

Seat No. : _____

MP-130

March-2019

B.Sc., Sem.-VI

CC-310 : Microbiology (Fermentation Technology)

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :**
- (1) Draw figures wherever necessary.
 - (2) Mention correct question number against each answer.
 - (3) Figures to the right indicate marks.

1. (A) Discuss principle and methods for preservation of industrially important organisms. 14

OR

- (i) Importance of modification of cell permeability for strain improvement. 7
- (ii) Use of selection of induced mutants method for strain improvement. 7
- (B) Give short and specific answers in 1-2 lines only : (any three) 3
 - (i) What do you mean by auxotrophy ?
 - (ii) Which mutants are isolated by gradient plate method ?
 - (iii) Who discovered Replica plate technique ? Give its application.
 - (iv) What is the difference between complete and minimal medium ?
 - (v) Enlist advantages of Cryopreservation method.

2. (A) Discuss centrifugation as a method for removal of microbial cells and suspended solids. 14

OR

- (i) Explain chemical method for cell disruption. 7
- (ii) Discuss batch filter method for product recovery. 7
- (B) Give short and specific answers in 1-2 lines only : (any three) 3
 - (i) Name industrially useful filters.
 - (ii) Define Liquid-Liquid extraction method used in product recovery.
 - (iii) What is HPLC ? Write its industrial importance.
 - (iv) Give any one example of fermentation process where drying method is used for product recovery.
 - (v) What is crystallization ?

3. (A) Discuss in detail Sterility testing and Pyrogen testing method for quality assurance of Products. 14

OR

- (i) Give overview of effluent treatment. 7
- (ii) Discuss scale-up process of fermentation industry. 7
- (B) Give short and specific answers in **1-2** lines only : (any **four**) 4
- (i) What do you mean by the word environment safety ?
- (ii) Give two names of coagulating agents.
- (iii) Define Bioassay.
- (iv) Full forms of GMP & SOP.
- (v) Name the test used for detection of pyrogen.
- (vi) Give two names of coagulating agents.

4. (A) Discuss in detail Citric Acid fermentation with flowchart. 14

OR

- (i) Mechanism of L-Lysine Biosynthesis and formulation of media used for the same. 7
- (ii) Describe in detail the recovery methods for fermentation of Penicillin. 7
- (B) Give short and specific answers in **1-2** lines only : (any **four**) 4
- (i) Draw chemical structure of 6APA.
- (ii) Name two microorganisms used for industrial production of Ethanol.
- (iii) What is LAL test
- (iv) Give applications of Citric Acid.
- (v) Name precursors used for vitamin B12 production.
- (vi) Give use of Rotary Drum Filter.
-