

(7 pages)

Reg. No. :

Code No. : 5686 Sub. Code : WMBSE 31

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2025.

Third Semester

Microbiology

Skill Enhancement Course — ORGANIC FARMING
AND BIOFERTILIZER TECHNOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answers.

1. What is organic farming?
 - (a) Farming that uses synthetic fertilizers and pesticides
 - (b) Farming that relies on natural inputs and ecological balance
 - (c) Farming that focuses on maximum chemical use
 - (d) Farming that only uses genetically modified crops

2. Which of the following is not used in organic farming?
 - (a) Compost
 - (b) Urea
 - (c) Biofertilizers
 - (d) Vermicompost
3. _____ type of farming depends on synthetic fertilizers for soil fertility?
 - (a) Organic farming
 - (b) Agroforestry
 - (c) Chemical farming
 - (d) Biodynamic farming
4. NPOF stands for
 - (a) National Program of Fertilizer
 - (b) National Programme for Organic Production
 - (c) New Production of Farms
 - (d) Natural Promotion of Food
5. What is the primary focus of the National Project on Management of Soil Health and Fertility (NPMSH&F)?
 - (a) To increase the use of synthetic fertilizers
 - (b) To reduce agricultural biodiversity
 - (c) To promote Integrated Nutrient Management
 - (d) To increase soil erosion

6. Which of the following is not a major component of IFS?

- (a) Crop-livestock integration
- (b) Agroforestry
- (c) Use of synthetic pesticides
- (d) Fish farming

7. Which of the following bacteria forms root nodules on actinorhizal plants?

- (a) Frankia (b) Rhizobium
- (c) Azotobacter (d) Pseudomonas

8. Azospirillum is _____ type of bacteria

- (a) Gram positive
- (b) Gram negative
- (c) Neither gram positive or negative
- (d) Virus

9. Which biofertilizer is best for improving soil organic matter decomposition?

- (a) Bacillus
- (b) Trichoderma
- (c) Rhizobium
- (d) Anabaena

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10. _____ cyanobacterium forms a symbiotic relationship with Azolla?

- (a) Nostoc
- (b) Hapalosiphon
- (c) Anabaena
- (d) Glomus

11. The primary role of Nostoc in soil?

- (a) Nitrogen fixation
- (b) Phosphate solubilization
- (c) Sulfur reduction
- (d) Plant growth promotion

12. Which of the following is not a phosphate-solubilizing microorganism?

- (a) Aspergillus (b) Pseudomonas
- (c) Frankia (d) Bacillus

13. _____ is used as a nitrogen source in microbial fermentation?

- (a) Glucose
- (b) Ammonium sulfate
- (c) Phosphoric acid
- (d) Sodium chloride

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14. FCO Fullform _____
(a) Fertilizer Control Order
(b) Fertilizer Certification Order
(c) Farm Crop Ordinance
(d) Field Crop Optimization
15. Which factor can significantly affect the shelf life of biofertilizers?
(a) Temperature
(b) Humidity
(c) Storage conditions
(d) All of the above

PART B — (5 × 4 = 20 marks)

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

Each answer should not exceed 250 words.

16. (a) Write about biofertilizer soil amendments.
Or
(b) Comments on green manure and its uses.
17. (a) Briefly explain integrated farming system.
Or
(b) Write short notes on organic certification.

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18. (a) List out advantages of Biofertilizers.
Or
(b) What are the characteristics features of Rhizobium.
19. (a) Briefly describe cyanobacterial biofertilizers anabaena.
Or
(b) Comments on AM mycorrhiza.
20. (a) Elucidate the role played by strain selection for biofertilizer Production.
Or
(b) Give notes on the quality control of biofertilizers.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

21. (a) Write an essay on integrated pest and weed management.
Or
(b) Describe in detail about organic and conventional farming.

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22. (a) Explain in detail about different categories of farmers.

Or

(b) Give an account on NPMSH&F and RKVY.

23. (a) Summarize the characteristics features of Azospirillum.

Or

(b) Give the general characteristic feature of bacterial biofertilizer pseudomonas.

24. (a) Describe in detailed about mechanism of phosphate Solubilization.

Or

(b) Write an essay on pottassium solubilization.

25. (a) Make detailed notes on mass production of carrier based biofertilizers.

Or

(b) What are the applications of technology for seeds and seedlings?