

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

EMIC-326

M.Sc. (IIIrd Semester) Examination, Jan.-2023

MICROBIOLOGY

Paper - FS-MIC-CC-302

(Soil and Agricultural Microbiology)

Time : 3 Hours]

[Maximum Marks : 40

The question paper contains three Sections.

Section-A (Marks : 1 × 10 = 10)

Note :- Answer all *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. (i) Which bacteria is used for bioleaching process ?
- (ii) Write the difference between hay and silage.

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- (iii) What is Soil Profile ?
- (iv) What causes witches broom disease in Potato ?
- (v) Write the names of *two* diseases caused by bacteria in plants.
- (vi) What are the diseases of bajra caused by fungi ?
- (vii) What is Biofertilizer ?
- (viii) Write the function of nif gene.
- (ix) Write any *four* examples of nitrogen fixing bacteria.
- (x) What is biocidal compound ?

Section-B

Unit-I

- 2. What is carbon cycle concept ? Explain.
- 3. Write brief note on process of biomining.
- 4. Write note on agricultural and urban waste compost.

Unit-II

- 5. What are the ways of preventing and controlling plant diseases ?
- 6. Describe transmission, causes, epidemiology and management of papaya leaf curl.
- 7. Write brief note on mycoplasma causing plant diseases.

Unit-III

- 8. What are advantages and disadvantages of microbial insecticides ?
- 9. Write note on mode of action of biocidal components and their effects on target organism.
- 10. Write note on production of biofertilizer and their storage methods.

Section–C

Unit–I

11. Write note on distribution and contribution of soil microflora to ecosystem.
12. Describe the iron cycle and its interaction with other elemental cycles.

Unit–II

13. Write note on causing factor, transmission, epidemiology and treatment of stripe disease of sugarcane.
14. Write note on yellow vein mosaic of Bhindi.

Unit–III

15. Describe the role of non-symbiotic microbes in nitrogen fixation.
16. Discuss the limitations of microbial insecticides in fermentation, mass production and formulations.