

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 2008
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) D HORIZON - Down-ward movement of chemicals
 - b) Macrofauna - excess clay
 - c) Vertisol - edaphic factor
 - d) Soil - Food from dead and decaying organic matter
 - e) Saprophytes - earthworm
 - f) Leaching - Rock Material
2. **FILL IN THE BLANKS WITH SUITABLE ANSWERS**
 - a) _____ is the study of soils.
 - b) _____ Rocks are formed due to cooling of molten lava.
 - c) Nitrogen fixing bacteria are _____ and _____.
 - d) The process of formation of humus is called _____.
 - e) Soil of cold zone is _____.
 - f) The water that occurs in the form of thin film on the soil particles is termed as _____.
3. **STATE WHETHER THE FOLLOWING STATEMENTS ARE TRUE/FALSE**
 - a) Capillary water fills the space between non colloidal soil particles.
 - b) Podzols are Red to yellow in colour.
 - c) Pyramid of number depicts the number of individual organisms at different trophic levels of food chain.
 - d) The water which the soil does not yield to the plant is known as nonavailable water.
 - e) In Sandy loam soil clay particles, sand and silt are more or less equal in proportion.
 - f) Fragmentation is the mechanical breakdown of rock material in to smaller pieces.
4. **CHOOSE THE CORRECT ANSWER**
 - a) Water logging occurs in
 - i) Clay soil ii) Loamy soil iii) Gravel soil iv) Sandy Soil
 - b) Which of the following soil is suited for fossorial animals such as earthworms?
 - i) Loam and humus ii) Clay iii) Silt iv) Sand
 - c) Primary succession takes much longer than secondary succession, because it involves
 - i) Development of soil ii) Development of seed
 - iii) Colonization of organisms that are further away
 - iv) None of the above

- d) Smog is
 - i) Smoke
 - ii) dust storm
 - iii) Moistened air gases
 - iv) Smoke and fog.
- f) The gas which was released in Bhopal Tragedy was
 - I) Ethylene
 - ii) Methyl isocyanide
 - iii) Mustard gas
 - iv) Potassium Isocyanide
- g) Most important cause of soil pollution is
 - i) Iron junks
 - ii) glass junks
 - iii) Detergents
 - iv) Plastics
- 5. Define
 - a) Food chain
 - b) Hydrosphere
 - c) Vermitech
 - d) Xerosere
 - e) Pollutant
 - f) Pyramid of number

SECTION – B

ANSWER ANY FIVE QUESTIONS

(5 x 6 = 30)

- 6. Define soil profile. Draw and describe the soil profile.
- 7. What are biogeochemical cycle? Describe phosphorous cycle.
- 8. Describe how the micro arthropods are extracted?
- 9. What are the agents of soil erosion? What control measures can be adopted to prevent such erosion?
- 10. Differentiate between.
 - a) Primary succession and secondary succession.
 - b) Residual soil and Transported soil.
- 11. Describe the process leading to the formation of soil and lumus.
- 12. What is soil reclamation?

SECTION – C

ANSWER ANY TWO QUESTIONS

(2 x 20 = 40)

- 13. Discuss the impact of Agricultural pollution on soil.
- 14. Explain the essential steps that are involved in Nitrogen cycle.
- 15. Classify soil flora and fauna & highlight their role in improving soil quality.
- 16. Give an account on Afforestation.
