STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For Candidates admitted during the academic year 2010 - 11)

SUBJECT CODE: ZL/MC/SB12

B.Sc. DEGREE EXAMINATION NOVEMBER 2010
BRANCH VI.A. – ADVANCED ZOOLOGY & BIOTECHNOLOGY
FIRST SEMESTER

COURSE : MAJOR CORE
PAPER : SOIL BIOLOGY
TIME : 2 ½ HOURS **MAX. MARKS: 100**

SECTION – A **(5 x 6 = 30)**

1. **MATCH THE FOLLOWING**
   a) Edaphology - Deposition of soil by wave action.
   b) Duff - Small particles of soil forming rocks.
   c) Regoliths - Study of Soil
   d) Lacustrine - Brown to grey coloured soil
   e) Oligotrophic soil - Partially decomposed litter
   f) Pedzolic soil - Soil with subohlimal cone of nutrients

2. **FILL IN THE BLANKS WITH SUITABLE ANSWERS**
   a) The downward movement of water soluble chemicals and other minerals is known as _____.
   b) Degradation of nitrate is called_____.
   c) Sand brought and deposited by wind is known as _____.
   d) Animals which are adapted for subterranean mode of life are called_____ animals.
   e) The neutral or slightly alkaline soil which contain rich microflora is called_____.
   f) The total amount of water present in the soil is called_____.

3. **STATE WHETHER THE FOLLOWING STATEMENTS ARE TRUE/FALSE**
   a) The formation of humus is called humification.
   b) Porosity of the soil increases with the decrease in the percentage of organic matter.
   c) Soil fauna with body size ranging from 200µ to 1cm are called Mesofauna.
   d) The permanently frozen deeper soil layer is called Permafrost.
   e) Laterite soil is from limestones and ferromagnesium rocks.
   f) Areas where ground water reaches the surface and runs off are termed Springs.

4. **CHOOSE THE CORRECT ANSWER**
   a) The property of soil based on the size of its particle is termed.
      i) Colour ii) Soil texture iii) Field capacity iv) Water holding capacity
   b) The rock body through which ground water flows is called.
      i) Aquifer ii) Water cycle iii) Igneous rock iv) Regoliths
   c) The ultimate source of phosphate in the ecosystem is
      i) Sedimentary rocks ii) Metamorphic rocks iii) Crystalline rocks iv) Latosols

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d) The characteristic feature of Vertisol is
   i) Excess of clay ii) Excess of humus iii) Excess of sand iv) Excess of minerals
e) Psammosere is the ecological succession that takes place in
   i) sand ii) forest iii) bare rock iv) water
f) The excessive discharge of fertilizers into waterbodies results in
   i) Silt ii) Death of hydrophytes iii) Eutrophication iv) Growth of fish

5. Define
   a) Mineralization.
   b) Ecological pyramid
   c) Gleization
   d) Wilting coefficient
   e) Biosphere
   f) Ecological succession

SECTION – B

ANSWER ANY FIVE QUESTIONS **(5 x 6 = 30)**

6. Describe the soil profile with a neat diagram.
7. Write short notes on Phosphorus cycle.
8. Describe different kinds of ecological pyramids.
9. How will you determine the soil texture, moisture, pH, nitrate and carbonate content.
10. Give an account on agricultural pollutants.
11. Explain food chain and food web. What is the link between the grazing and detritus food chain.
12. Describe the sampling method of soil organism.

SECTION – C

ANSWER ANY TWO QUESTIONS **(2 x 20 = 40)**

13. Describe the physical and chemical properties of soil.
14. Give an account of the nitrogen cycle and its significance in the ecosystem.
15. Describe the types and general process of succession.
16. Write an essay on solid waste management through vermitechnology.

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