



HF-033017

Seat No. _____

B. Sc. (Sem. III) (CBCS) Examination

October - 2019

BSCS - 305 (B) : Microbiology

(Environmental Microbiology)

Time : 3 Hours]

[Total Marks : 70

- Instructions :**
- (1) All questions carry equal marks.
 - (2) Marks are indicated on right side of the question.
 - (3) Draw a neat and labeled diagram where ever required.
 - (4) Write the question numbers clearly.

- 1 Write on any **two** of the following : 14
- (a) Describe how human activities can be a source of microbes in air
 - (b) What are the samplers of air used by metro department for forecasting'
 - (c) Describe the physical methods of controlling of air microflora.
 - (d) What are the types of diseases caused by 'droplet nuclei'. Describe in brief.

- 2 Write on : 14
- (a) Physicochemical characteristics of soil
 - (b) Iron cycle

OR

- (a) Use of Winogradsky column in studying microbial diversity in soil.
- (b) Humus and its significance

- 3 Write on any **two** of the following : 14
- (a) Freshwater Environments
 - (b) Coliforms as indicator of water pollution
 - (c) Nuisance organisms in water
 - (d) Methods of Sampling of water

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4 Write on any two of the following : 14

- (a) BOD, COD and TOD as indicators of strength of wastewater
- (b) Primary Treatment of waste water
- (c) Anaerobic digesters
- (d) Vermiculture

5 Objective questions : 14

- (1) In which layer of atmosphere we find maximum number of microbes?
- (2) Why do microbes not grow in air?
- (3) Why is it difficult to study the quality of air of particular volume?
- (4) Which wavelength of UV light is most lethal?
- (5) Which air borne disease is caused by air coolers?
- (6) Why is soil considered as a culture medium ?
- (7) What is the disadvantage of direct microscopic method to study soil flora?
- (8) What is neutral interaction of microbes in soil?
- (9) Why is Phosphorus cycle important?
- (10) Where do we find 'Cold Seeps'?
- (11) Give the importance of IMViC test.
- (12) What are the microbial indicators of water pollution? *IMViC*
- (13) Give example of sulfur bacteria. *Thiobacillus*
- (14) What is P-A (Presence-Absence) test?