following: (5 Marks X 2 = 10)
   a) Liquid-liquid extraction
   b) Batch filters

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