

Seat No. : _____

DE-101
December-2013
B.Sc. Sem.-V
MI-305 : Microbiology
(Agriculture Microbiology)

Time : 3 Hours]

[Max. Marks : 70

1. Answer the following questions : **14**

(a) Describe in brief the occurrence of microorganisms in soil. **7**

OR

Describe the role of microorganisms in formation of humus and explain its significance.

(b) Describe the conditions in soil which are responsible for establishment of microbial flora. **7**

OR

Explain the role of microorganisms in degradation of animals and plants in soil.

2. Answer the following questions : **14**

(a) Enlist the microbial interactions in soil and describe antagonism. **7**

OR

Describe the positive microbial interactions in soil.

(b) Describe the significance of microorganisms present in Rhizosphere. **7**

OR

Describe the occurrence of VAM fungi and AM fungi with their importance.

3. Answer the following questions : **14**

(a) Explain the significance of Nitrogen fixing bacteria. **7**

OR

Explain the term Biofertilizer and describe the importance of phosphate solubilizing bacteria.

(b) Explain the term 'Insect Pest'. Describe the merits and demerits of microbial-pesticide. **7**

OR

Describe the uses of insect pathogenic viruses and fungi as biocontrol agents.

4. Answer the following questions : 14
(a) Explain the modes of entry of microbial plant pathogens into the host plant. 7

OR

Explain the importance of disease resistant plant species with examples.

- (b) Describe general symptoms and control measures for microbial plant diseases. 7

OR

Describe in brief the transmission and control of microbial plant diseases.

5. Answer the following questions in **one** or **two** statements : 14

- (1) Give example of a bacterial pesticide.
 - (2) Name any viral disease of plant.
 - (3) Give examples of two symbiotic nitrogen fixing bacterial species.
 - (4) Name any nitrifying bacterial species.
 - (5) Name the organism that produces a plant hormone.
 - (6) Give example of a Cyanobacterium used as a biofertilizer.
 - (7) Give example of a phosphate solubilizing bacteria.
 - (8) Name the species of bacterium widely used in transgenic plant production.
 - (9) Give importance of VAM fungi.
 - (10) Name the insect pathogenic virus.
 - (11) Name any entomopathogenic fungi.
 - (12) Which disease is called by *Xanthomonas citri* ?
 - (13) Name any plant disease caused by fungi.
 - (14) Give example of an antibiotic producing bacterial species.
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