

**B.Tech. Civil (Construction Management) /  
B.Tech. Civil (Water Resources Engineering)**

011115

**Term-End Examination**

**June, 2012**

**ET-501(B) : FOUNDATION ENGINEERING**

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Attempt any five questions. All questions carry equal marks. Use of calculator is permitted.*

1. (a) Discuss Electrical Resistivity method used for sub - soil investigation. 7
- (b) What are various types of samplers ? Explain any one of them. 7
2. (a) What is the purpose of plate load test ? How is it conducted ? 7
- (b) A strip footing is 2.0m wide and its base rests on 1.25m below G.L. Determine ultimate bearing capacity.  $\gamma=18 \text{ kN/m}^3$ ,  $C=98 \text{ kN/m}^3$ ,  $N_c=61.4$ ,  $N_q=49.1$ ,  $N_\gamma=66.9$ . 7
3. (a) Discuss various considerations in selection of type of foundation. 7
- (b) What are advantages of Raft Foundations ? 7

4. (a) Explain the design procedure of a combined footing. 7  
(b) Discuss various precautions taken to control settlement in buildings. 7
5. (a) What is the meaning of Earth pressure ? How various types of it are differentiated ? 7  
(b) What are different types of failures of Retaining walls ? Describe with the help of neat sketches. 7
6. (a) Discuss the condition when a strap footing is required. What should be the required property of strap beam ? 7  
(b) What are creep settlements ? What are the reasons behind such settlements ? 7
7. (a) What is pile load test ? How is it conducted ? 7  
(b) What is Negative skin friction in piles ? Explain with a neat sketch. 7
8. (a) What loads are considered in the design of a foundation ? 7  
(b) Write limitations of Rankine's theory of earth pressure. 7
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