

Code No. : 7982

Sub. Code : PMBM 33

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

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 answer :

1. Which of the following fungi oxidizes sulfur
(a) Aspergillus (b) Penicillium
(c) Both (a) and (b) (d) None
2. Organic soil may contain bacteria upto _____
in significant number.
(a) 10 cm (b) 20 cm
(c) 160 cm (d) 40 cm

3. Removal of solids is generally considered as a
(a) primary treatment
(b) secondary treatment
(c) tertiary treatment
(d) none of these

4. The rate of flux of oxygen in air is _____
to/than the rate of flux of oxygen in water.
(a) greater
(b) lesser
(c) approximately equal
(d) half

5. Streptococcal pneumonia is an _____
infection.
(a) respiratory (b) gastrointestinal
(c) muscles (d) urogenital

6. Oxidation ponds for secondary waste water
treatment is designed to promote growth of
(a) algae (b) fungi
(c) plants (d) bacteria

7. Which of the following is not the biofertilizers producing bacteria.

- (a) nostoc
- (b) anabaena
- (c) both (a) and (b)
- (d) clostridium

8. The diagnostic enzyme for denitrification is

- (a) nitrate reductase
- (b) nitrate oxidase
- (c) nitro oxidoreductase
- (d) none of these

9. Leaf blight in rice is caused by

- (a) virus
- (b) bacteria
- (c) fungus
- (d) protozoa

10. Transgenic plants

- (a) contain foreign genes in their cells
- (b) are used to produce human antibodies
- (c) both (a) and (b)
- (d) are plants that differ in geographical location

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write the profile and structure of soil.

Or

(b) Give a short notes on quantification of soil microflora.

12. (a) Discuss about the assessment of air quality.

Or

(b) Write the preventive measures of fungal infections.

13. (a) Write a short notes on freshwater habitat.

Or

(b) Explain about Eutrophication.

14. (a) Explain the role of bacteria in agriculture.

Or

(b) Write the applications of VAM fungi.

15. (a) Describe the lifecycle of Apple Scab disease.

Or

(b) What are the uses of Bio-control agents of bacteria?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Give an detailed account on factors affecting microbial community in soil.

Or

(b) Explain the biogeochemical cycle of phosphorous.

17. (a) Write about the airborne diseases.

Or

(b) Write a notes on :

(i) Droplet nuclei

(ii) Aerosols.

18. (a) Write a note on marine habitats.

Or

(b) What are the causes, factors and preventive measures of water pollution?

19. (a) Give a detailed account on the characters and applications of Rhizobium.

Or

(b) Explain about Rhizosphere effect in leguminous plants.

20. (a) Write in detail about the symptoms, etiology, lifecycle and management of bacterial leaf blight of paddy.

Or

(b) Add notes on biocontrol agents of fungi and bacteria.