

Roll No.

Total No. of Pages : 02

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B.Tech. (Bio Technology) (Sem.-6)
FUNDAMENTALS OF BIOCHEMICAL ENGINEERING

Subject Code : BTBT-601-18

M.Code : 79667

Date of Examination : 07-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) What is the thermal death point?
- b) What is the difference between a batch and fed-batch fermentation?
- c) What is the significance of baffles in bioreactors?
- d) What is the scale-down process?
- e) How does the growth rate vary in batch fermentation?
- f) What is feedback inhibition?
- g) What types of filters are used for air sterilization?
- h) What is submerged fermentation? Cite an example of a fermenter that allows submerged fermentation.
- i) Which parameter is used to determine the oxygen uptake in aerobic fermenters?
- j) Explain the yield coefficient.

SECTION-B

2. Explain the difference between the sterilization process of continuous and batch fermentation.
3. Discuss the two-film theory of mass transfer.
4. Discuss the relation between dilution rate and substrate concentration in the continuous system.
5. Describe different principles for scale-up procedures. What are the limitations?
6. What are depth filters? Give its significance.

SECTION-C

7. Write a short note on mass balance in microbial growth systems.
8. Discuss the different online and offline analytical methods used in Fermenter.
9. What is K_{La} value? How is it determined and what factors affect the K_{La} values.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.