

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

SEMM-220

M.Sc. (IInd Semester) Examination, 2022

MICROBIOLOGY

Paper - FS-MIC-CC-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 (Answer limit **50** words). Each question carries **1** mark.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer any *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. Attempt all questions :

(i) What is Bioreactor ?

(ii) What are the *three* types of immobilization ?

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(1)

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- (iii) Where are impeller used ?
- (iv) Write name of any *two* antifoam agents.
- (v) What are the *four* phases of growth ?
- (vi) What is Chelator ?
- (vii) Write principle of chromatography.
- (viii) Expand PHB and PHA.
- (ix) What disease is caused by staphylococcal ?
- (x) What is HACCP ?

Section-B

Unit-I

- 2. What are the types of bioreactor ?
- 3. What are the industrial application of immobilization ?
- 4. What are biohazard and containment ?

Unit-II

- 5. What do you mean by preservation of micro-organisms ?
- 6. What are the basic component of fermentation media ?
- 7. What is downstream process in fermentation ?

Unit-III

- 8. How bioinsecticides are produced ?
- 9. What parameters are affecting microbial growth in foods ?
- 10. What are the adverse health effects of mycotoxins ?

Section–C

Unit–I

11. Write a detail note on bioreactor design and component.
12. Describe the brief history of fermentation process.

Unit–II

13. Describe the various methods of sterilization.
14. Write a note on types of fermentation processes.

Unit–III

15. Write a detailed note on microbiological quality standard of food.
16. Write a detailed note on production of non-microbial product through genetically engineered microorganisms.