

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**(For Candidates admitted during the academic year 2008-09 & thereafter)**  
**SUBJECT CODE: ZL/MC/SB12**  
**B.Sc. DEGREE EXAMINATION NOVEMBER 2009**  
**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) Tundra Soils   | - | net water movement from Surface to Ground water      |
| b) Catchment area | - | The stage with Success ional species                 |
| c) Edaphic        | - | Decreases soil loss & preserves productivity of land |
| d) Sere           | - | Part of the benthos living on the mud surface matter |
| e) Crop rotation  | - | Soils of cold zone                                   |
| f) Epifauna       | - | Constrained by soil conditions                       |

**2. FILL IN THE BLANKS WITH SUITABLE ANSWERS**

- a) Edaphic factors are related to \_\_\_\_\_.
- b) Property of soil based on the size of its particles is termed \_\_\_\_\_.
- c) The soil A<sub>0</sub> layer consists of \_\_\_\_\_.
- d) The least porous soil is \_\_\_\_\_.
- e) Non – living components of the environment are called \_\_\_\_\_.
- f) Animals which are adapted for digging the burrows are called \_\_\_\_\_.

**3. STATE WHETHER THE FOLLOWING STATEMENTS ARE TRUE/FALSE**

- a) A rock body through which ground water flows is called aquifer
- b) Peaty soils are mostly found in Madras.
- c) Succession involves a turnover of species during ecological time.
- d) The largest reservoir of sulphur in the biosphere is the ocean.
- e) Energy & nutrients enter a community by way of the consumer.
- f) The black cotton soils occur in Bihar.

**4. CHOOSE THE CORRECT ANSWER**

- a) Which of the following is the largest terrestrial community.  
i) Biosphere ii) Biome iii) Biomass iv) Ecosystem
- b) The main nitrogen reservoir in the biosphere is the  
i) Atmosphere ii) Ocean iii) Organism iv) rocks
- c) What is the source of energy that flows through the living world.  
i) Photosynthesis ii) Green plant iii) The sun iv) Chemical bond
- d) Most important cause of soil pollution is  
i) Iron junks ii) Glass junks iii) Detergents iv) Plastics

- e) The most effective means of conservation is to  
 i) Remove predators                      ii) Vaccinate against disease  
 iii) Preserve Habitat                      iv) Census
- f) The sulphur cycle is both  
 i) Sedimentary & gaseous                      ii) Sedimentary  
 iii) Gaseous                      iv) Part of water cycle
5. Define  
 a) Detritivores                      b) Afforestation                      c) Vermitech  
 d) Biomass                      e) Agricultural pollutants                      f) Soil flora

### SECTION – B

**ANSWER ANY FIVE QUESTIONS**

**(5 x 6 = 30)**

6. Describe the process of soil formation.
7. Enumerate the functions of eco – system.
8. What are biogeochemical cycles? Describe the Phosphorus cycle.
9. Write a note on adaptations of soil animals.
10. Differentiate between  
 a) abiotic factors & biotic factors  
 b) Food chain & Food web.  
 c) Podzols & Latosol
11. Explain the method for extraction of soil Micro arthropods.
12. Briefly describe the methods of soil reclamation.

### SECTION – C

**ANSWER ANY TWO QUESTIONS**

**(2 x 20 = 40)**

13. Describe the types & general process of Succession.
14. Give a detailed account on soil properties.
15. Describe the solid waste management.
16. Give an account of the carbon cycle & its significance in eco – system.

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