

Exam.Code:0005  
Sub. Code: 17479

2115  
B.A./B.Sc. (General) Fifth Semester  
Industrial Microbiology  
IMB 502: Biofertilizers

Time allowed: 3 Hours

Max. Marks: 33

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.*

*x-x-x*

I. Explain/define/comment (any six):-

- a) Anabaena- azolla association
- b) Host specificity of Azospirillum
- c) Acetylene reduction assay
- d) ISI Standards of Biofertilizers
- e) Endophytes
- f) Host Rhizobium interaction
- g) Bradyrhizobium
- h) Role of Mycorrhiza in growth and yield of crops

(6x1½)

**UNIT – I**

- II. a) Write a comprehensive note on mass cultivation of Rhizobium.  
b) Give a general account about the microbes used as biofertilizers.

(2x3)

III. Write note on

- a) Actinorhizal nitrogen fixation
- b) Serology and taxonomy of Rhizobium

(2x3)

**UNIT – II**

- IV. a) Write note on status of cyanobacteria as biofertilizers.  
b) Describe associative effect of different microorganisms w.r.t. nitrogen nutrition of plants.
- V. What do you understand by non-symbiotic association? Write characteristics and physiology of Azotobacter and also describe crop response to Azotobacter inoculation.

(6)

P.T.O.

(2)

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**UNIT – III**

- VI. a) Differentiate between Ectomycorrhiza and Endomycorrhiza.  
b) Write a note on inoculum production of VAM. (2x3)
- VII. a) Describe role of blue green algae in rice cultivation.  
b) Write a note on role of VAM in phosphorus nutrition of plants. (2x3)

**UNIT – IV**

- VIII. a) Describe different methods for identification of nitrogen fixing microorganisms.  
b) Write a note on assessment of nitrogen fixing ability of different strains under controlled conditions. (2x3)
- IX. a) Write down different methods of application of fertilizers in field crops.  
b) Write a note on carrier-based packing of biofertilizers. (2x3)

x-x-x