

Seat No. : _____

DF-104

December-2021

B.Sc., Sem.-III

CC-202 : Microbiology (Soil & Water Microbiology)

Time : 2 Hours]

[Max. Marks : 50

- Instruction :**
- (1) All Question in Section – I carries equal marks.
 - (2) Attempt any **three (3)** questions out of **eight (8)** in Section – I.
 - (3) Question – **9** in Section – II is Compulsory.

Section – I

1. (A) Describe Positive & negative associations amongst microorganisms in soil. 7
(B) Write a note on Rhizosphere & its significance. 7
2. (A) Describe different methods of studying soil micro flora. 7
(B) Write a note on Mycorrhiza. 7
3. (A) Describe Carbon cycle. 7
(B) Write a note on use of Biofertilizers in increasing soil fertility. 7
4. (A) Explain Nitrogen fixation & denitrification. 7
(B) Write a note on Sulphur Cycle. 7
5. (A) What is quantitative analysis of water? Discuss total viable count as enumeration method. 7
(B) Discuss differentiation tests for Coliforms. 7
6. (A) Write a note on Nuisance microorganisms in water. 7
(B) Discuss water borne diseases. 7
7. (A) Discuss chemical and microbiological characteristics of domestic-waste. 7
(B) Describe Trickling Filters. 7
8. (A) Describe activated sludge process as a treatment for waste water. 7
(B) Draw the cross section diagram of Imhoff tank. Explain how it works. 7

Section – II

9. Give short and specific answers in 1-2 lines only : (any **eight**)

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- (1) Write examples of symbiotic Nitrogen fixing bacteria.
 - (2) What is Syntrophism ?
 - (3) Give one example of lignin degrading fungi.
 - (4) What is humus ?
 - (5) Full form of BOD, TOD & COD.
 - (6) Give examples of bacteria involved in trickling filter.
 - (7) What is Synergism ?
 - (8) Name the media which can be used for the detection of coliforms.
 - (9) What is P-A test ?
 - (10) What type of Microorganisms can create bulking sludge during activated sludge treatment ?
 - (11) Write full form of VAM.
 - (12) How many glucose molecules are there in cellobiose ?
 - (13) What is oxidation Pond ?
 - (14) Write full form of IMViC test.
 - (15) Give one difference between sludge and sewage.
 - (16) Write examples of Coliform bacteria.
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