

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BFMS-431

M.Sc. (Final) Examination, 2023

MICROBIOLOGY

Paper - V

(Industrial and Food Microbiology)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. (i) The height to diameter ratio of an Airlift fermenter is in the range of
- (ii) The wineries in Europe were facing the problem of bitter taste in wines that was due to the contamination of organism.

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- (iii) What is the use of Tyndallisation in Food industries ?
- (iv) Which of the following can be used for providing sterile air to the fermenter ?
 - (a) Glass wool
 - (b) Air filter
 - (c) Flame
 - (d) All of these
- (v) What is the use of baffles in a fermenter ?
- (vi) Define partition coefficient for a solute.
- (vii) Give *two* examples of yeast which can be used as fodder.
- (viii) Give *two* examples of microbes which are used for the production of Lysine.
- (ix) What are biochips ? Mention one industrial application of the same.
- (x) Name *two* physical methods used for the sterilization of food products.

Section–B

2. Write a note biohazard associated with bio-aerosols.

Or

What are Biosensors ? Draw a labelled diagram of the same.

3. What do you understand by a mother culture ? Also write a method used for its preparation.

Or

Write a note on use of buffering agents in a fermentation medium, citing suitable examples.

4. What are the causes of foaming in a fermentation medium ? Write any measure used to control the foaming.

Or

Write a note on cell disruption by ultrasonication.

5. Write a note on microbial production of glutamate.

Or

Write a note on microbial production of Vitamin-B1.

6. Give a brief account on the fermentative production of interferon.

Or

Write a note on production of microbial biogums.

Section-C

7. Write notes on the following :

(i) Application of micro-carrier reactor in industrial microbiology

(ii) Application of immobilized cells in food industry

8. Give a comprehensive account on evaluation of nutritional and physical parameters for media optimization.

9. Write notes on the following :

(i) Growth kinetics of continuous fermentation

(ii) Affinity chromatography

10. Write notes on the following :

(i) Production of whisky

(ii) Production of penicillin

11. Give an illustrative account on different parameters which affect microbial growth in foods.