

**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)**



M.Tech (First Semester) Regular Examinations, February – 2025

**24MCTPE11011 - GEOTECHNICAL INVESTIGATIONS FOR
CONSTRUCTION PROJECTS**

(Construction Technology and Management)

Time: 3 hrs

Maximum: 60 Marks

**Answer ALL questions
(The figures in the right hand margin indicate marks)**

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

- | | CO # | Blooms
Level |
|---|------|-----------------|
| a. What is meant by subsurface exploration programme? | CO1 | K1 |
| b. Define the term Area Ratio (A_r) | CO2 | K1 |
| c. What is soil stabilization? | CO3 | K2 |
| d. What is grouting? | CO4 | K2 |
| e. Write short notes on sand drains. | CO5 | K2 |

PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

- | | Marks | CO # | Blooms
Level |
|--|-------|------|-----------------|
| 2. a. Describe briefly about Percussion drilling. | 5 | CO1 | K2 |
| b. Explain about Rotary drilling. | 5 | CO1 | K2 |
| (OR) | | | |
| c. Describe in detail about Vane Shear test. | 5 | CO1 | K3 |
| d. Write in detail about Pressure meter test. | 5 | CO1 | K3 |
| 3.a. Illustrate in detail about Scraper Bucket sampler. | 5 | CO2 | K3 |
| b. What is boring log? How to prepare boring log? | 5 | CO2 | K3 |
| (OR) | | | |
| c. Demonstrate in detail about Denison sampler. | 5 | CO2 | K3 |
| d. What is sub-soil investigation report and state its importance? | 5 | CO2 | K2 |
| 4.a. What are the factors that influence compaction in case of rollers? | 5 | CO3 | K2 |
| b. Write short on Vibratory compactors. | 5 | CO3 | K2 |
| (OR) | | | |
| c. Describe briefly about Modified Proctor test. | 5 | CO3 | K2 |
| d. What are the factors affecting compaction? | 5 | CO3 | K3 |
| 5.a. What is dewatering? Explain about single-stage well points dewatering method. | 5 | CO4 | K4 |
| b. Give detailed explanation about the design of vertical drains | 5 | CO4 | K4 |
| (OR) | | | |
| c. Explain briefly about prefabricated drains. | 5 | CO4 | K2 |
| d. Describe dewatering method by Electro-osmosis. | 5 | CO4 | K3 |
| 6.a. What are the grouting materials used for grouting. | 5 | CO5 | K1 |
| b. What are the salient factors considered to achieve best performance by Preloading techniques. | 5 | CO5 | K4 |
| (OR) | | | |
| c. Explain the phenomenon of Precompression or Preloading with neat diagram. | 5 | CO5 | K4 |
| d. Write short notes on grouting with cement mixes. | 5 | CO5 | K2 |

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