

Seat No. : _____

AE-109

April -2018

B.Sc., Sem.-VI

**CC-310 : Microbiology
(Fermentation Technology)**

Time : 3 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. Answer the following : (any **two**) **14**
- (A) What is strain improvement ? Briefly discuss the strategies for it.
- (B) Describe parasexual cycle as method of developing recombinants.
- (C) Discuss strain improvement for any two properties other than product yield.
- (D) Discuss principle and methods for preservation of industrially important organisms.
2. Describe the following : (any **two**) **14**
- (A) Write about the problems and designing of Down stream processing.
- (B) Discuss batch filter method for product recovery.
- (C) Explain physicochemical method for cell disruption.
- (D) Describe principle, working and applications of adsorption chromatography.
3. Explain the following : (any **two**) **14**
- (A) Explain sterility testing and its importance in quality assurance.
- (B) Give overview of clean room environment.
- (C) Describe bioassay and its importance.
- (D) Discuss scale-up process of fermentation industry.

4. Answer the following : (any **two**) **14**
- (A) Strain improvement, Media and Recovery with reference to penicillin fermentation.
 - (B) Describe fermentative production of L-lysine.
 - (C) Mechanism of Citric acid Biosynthesis and formulation of media used for the same.
 - (D) Describe fermentative production of Ethanol.
5. Give short and specific answers in **1-2** lines only. **14**
- (1) Who discovered gradient plate technique ? Give its application.
 - (2) What is the difference between complete and minimal medium ?
 - (3) Name industrially useful filters.
 - (4) Name two recombinant products with their applications.
 - (5) What is HPLC ? Write its industrial importance.
 - (6) What is contaminant ?
 - (7) Give two names of coagulating agents.
 - (8) Name the test used for detection of pyrogen.
 - (9) Full forms of GMP & SOP
 - (10) Chemical structure of 6APA.
 - (11) Name two bacteria used for industrial production of citric acid.
 - (12) Name precursors used for vitamin B12 production.
 - (13) What are protoplasts ? Give their importance.
 - (14) Name two precipitants used for product recovery.
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