

Seat No. : _____

AK-118

April-2025

B.Sc., Sem.-IV

DSC-C-MIC-241T : Microbiology (Major) (Soil and Water Microbiology)

Time : 2:00 Hours]

[Max. Marks : 50

- 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. Describe various types of negative interactions among soil microflora. **10**

OR

1. (A) Write a short note on mycorrhiza. **5**
(B) Briefly explain the enrichment culture technique used to study soil microbes. **5**

2. Describe the role of various microorganisms involved in biogeochemical cycling of Nitrogen element. **10**

OR

2. (A) Write a short note on biofertilizers. **5**
(B) Describe the role of microorganisms involved in biogeochemical cycling of Iron element. **5**

3. Explain the process for purification of drinking water. **10**

OR

3. (A) Why Iron bacteria are regarded as nuisance organisms in drinking water supplies ? **5**
(B) Describe the significance of Presence-Absence test for detection of coliforms in drinking water. **5**

4. Explain any two methods used for solids processing in municipal waste water treatment plant. **10**

OR

4. (A) Write a note on significance of COD. **5**
(B) Describe activated sludge process. **5**

5. Give short and specific answers in **1-2** lines only : (Any **TEN**)

10

- (1) Define : rhizosphere.
 - (2) What is commensalism ?
 - (3) What is neutralism ?
 - (4) What is mineralization ?
 - (5) Name any two non-sulfur photosynthetic bacteria.
 - (6) Name any two phosphate-solubilizing microbes.
 - (7) What is IMViC test ?
 - (8) Name any two water borne diseases caused by viruses.
 - (9) What is confirmed test ?
 - (10) Enlist the types of waste water.
 - (11) Define : BOD
 - (12) Write full form of SPC.
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