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C16-C-504

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BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—2023

DCE - FIFTH 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. Define the terms (a) plasticity and (b) cohesion. 1½+1½
2. List the geo-physical methods of soil exploration. 3
3. Define the terms (a) void ratio and (b) porosity of a soil. 1½+1½
4. State the factors affecting permeability of soil. 3
- * 5. State IS code equation for calculation of SBC of soils. 3
6. List different modes of shear failure of soils. 3
7. List any three remedial measures to avoid settlement of foundations. 1+1+1
8. Write a short note on consolidation of soil. 3
9. What are the objectives of compaction? 3
10. State the importance of CBR in the design of pavements. 3

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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 criterion for valuation is the content but not the length of the answer.

- 11.** List the different types of soils and explain any four. 2+2+2+2+2
- 12.** (a) Describe the ground water exploration. 5
(b) List the advantages and disadvantages of direct shear test. 2½+2½
- 13.** Explain test procedure for determination of specific gravity of soil by pycnometer method. 10
- 14.** Describe the procedure for determination of liquid limit by Casagrande's apparatus. 10
- 15.** Explain the textural classification of soil with a sketch. 5+5
- 16.** Explain the field plate load test for determining the ultimate bearing capacity of soil. 10
- 17.** (a) Explain the importance of settlements in design of foundation. 5
(b) Explain the field implications of consolidation of soil. 5
- 18.** Explain the field measurement of compaction by core cutter method. 10

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