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ET-501(B)

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

Term-End Examination

December, 2015

ET-501(B) : FOUNDATION ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Use of scientific calculator is permitted. Assume any missing data suitably.

1. (a) Discuss the seismic method for subsoil investigation. 7
- (b) What are the various types of foundations ? Explain any two of them. 7
2. (a) What are the factors affecting the bearing capacity of soil ? Explain briefly all of them. 7
- (b) Explain Terzaghi theory for bearing capacity. 7

3. (a) What are the different types of footings ? Explain with neat sketches, the Trapezoidal footing. Where is it provided ? 7
- (b) What is raft foundation ? Explain the design principles of raft foundation by conventional method. 7
4. (a) What are the causes of settlement ? Explain clearly. 7
- (b) How can settlements be controlled by soil improvement methods ? Explain. 7
5. (a) Explain the following : 7
- (i) Active earth pressure
- (ii) Passive earth pressure
- (b) What are the causes of failure of earth retaining structures ? Explain briefly each of them. 7
6. (a) Explain the following : 7
- (i) Shallow and Deep foundations
- (ii) Isolated and Combined footings
- (b) What are the types of foundations suitable for expansive soils ? Explain with neat sketches. 7

7. (a) What are the different types of piles ?
Explain clearly. 7
- (b) Explain pile load test in detail. 7
8. (a) What are the different types of foundations
used for machines ? Explain. 7
- (b) Explain under-reamed piles. 7
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