

Roll No. : .....

Total No. of Questions : 16 ]

[ Total No. of Printed Pages : 3

# SEM2020

M.Sc. (IInd Semester) Examination, 2021

## MICROBIOLOGY

Paper - MB-204

(Industrial and Food Microbiology)

Time : 1½ Hours ]

[ Maximum Marks : 40

**Note** :- The question paper contains three Sections.

### Section-A

(Marks : 1 × 10 = 10)

**Note** :- Answer all the *ten* questions carries 1 mark each. The answer should not exceed 50 words.

### Section-B

(Marks : 3 × 5 = 15)

**Note** :- Answer *five* questions by selecting at least *one* question from each Unit. Each question carries 3 marks. Answers should not exceed 200 words.

### Section-C

(Marks : 5 × 3 = 15)

**Note** :- Answer *three* questions by selecting *one* question from each Unit. Each question carries 5 marks. The answer should not exceed 500 words.

### Section-A

1. Short answer type questions :

- (i) Define Biosensor.
- (ii) Write any *two* example of Bioinsecticide.

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- (iii) Full form of HACCP and ISI.
- (iv) Define Recombinant Vaccine.
- (v) What is Aflatoxin Poisoning ?
- (vi) Write about Centrifugation.
- (vii) Write role of Surfactant.
- (viii) Define Sterilization.
- (ix) Name the types of Bioreactor.
- (x) Symptoms of Salmonellosis.

### **Section-B**

#### **Unit-I**

- 2. Write a short note on Immobilization of Cells.
- 3. Write a note on various component of Bioreactor.
- 4. What is Fermentation ? Write a brief note on various types of Bioreactors used in Fermentation Process.

#### **Unit-II**

- 5. Give a brief note on isolation, selection and screening of industrially important microorganism.
- 6. Write importance of growth kinetics of microorganism in fermentation process.
- 7. Explain the role of chelation in formulation of fermentation media.

#### **Unit-III**

- 8. Write raw materials for the following industrial production :
  - (i) Riboflavin
  - (ii) Tissue Plasminogen activator
  - (iii) PHB
- 9. Write about single cell protein.
- 10. Write about the production of bioinsecticides.

## **Section–C**

### **Unit–I**

11. Write detailed note on Photo and stirred bioreactors.
12. Write a detailed note on biosensors.

### **Unit–II**

13. Describe various types of extraction methods.
14. Write short notes on the following :
  - (i) Steroid transformation
  - (ii) Enzyme production

### **Unit–III**

15. Write industrial production process for Sauerkraut.
16. Write short notes on the following :
  - (i) Microbial food spoilage
  - (ii) Quality control of antibiotics