

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2022**

GEOTECHNICAL ENGINEERING

[Maximum marks: 100]

(Time: 3 Hours)

PART – A

Maximum marks : 10

I (Answer *all* the questions in one or two sentences. Each question carries 2 marks)

1. Explain the importance of soil engineering.
2. Define specific gravity of soil.
3. State Darcy's law.
4. List the types of soil samplers.
5. Define the term foundation.

(5 x 2 = 10)

PART – B

Maximum marks : 30

II (Answer any *five* of the following questions. Each question carries 6 marks)

1. Explain Atterberg limits of soil.
2. List the factors affecting permeability.
3. Plot the compaction curve and explain the features.
4. List the limitation of plate load test.
5. Describe seismic refraction method.
6. What are the objectives of foundation.
7. Distinguish between shallow and deep foundation.

(5 x 6= 30)

PART – C

Maximum marks : 60

(Answer one full question from each unit. Each full question carries 15 marks)

UNIT –I

III.(a) Explain the procedure to find the water content using oven dry method.

(8)

(b) What are the corrections applied for hydrometer. (7)

OR

IV.(a) Describe the procedure for sand replacement method. (8)

(b) Explain particle size distribution curve. (7)

UNIT-II

V.(a) Describe the procedure for constant head test. (8)

(b) Explain core cutter method. (7)

OR

VI.(a) Define the terms permeability, seepage velocity and OMC. (9)

(b) Explain the factors affecting compaction. (6)

UNIT-III

VII.(a) List and explain various soil samplers. (9)

(b) Define the Ultimate bearing capacity, safe bearing capacity and allowable bearing pressure. (6)

OR

VIII.(a) Explain general and local shear failure. (8)

(b) List the objectives of site exploration. (7)

UNIT-IV

IX. (a) What are the necessity of pile foundation. (7)

(b) What are the causes of failure of foundation. (8)

OR

X. (a) Describe the method of well sinking. (9)

(b) Explain the classification of piles based on materials used and mode of transfer of loads. (6)
