Exam.Code:0003
Sub. Code: 0278

2012

B.A./B.Sc. (General) Third Semester

Industrial Microbiology

IMB-301: Environmental Microbiology

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

1. Answer briefly:-
   a) Ecosystem
   b) Mutualism
   c) Somatic mutations
   d) Denitrification
   e) Osmoregulation (1x5=5)

UNIT-I

2. a) Discuss the microbial flora in air.
   b) Explain the induced physiological adaptations found in microbes living in soil. (3 ½+3 ½=7)
3. a) Write in detail the microbial diversity of aquatic environment.
   b) How microbes are adapted to the various environmental conditions? Give reasons with examples. (3 ½+3 ½=7)

UNIT-II

4. a) Explain the recycling of Hydrogen in the environment.
   b) Describe the process of denitrification and nitrite ammonification. (3 ½+3 ½=7)
5. a) Define biogeochemical cycling and give its significance. Which microbes are involved in sulphur cycle.
   b) How does mobilization and immobilization of carbon occurs in biosphere? (3 ½+3 ½=7).

UNIT-III

6. a) Discuss the plant and microbial interactions along with their significance in the environment.
   b) What are the types of negative interactions prevalent in the environment among animals and microbes . (3 ½+3 ½=7)
7. Explain the following with appropriate examples:
   i) Commensalism ii) Synergism (3 ½+3 ½=7)

UNIT-IV

8. a) Define biopesticides. Discuss the degradation of pesticides in the environment.
   b) Explain the methods of bioremediation of contaminated soil. (3 ½+3 ½=7)
9. Write a note on the following:
   i) Decay behavior and degradative plasmids
   ii) Microbes as cleaning agents in the environment . (3 ½+3 ½=7)

x-x-x