

(6 Pages)

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M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

Microbiology — Core

ENVIRONMENTAL AND AGRICULTURAL
MICROBIOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answers :

1. Finely divided, partially decomposed organic matter found in soil is called
 - (a) humus
 - (b) horizon
 - (c) ped
 - (d) oxides

2. Which one is sedimentary cycle?
(a) oxygen cycle (b) hydrogen cycle
(c) nitrogen cycle (d) phosphorous cycle
3. Droplet nuclei are small particles _____ in diameter.
(a) 1 to 6 μ m (b) 1 to 5 μ m
(c) 1 to 8 μ m (d) 1 to 4 μ m
4. In impingement into liquids _____ is an oldest device.
(a) Lemon sampler (b) Hollander sampler
(c) Beed bubbler device (d) Slit sampler
5. Which is the simplest aquatic ecosystem?
(a) pond (b) stream
(c) lake (d) marine
6. Which one is waterborne virus disease?
(a) adenovirus (b) polio virus
(c) hepatitis A and E (d) all of the above

7. Rhizosphere effect is a type of _____ interaction.
- (a) neutralism (b) commensalism
(c) synergism (d) mutualism
8. Azolla is widely used as a nitrogen fixer in
- (a) paddy fields (b) corn fields
(c) maize fields (d) all of the above
9. Late blight of potato is caused by
- (a) *Phytophthora erythroseptica*
(b) *Phytophthora infestans*
(c) *Phythyium aphenidermatum*
(d) None of the above
10. Which tropical fruit crop has been successfully engineered to be protected against a lethal virus?
- (a) passion fruit (b) papaya
(c) mango (d) lychee

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 250 words.

11. (a) Write a short notes on alluvial soils and black soils.

Or

- (b) Explain about phosphorous cycle.

12. (a) Write about droplet, droplet nuclei in brief.

Or

- (b) Give a detailed account on methods of air sampling.

13. (a) Write about mangrove habitats.

Or

- (b) Write the sources of water pollution.

14. (a) Explain the role of phospho bacteria as bio fertilizer.

Or

- (b) Explain VAM fungi.

15. (a) Give a note on apple scab.

Or

(b) Note on transgenic plants.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) List out the various media used for isolating soil microflora. Write down the methods of quantification of soil microflora.

Or

(b) Discuss in detail the carbon cycle in the environment.

17. (a) Write a detailed essay on solid and liquid impingement method.

Or

(b) Write in detail about the fungal and viral airborne diseases and its control measures.

18. (a) Explain in detail about the marine habitats.

Or

(b) Explain the potability of water in detail.

19. (a) Write in detail about the root nodule formation by Rhizobium in plants.

Or

- (b) Describe azotobacter as biofertilizer.

20. (a) Write the symptoms, etiology and control measures of bacterial leaf blight of paddy.

Or

- (b) Give an overview on bio control agents in detail.
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