

B.Sc. (CBCS Pattern) Semester-III  
**USMBT06 - Microbiology Paper-II : Food, Soil, Microbiology and Microbial Ecology**

P. Pages : 2

Time : Three Hours



**GUG/S/25/11615**

Max. Marks : 50

- 
- Notes : 1. All questions are compulsory.  
2. Draw the diagram wherever it is necessary.

1. Describe different types of food spoilage with suitable examples. 10

**OR**

- a) Write biological methods of food preservation. 2.5
- b) Write SPC method for microbial examination of food sample. 2.5
- c) Describe salmonellosis as a food borne infection. 2.5
- d) Describe canning as a method of food preservation. 2.5

2. Explain aerobic and anaerobic methods of composting. 10

**OR**

- a) Discuss nature and characteristics of humus. 2.5
- b) Give diagrammatic representation of Sulphur cycle. 2.5
- c) Explain Autotrophic CO<sub>2</sub> fixation. 2.5
- d) Describe phosphorous cycle in brief. 2.5

3. Describe various positive microbial associations with examples. 10

**OR**

- a) Write short note on mycorrhizae. 2.5
- b) Write note on biofertilizers. 2.5
- c) Write note on nitrogenase enzyme. 2.5
- d) Add a note on nif gene. 2.5

4. Describe in detail biodegradation of pesticides. 10

**OR**

- |  |     |
|--|-----|
| a) Write a note on Bioremediation.                                     | 2.5 |
| b) What is microbial leaching? Explain in short bioleaching of copper. | 2.5 |
| c) Add a short note on microbial enhanced oil Recovery.                | 2.5 |
| d) Discuss in short desulfurization of coal.                           | 2.5 |

**5. Solve any ten.**

- |  |   |
|--|---|
| a) Define perishable foods. Give example.                            | 1 |
| b) What is HACCP?  | 1 |
| c) Define intoxication?  | 1 |
| d) What is denitrification?  | 1 |
| e) What is Assimilatory sulfate reduction?                           | 1 |
| f) Write applications of compost.                                    | 1 |
| g) What is commensalism?   | 1 |
| h) Write names of non-symbiotic N <sub>2</sub> fixing cyanobacteria. | 1 |
| i) Define Biopesticides with suitable example.                       | 1 |
| j) Define acid mine drainage?  | 1 |
| k) Give the name of bacteria involved in uranium bioleaching.        | 1 |
| l) Give the names of Biogas Microbes.                                | 1 |

\*\*\*\*\*