



c09-c-606 B

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**BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2016
DCE—SIXTH SEMESTER EXAMINATION**

GEOTECHNICAL ENGINEERING

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State any four types of soil.
2. State any four objectives of soil exploration.
3. Define the terms (a) void ratio and (b) porosity.
4. Define the terms (a) bulk density and (b) dry density.
5. Water are the basic soil constituents that govern the shear strength of the soil. Discuss.
6. Write about the effect of water table on the bearing capacity of soils.
7. Define the term 'isobar'.
8. State any three objectives of compaction.
9. State any four remedial measures to be taken to avoid settlements in foundation.
10. Define the term CBR. What is its importance?

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PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11.** Explain seismic electrical resistivity method of sub-surface exploration. 10
- 12.** Explain method of disturbed soil sampling for testing. 10
- 13.** Explain laboratory procedure for determining plastic limit. 10
- 14.** Describe the method of conducting direct shear test in the laboratory with the help of a neat sketch. 10
- 15.** Explain the field plate load test for determining the ultimate bearing capacity of soils. 10
- 16.** Explain the importance of bearing capacity and settlement in the design of foundation. 10
- 17.** Explain the field measurement of compaction by sand replacement method. 10

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- 18.** Explain the following terms : $2\frac{1}{2}\times 4=10$
- (a) Plasticity index
- (b) Compressibility
- (c) California bearing ratio
- (d) Compaction
