

**B.Tech. Civil (Water Resources  
Engineering)****Term-End Examination****June, 2008****ET-531(B) : SOIL SCIENCE**

Time : 3 hours

Maximum Marks : 70

**Notes :**

- (i) Answer any five questions.
  - (ii) Give neat and labelled sketches, wherever necessary.
  - (iii) The answer should be in your own language.
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1. Explain the following in detail :

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- (i) Physical weathering of rocks
- (ii) USDA textural classification
- (iii) Soil moisture characteristics curve
- (iv) Darcy's law

2. (a) List the various methods of soil moisture measurement and describe construction and working of tensiometer.
- (b) Differentiate between hydraulic conductivity, permeability and fluidity. 2x7=14
3. (a) What are soil colloids? Differentiate between organic and inorganic colloids.
- (b) Describe the mechanism of nutrient movement from soil to plants. 2x7=14
4. (a) Differentiate between red soils and lateritic soils.
- (b) Describe the procedures to calculate the lime requirement in soils. 2x7=14
5. (a) Describe the diagnostic sub-surface horizons in detail.
- (b) Differentiate between soil profile and soil horizons. 2x7=14
6. (a) Describe the mechanism of nitrogen fixing bacteria in detail.
- (b) Discuss the factors affecting the microbial activity. 2x7=14
7. (a) What do you understand by plant disease resistance? Discuss in detail.
- (b) What is a fungicide? Describe some important fungicides. 2x7=14

8. Write short notes on the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (i) Benchmark soils
- (ii) Soil moisture regime
- (iii) Storie Index Rating (SIR)
- (iv) Soil series

