Seat No. : _____

DE-117

December-2022

B.Sc., Sem.-III

CC-202 : Microbiology

(Soil and Water Microbiology)

Time : 2½ Hours] **[Max. Marks : 70**

Instructions : (1) **All** questions are compulsory.
(2) Figures on the right indicates marks.
(3) Mention correct question number against the answer.
(4) Draw figures wherever necessary.

1. (a) Describe microbial interactions in soil with suitable examples. **14**

OR

(A) Enlist methods to study soil microflora and describe buried slide method. 7

(B) Write a note on Mycorrhiza. 7

2. Discuss and draw Nitrogen cycle. **14**

OR

(A) Briefly explain mineralization, immobilization and solubilization of phosphorus in soil. 7

(B) Write a note on Bio-fertilizers. 7

3. What are coliform bacteria ? Discuss IMViC test as method of coliform differentiation. **14**

OR

(A) Describe presumptive, confirmed and completed test. 7

(B) Describe purification of drinking water with suitable flow diagram. 7

P.T.O.

4. Describe biological treatment of waste water in detail. **14**

OR

(A) Write briefly on pollution problems caused due to disposal of untreated waste water. **7**

(B) Explain Solid waste processing : Composting process. **7**

5. Give short and specific answers in 1-2 lines only (any **seven**). **14**

(1) What is Humus ?

(2) Enlist any two functions of soil microflora.

(3) Differentiate the term : Phyllosphere and Rhizosphere.

(4) Give two names of sulfate-reducing bacteria.

(5) Which enzymes are involved in cellulose degradation ?

(6) Define Mineralization and Assimilation.

(7) Write the full form of MPN, EPA.

(8) Name two water borne diseases caused by protozoa.

(9) Give two examples of nuisance microorganisms.

(10) What is BOD and COD ?

(11) Enlist types of waste water.

(12) What is post aeration ?