Seat No. : _____

NF-107

December-2015

B.Sc., Sem.-V

Elective-305 : Microbiology

Time : 3 Hours] **[Max. Marks : 70**

Instructions : (1) **All** questions carry equal marks.

(2) Diagrams at proper places will be appreciated.

1. Answer any **two** of the following questions : **14**

   (a) Describe in brief the microorganisms associated with soil.

   (b) Explain the role of microorganisms in formation of humus.

   (c) Explain the role of abiotic components of soil influencing microflora in the soil.

   (d) Describe the zonal distribution of microbes.

2. Answer any **two** of the following questions : **14**

   (a) Describe the types of non-harmful co-existence of microbes in soil.

   (b) Explain the role of microorganisms found in rhizosphere.

   (c) Explain negative interactions of microbes in soil.

   (d) Explain the importance of endophytic fungi.

3. Answer any **two** of the following questions : **14**

   (a) Explain the term mineralization and describe its significance in soil.

   (b) Describe the role of denitrifying and phosphate solubilizing bacteria in soil health.

   (c) Describe the benefits and hazards of microbial control of insect pest.

   (d) Describe the uses and importance of viruses and fungi as bio-pesticides.

4. Answer any **two** of the following questions : **14**

(a) Describe in brief the symptoms of microbial plant diseases.

(b) Explain in general the mode of entry of microbial plant pathogenic agent.

(c) Describe general control measures for fungal plant diseases.

(d) Describe in brief the transmission of viral plant diseases.

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

(1) Name one microorganism that degrades lignin.

(2) Name any bacterium that hydrolyses cellulose.

(3) Give examples of a photosynthetic asymbiotic nitrogen fixing bacterial species.

(4) Give example of synergistic association of bacteria.

(5) Give full form of VAM fungi.

(6) Give example of a PGPB.

(7) Give example of a phosphate solubilizing fungi.

(8) Name the bacterium that causes Citrus Canker in lemon.

(9) Give importance of AM fungi.

(10) Name any insect pathogenic fungi.

(11) Name any virus causing insect disease.

(12) Name any bacterium that converts NO_2 into NO_3.

(13) Name two bacterial plant pathogens.

(14) Give example of an antibiotic produced by an Ascomycete species.

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