

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086  
(For candidates admitted during the academic year 2004 – 05 & thereafter)

SUBJECT CODE: BT/MO/SB64

B. Sc. DEGREE EXAMINATION, APRIL 2010

BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY  
SIXTH SEMESTER

COURSE : MAJOR – OPTIONAL

PAPER : SOIL BIOLOGY AND BIOTECHNOLOGY

TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

I Choose the correct answer

( 6 x 1 = 6 )

1. The micro organisms associated with the surface of the plant leaves is called  
a)Aerosphere      b)Rhizosphere      c)Phyllosphere      d)*Aspergillus*
2. Heterocystous Cyanobacteria is  
a)*Oscillatoria*      b)*Anabaena*      c)*Rhizobium*      d)*Clostridium*
3. The pleasant odour of freshly ploughed soil is due to the presence of  
a)Algae      b)Fungi      c)Bacteria      d)Actinomycetes
4. Subsoil is also called as  
a)A Horizon      b)B Horizon      c)C Horizon      d)Top soil
5. The association of two populations live together in which one population is benefitted and the other not affected is  
a)Commensalism      b)Epiphyte      c)Mutualism      d)Amensalism
6. Which of the following is a not a Bacterial insecticide  
a)Thuricide      b)Sporeine      c)Condor      d)Boverin

II Fill in the blank

( 6 x 1 = 6 )

7. The amount of water present around the soil particle is known as \_\_\_\_\_.
8. The conversion of fixed form of nitrogen to molecular nitrogen is known as \_\_\_\_\_.
9. The rates of nitrogen fixation by cyanobacteria are -----than free living bacteria.
10. Cyanobacteria possess \_\_\_\_\_ type of cell structure.
11. The organic portion of the soil remaining after microbial decomposition is known as \_\_\_\_\_.
12. Nematodes are grouped on the basis of -----.

**III State True / False****( 6 x 1 = 6 )**

13. Soil temperature influences germination of seeds.
14. *Nitrosomonas* is a nitrifying bacterium.
15. Fungal populations are favoured in soils of higher pH.
16. Archaeobacteria differ from true bacteria on the basis of analysis of their 16s rRNA molecule.
17. Geophagous earthworms are epigeic.
18. Gram positive bacteria are abundant in fresh water and marine habitat than in soil.

**IV Answer any six questions in 50 words each****( 6 x 3 = 18 )**

19. Rhizosphere
20. Vermiwash
21. Microbial herbicide
22. Protists
23. Virus
24. Diazotrophs
25. Gravitational water
26. Podogenesis
27. Leghemoglobin

**SECTION – B****Answer any FOUR questions in 200 words each. Draw diagrams wherever necessary.****( 4 x 6 = 24 )**

28. What is soil Genesis? Explain.
29. Write short notes on winged insects.
30. Give a brief account of distribution and function of protozoa.
31. Explain vermiculture in detail.
32. Describe microbial transformation of Sulphur.
33. Give an account on viral insecticides.

**SECTION – C****Answer any TWO questions in 1000 words each. Draw diagrams wherever necessary.****( 2 x 20 = 40 )**

34. What is the importance of soil micro organism? Give an account of microbial decomposition of organic matter of soil.
35. Write an essay on symbiotic nitrogen fixation.
36. Give a detailed account on VAM fungi.
37. Write notes on Entomopathogenic fungi.

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