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Total No. of Pages: 02

Total No. of Questions: 11

M.sc. (BT) (Sem. – 2)
BIOPROCESS ENGINEERING
Subject Code: MBT-205
M Code: 76249
Date of Examination : 19-12-2022

Time: 3 Hrs.

Max. Marks: 70

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SEVEN** questions carrying **SIX** marks each and students have to attempt any **FIVE** 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 are LAB bacteriocins?
- b) Define biotransformation.
- c) Define critical dilution rate in a chemostat.
- d) What is subculturing? Describe its significance.
- e) What is the role of computers in bioprocess monitoring and control?
- f) What are the different substrates used for solid state fermentation?
- g) What are microbial flavours? Which flavours are produced by microbes?
- h) What are rotary vacuum filters?
- i) What is ultrasonication? Describe its principle.
- j) How is air sterilized in a bioreactor?

SECTION-B

2. Describe aeration-agitation systems in a bioreactor.
3. Write a note on preservation and maintenance of microbial cultures.
4. What are the substrates used for industrial fermentation?
5. Describe the economics of a fermentation process.
6. Give an outline on downstream processing operations in a bioprocess.
7. What are distilled alcoholic beverages? Describe the fermentative production of any alcoholic beverage.
8. What is the basic design of an effluent treatment plant? How is industrial effluent treated?

SECTION-C

9. Give an account on types of bioreactors for submerged fermentation.
10. Describe the role of microbes in food processing and preservation.
11. What is del factor? Write a note on continuous sterilization of media.

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