

1129

**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. I which is compulsory and selecting one question from each Unit.

x-x-x

I. Write short notes on the following:-

- |                                   |     |
|-----------------------------------|-----|
| a) Diazotrophs                    | (2) |
| b) Endophytes                     | (2) |
| c) Associative Symbiotic bacteria | (2) |
| d) BGA                            | (2) |
| e) Mass multiplication            | (1) |

**UNIT – I**

- II. a) Discuss the reasons for poor or no response of inoculation by a fewer strains of *Rhizobium*.
- b) Though being aerobic, *Rhizobium* is able to fix Nitrogen anaerobically. Discuss. (3,3)
- III. Explain carrier based inoculants and serology of *Rhizobium*. (6)

**UNIT – II**

- IV. a) List the number of species of *Azotobacter* differentiated on the basis of morphological and physiological characteristics.
- b) Write physiology of *Azospirillum*. (3,3)
- V. a) Discuss the role of heterocysts in Cyanobacteria
- b) What is the effect of Cyanobacteria on cultivation of rice? (3,3)

**UNIT – III**

- VI. a) Differentiate between Ectomycorrhiza and Endomycorrhiza.
- b) Discuss inoculum production of VAM. (3,3)

(2)

- VII. a) Write taxonomic classification of VAM.  
b) How does Phosphorus affect the growth of plant? (3,3)

**UNIT - IV**

- VIII. Discuss the main advantages of biofertilizers. (6)  
IX. What are the best techniques for isolation of diazotrophs? (6)

x-x-x