

(6 pages)

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M.Sc. (CBSC) DEGREE EXAMINATION, APRIL 2018.

Third Semester

Microbiology

ENVIRONMENTAL AND AGRICULTURAL
MICROBIOLOGY

(For those who joined in July 2016 and afterwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. _____ is formed artificially by ploughing a dry clay land soil.
- (a) ped
 - (b) clod
 - (c) prismatic
 - (d) platy

2. The shortest generation time reported is 9.8 minutes for _____.
- (a) Vibrio cholera
 - (b) Pseudomonas natrieganus
 - (c) Salomonella typhi
 - (d) E.coli
3. _____ transport ranges from 10 minutes to 1 hour and from 100m to km.
- (a) Microscale
 - (b) Submicroscale
 - (c) Setting
 - (d) None
4. _____ is most commonly use device for microbial air sampling.
- (a) Membrane filter
 - (b) HEPA
 - (c) Anderson 6 state impaction sampler
 - (d) None
5. The deep ocean trenches are called as _____.
- (a) Littoral
 - (b) Sublitoral
 - (c) Neritic
 - (d) Hadal region

6. _____ are bacteria growing only at higher pressure 6000-11000m depth at a pressure of 600-1100 atm.

- (a) Extrema barophiles
- (b) Moderate barophiles
- (c) Barotolerant
- (d) Xerophils

7. _____ bacterial genera can solubills a phosphorus from the bound from.

- (a) Salmonella (b) Shigella
- (c) Cholera (d) Bacillus

8. _____ is a soil inhabitant and grows along the leguminous root

- (a) Azospirillum (b) Acetobacter
- (c) Rhizobium (d) Azotobacter

9. Apple scab is a disease of malws trees caused by _____

- (a) Aspergillus (b) Penicillium
- (c) Venturia inequalls (d) Rhizopus

10. _____ is successfully used as a biocontrol agent for diseases caused by Rhizoctonia Solabii.

- (a) Trichoderma harzianum
- (b) Serratia marcescens
- (c) Rhizopus stolonifer
- (d) Aspergillus niger

Answer ALL questions, choosing either (a) or (b), each answer should not exceed 250 words.

11. (a) Give an account of soil water.

Or

(b) Detail out the functions of soil microflora.

12. (a) Discuss modes of transmission of various airborne infections.

Or

(b) Write short notes on droplet nuclei.

13. (a) Brief out the characteristic features of a Lakes.

Or

(b) Discuss the phenomenon and significance of upwelling.

14. (a) Discuss about Azotobactor biofertilizer.

Or

(b) Write short notes on R/S ratio.

15. (a) What is biological control? Write a notes on principles of biological control.

Or

- (b) What are microbial insecticides? Write some of their characteristics.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b), each answer should not exceed 600 words.

16. (a) Describe sulphur cycle with an illustration.

Or

- (b) Describe in detail the various physical parameters involved in maintenance of soil as a habitat.

17. (a) Give an account of bacterial airborne diseases.

Or

- (b) Discuss deposition and adhesion as part of aeromicrobiology.

18. (a) Give an account of biota of estuaries.

Or

- (b) Describe in detail the biota of the marine environment giving their general characteristics.

19. (a) Write an essay on (Blue green algae) as Biofertilizer.

Or

- (b) Explain the role of phosphobacteria in soil.

20. (a) Discuss the symptoms, Etiology, lifecycle and management of stem rules of wheat.

Or

- (b) Write a detailed account on transgenic plants.