QP Code: RJ23MTECH047 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester) Examinations, January – 2024

MPECT1053 - Geotechnical Investigation for Construction Projects

(Construction Technology and Management)

Time: 3 Hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer all questions	CO#	Blooms Level
a. What do you mean by Deep stabilization?	CO4	K1
b. Write short notes on core drilling.	CO4	K1
c. What is grouting?	CO3	K1
d. What is meant by Preloading or surcharging?	CO3	K1
e. What should be the ranges of Area Ratio, inside clearance and outside clearance to get undisturbed soil samples?	CO1	K1
f. What do you mean by site investigations? Give any one purpose of site investigation.	CO1	K1
g. Define the term SPT.	CO1	K2
h. Define the term Optimum Moisture Content.	CO2	K2
i. What are the main purposes of soil sampling?	CO2	K1
j. List out the five types of lime used for lime stabilization.	CO2	K1

PART – B **(10 x 5=50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO#	Blooms Level
2. a. Explain briefly about the direct methods of soil investigations.	5	CO1	K2
b. Write short notes on Auger boring.	5	CO1	K1
3.a. What is dewatering? Explain about single-stage well points dewatering method.	5	CO4	K1
b. Illustrate in detail about Vibroflotation method with neat diagram	5	CO4	K1
4. a. Explain the importance of soil sampling.	5	CO1	K2
b. Write in brief about Split spoon samplers.	5	CO2	K1
5.a. Write in brief about Dynamic cone penetration test.	5	CO1	K1
b. Write in brief about Plate load test.	5	CO2	K1
6. a. Illustrate in detail about Scraper Bucket sampler.	5	CO2	K1
b. What is boring log? How to prepare boring log?	5	CO2	K1
7.a. Demonstrate in detail about hand carved samples.	5	CO3	K1

b. The dimensions of a soil sampler are given below 5 CO3 K3

Parameter	Cutting edge	Sampling edge
Inside Diameter (mm)	80	86
Outside diameter (mm)	100	90

Determine the Inside clearance, outside clearance, Area ratio.

8. a. Explain about the compaction curve obtained in standard penetration test. 5 CO3 K2

b. Define the following: 5 CO3 K1

(i) Zero air void line

(ii) Line of optimum

(iii) Theoretical maximum dry density

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