1128
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.   Answer the following:-

a) ISI Standards

b) Stock plants

c) Blue-Green Algae

d) Endophytes

e) Carrier base inoculums   (5x1)

UNIT – I

II.   a) What are biofertilizers? Write about the microbes used as biofertilizers.

b) What do you know about the physiology, mass cultivation and serology of *Rhizobium?*   (2x3½)

III. a) Describe the type of interactions existing in *Rhizobium* and various Plants. How these are advantageous for the environment?

b) Give an account of taxonomy of *Rhizobium.*   (2x3½)

UNIT – II

IV.   a) What do you know about the *Azospirilium* rhizosphere competence and host plant specificity?

b) Write about the classification and characteristics of *Azotobacter.* (2x3½)

V.   a) Give the details of *Azolla and Anabaena* association along with their advantages.

b) How inoculum preparation, maintenance and mass cultivation *of Azotobacter* is carried out at commercial level.   (2x3½)

P.T.O.

UNIT – III

VI.   a) Describe the nitrogen fixation factors affecting growth of plants.

     b) How the collection, isolation and inoculum preparation of VAM is carried out?

                                                          (2x3½)

VII.   a) Write about the taxonomy and types of VAM mycorrhizal assodationa in nature.

     b) Discuss which symbiotic associations are useful for rice crop.   (2x3½)

UNIT – IV

VIII.   a) Discuss how the assessment of nitrogen fixing ability of deferent strains under controlled conditions is done?

      b) How quality control in biofertilizes is managed?   (2x3½)

IX.   a) Describe the methods of isolation of nitrogen fixing microbes.

     b) What do you know about the culture production and inoculum requirements of nitrogen fixing bacteria?   (2x3½)

x-x-x