0411E1031

Candidate's Seat No : _____

B.Sc. Sem.-5 Examination

CC - 304

Microbiology (N & O)

Time : 2-30 Hours] November-2025 [Max. Marks : 70

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

Q.1 Discuss the date- wise developments in industrial microbiology. (14)

OR

Q.1 (A) Explain as to how an established fermentation process can be divided into six component parts. (07)

(B) Describe biomass and microbial metabolites as fermentation products. (07)

Q.2 Explain in details the over production of amino acids. (14)

OR

Q.2 (A) Describe the use of recombination for strain improvement. (07)

(B) Describe the methods for preservation of microbial cultures. (07)

Q.3 Enlist and explain in details different carbon sources used in the formulation of fermentation media. (14)

OR

Q.3 (A) Discuss the methods of continuous sterilization process. (07)

(B) Describe the development of seed culture for bacterial processes. (07)

Q.4 Discuss in details the role and types of agitator, impellers, baffles and spargers in the design of a fermenter. (14)

OR

Q.4 (A) Explain the monitoring of pH, temperature and oxygen in a fermenter. (07)

(B) Describe the designing and working of tower fermenter. (07)

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

1 Define fermentation.
2 Name two microbial hosts used in production of recombinant products.
3 Name two products produced by microbial transformation process.
4 Define secondary screening.
5 What is protoplast?
6 Name two properties other than yield which can be used to improve the strain.
7 Give two examples of precursors used in media formulation.
8 Name the organism used as index of sterilization.
9 Name two morphological forms of fungi.
10 Which material is used for construction of stirred tank bioreactor?
11 Give two examples of antifoam agents.
12 What are biocatalytic reactors?

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