Reg. No: ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations August-2021
GEOTECHNICAL ENGINEERING
(Civil Engineering)

Time: 3 hours   Max. Marks: 60

PART-A
(Answer all the Questions 5 x 2 = 10 Marks)

1	a	Define (i) Discharge velocity (ii) Seepage velocity.	2M
	b	Write short notes on Coefficient of compressibility.	2M
	c	List out various assumptions of Boussinesq's equation.	2M
	d	Mention various uses of Taylor's stability number.	2M
	e	What are hand carved samplers.	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	What are consistency limits explain with graph.	5M
	b	Explain in detail the laboratory method of liquid limit.	5M

OR

3	Explain in detail the Indian Standard classification System and list out-group symbols in detail.	10M

UNIT-II

4	Describe the Standard Proctor test and modified Proctor test to be conducted in the laboratory.	10M

OR

5	a	Write short notes on Compaction phenomenon.	5M
	b	Write short notes on Method of compaction.	5M

UNIT-III

6	a	Explain types of soils based on total strength.	5M
	b	Explain types of shear strength based on drainage conditions.	5M

OR

7	Explain Newmaark's influence chart with neat sketch.	10M

UNIT-IV

8	a	Define earth slope.	5M
	b	Explain factor of safety with respect to shear strength, cohesion and friction.	5M

OR

9	Give the step-by-step procedure of analyzing stability of a finite slope using Swedish circle method.	10M

UNIT-V

10	Explain in detail how Cone Penetration Test is conducted with neat sketch.	10M

OR

11	a	Discuss various open excavation methods for conducting soil exploration.	5M
	b	Sketch scraper bucket sample and explain how an undisturbed soil sample is extracted using it.	5M

END