

Seat No. : \_\_\_\_\_

# ME-115

March-2019

B.Sc., Sem.-III

## CC-202 : Microbiology (Soil and Water Microbiology)

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :** (1) Draw the diagram necessary wherever.  
(2) Marks are indicated to right side of each question.

1. (A) Explain the Neutral, Positive and Negative association takes place during microbial interactions in soil. **14**

**OR**

- (i) Discuss the enrichment culture technique to study the soil microflora. **7**  
(ii) Describe the physico-chemical characteristics of soil. **7**  
(B) Answer any **four** in one or two line : **4**  
(1) Define Mycorrhiza.  
(2) What is rhizospheric effect ?  
(3) What are Epiphytes ?  
(4) Define Lichens.  
(5) Enlist plate techniques used for the study of soil flora.  
(6) What is soil respiration ?

2. (A) Draw the nitrogen cycle and explain microbial process that fix Nitrogen to soil. **14**

**OR**

- (i) Draw and explain the Winogradsky column. **7**  
(ii) Describe the Carbon cycle in terms of Carbon dioxide fixation. **7**  
(B) Answer any **four** in one or two line : **4**  
(1) What is infection thread ?  
(2) Define proteolysis.  
(3) What are Biofertilizers ?  
(4) Define eutrophication.  
(5) Name the bacteria responsible for the oxidation of iron.  
(6) Define the term Mineralization.

3. (A) Describe the Qualitative analysis for the bacteriological analysis of drinking water. 14

**OR**

- (i) Write a short note on “IMViC test”. 7
- (ii) Discuss the Nuisance organisms in water. 7

(B) Answer any **three** in one or two line : 3

- (1) Define Disinfection.
- (2) What is TVC ?
- (3) Enlist any two water borne disease.
- (4) What are indicator organisms ?
- (5) Define sedimentation.

4. (A) Explain the primary and secondary treatment methods of waste water treatment. 14

**OR**

- (i) Discuss Chemical and Microbiological characteristics of waste water. 7
- (ii) Describe the anaerobic sludge digestion process. 7

(B) Answer any **three** in one or two line : 3

- (1) Define BOD.
  - (2) What is composting ?
  - (3) Define floccules.
  - (4) What are lagoons ?
  - (5) Define COD.
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