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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