REV-01
MMB/02/06

2025/11

SET A

M.Sc. MICROBIOLOGY
THIRD SEMESTER
FOOD MICROBIOLOGY AND FERMENTATION TECHNOLOGY
MMB-304

[USE OMR FOR OBJECTIVE PART]

Duration: 1.30 hrs. **Full Marks: 35**

Objective **Marks: 10**

Time: 15 min. *1X10=10*

Choose the correct answer from the following:

1. The temperature requirement for a bioreactor is
   a. 150-180°C b. 25-30°C
   c. 0-5°C d. 100°C

2. Hydrol molasses are obtained from
   a. Sugarcane b. Corn
   c. Sugarbeet d. Milk

3. In batch fermentation active growth of microorganisms occur during
   a. Log phase b. Lag phase
   c. Stationary phase d. Death phase

4. Aspect ratio of continuous stirred tank bioreactors are between
   a. 10-12 b. 3-5
   c. 1 d. None of the above

5. In which type of bioreactors cyanobacteria are normally used
   a. Tower bioreactor b. Fluidized bed
   c. Photobioreactors d. Packed bed bioreactors

6. Which of this is not use as the mode of sterilization in fermenter
   a. Heating b. Radiation
   c. Centrifugation d. Filtration

7. All the following technique are household preservation technique except
   a. Smoking b. Lyophilization
   c. Dehydration d. Salting

8. Which is not an advantage of the fermented food?
   a. Makes the food more digestible b. Increase storage life
   c. Synthesize vitamins d. Decrease intestinal microflora

9. Yeast is used in the production of
   a. ethyl alcohol b. acetic acid

c. cheese
d. curd

10. As the fermentation for the ethanol production is over, the cells are separated to get the biomass of yeast cells that is used
a. for next fermentation
b. as single cell protein for animal feed
c. as manure
d. all of the above

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Descriptive

Time : 1 hrs. 15 min. Marks : 25

[Answer question no.1 & any two (2) from the rest]

1. Describe a conventional bioreactor with a neat labeled diagram 5

2. Explain the phases of growth observed in batch fermentation with neat diagrams 10

3. Write a note on media (substrates) used for industrial fermentation 10

4. Write in detail any two downstream process in detail 10

5. Write Short notes on 5+5=10
   (i)IPR and (ii) Supercritical fluid extraction

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