

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 2053

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Unique Paper Code : 2182011202

Name of the Paper : Land and Soil : Conservation and Management

Name of the Course : **B.Sc. (H) Environmental Sciences - Core**

Semester : II

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **four** questions out of the **six** provided. **All** questions carry equal marks.

1. (a) Fill in the blanks: (1×5=5)

- i. The relative proportion of sand, silt and clay in soil determines soil _____.
- ii. The dark-coloured organic component of soil is called _____.
- iii. Excess exchangeable sodium in soil causes soil _____.
- iv. The ability of soil to recover after disturbance is called soil _____.
- v. The conversion of fertile land into desert-like conditions is called _____.

(b) Define and explain the following terms: (2×5=10)

- i. Soil resilience
- ii. Nutrient depletion
- iii. Land degradation
- iv. Soil water-holding capacity
- v. Participatory land degradation assessment

2. Differentiate between the following: (3×5=15)

- i. Soil resistance and soil resilience
- ii. Sheet erosion and gully erosion
- iii. Onsite costs and offsite costs of land degradation
- iv. Fertilizer management and recycling of soil nutrients
- v. Land-use change and land-cover change

3. Write short notes on the following: (3½×4=15)

- i. Soil pollution due to mining and mineral extraction
- ii. Losses of soil moisture and their regulation
- iii. Industrial and urban development as causes of soil degradation
- iv. Toxic organic chemicals and organic contaminants in soil

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4. Analyse the biological and physical phenomena involved in land degradation. How can visual indicators be used to assess the intensity and extent of land degradation in the field? (15)
5. Discuss the socio-economic and institutional drivers of land degradation. Evaluate how human population pressure, poverty, land tenure and weak land policy accelerate degradation in developing regions. (15)
6. Explain sustainable land-use planning. Discuss the role of databases, data analysis, legal frameworks and community participation in controlling land degradation. (15)