

2121

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. Explain/define/comment:-

- a) Carrier based inoculants
- b) Actinorrhizal nitrogen fixing plants
- c) Heterocyst
- d) Non symbiotic association
- e) Ectomycorrhiza
- f) Acetylene reduction assay

(6x1½)

UNIT – I

II Write a comprehensive note on host – Rhizobium interaction for nitrogen fixation 6

III Write note on

- a) Endophytes
- b) Rhizobium taxonomy and physiology

6

UNIT – II

IV Write note on

- a) *Azospirillum* rhizosphere competence
- b) *Anabeana*- azolla association

3x2= 6

V Write note on

- a) Mass cultivation of *Azotobacter*
- b) *Azospirillum* –taxonomy and physiology

3x2= 6

UNIT – III

VI Describe in detail nitrogen fixation factors affecting growth of plants 6

VII Discuss taxonomy, distribution, collection and inoculum production of VAM 6

UNIT – IV

VIII Describe different methods for assessment of nitrogen fixing ability of different strains under controlled and field conditions. 6

IX Write note on

- a) Carrier based packing of biofertilizers
- b) Isolation of nitrogen fixing microorganisms

3x2= 6

x-x-x