

B.Sc. Sem.-5 Examination

CC-304

Microbiology (Old & New)

March-2025

Time : 2-30 Hours]

[Max. Marks : 70

- Instructions:**
1. All questions are compulsory.
 2. Figures on the right indicate marks.
 3. Mention correct question number against the answer.
 4. Draw figures wherever necessary.

Q.1 Describe major component parts of fermentation process. (14)

OR

Q.1 (A) Write a note on microbial metabolites and recombinant products as fermentation products. (07)

(B) Briefly discuss microbial biomass and enzymes as a separate category of fermentation processes. (07)

Q.2 What is strain improvement? Discuss the role of genetic recombination for strain improvement. (14)

OR

Q.2 (A) What is microbial preservation? Discuss the preservation method of industrially important microbes by use of dehydration. (07)

(B) Write down the characteristics of an industrially ideal organism. (07)

Q.3 Give details of Carbon sources, Nitrogen sources, Minerals and Growth factors used as fermentation media ingredient. (14)

OR

Q.3 (A) Explain the batch method for fermentation media sterilization. (07)

(B) Explain the development of yeast and fungal inoculum for fermentation processes. (07)

Q.4 What is Bioreactor? Narrate the neat figure of bioreactor and write for the essential features of a bioreactor. (14)

OR

Q.4 (A) Describe the design and working of airlift bioreactor. (07)

(B) Discuss the role of monitoring for Dissolved oxygen, foam and temperature in a fermenter. (07)

Q.5 Give short and specific answers in 1-2 lines only (any seven). (14)

- 1 Define the term fermentation.
- 2 Give two examples of primary metabolites.
- 3 What is Del factor?

- 4 Give name of two methods used for strain improvement.
 - 5 Define: Secondary screening.
 - 6 What is the function of agitator in a bioreactor?
 - 7 Define: Mutation.
 - 8 Name two methods of continuous sterilization process.
 - 9 Give any two reasons of using filter aids.
 - 10 Name two foaming agents used as media ingredients.
 - 11 Give two examples of filters used for media sterilization.
 - 12 Mention the two advantages of a biocatalyst reactor.
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