| **R19**

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations July-2022
GEOTECHNICAL ENGINEERING
(Civil Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Classify various types of soil structures with neat sketch.	L1	6M
	b	Explain Clay mineralogy.	L2	6M

OR

2	Determine the average coefficient of permeability in the horizontal and vertical direction for a deposit consisting of three layers of thickness 5m, 1m, and 2.5m and having the coefficient of permeability of 3×10^{-2} mm/sec, 3×10^{-5} mm/sec and 4×10^{-2} mm/sec respectively.	L3	12M

UNIT-II

3	Explain the procedure of Core Cutter method with neat sketch.	L2	12M

OR

4	In a consolidation test the following results have been obtained. When the load was changed from 50 kN/m2 to 100 kN/m2 , the void ratio changed from 0.70 to 0.65. Determine compression index, coefficient of volume change and coefficient of consolidation in mm2 /sec.	L2	12M

UNIT-III

5	Explain Newmaark's influence chart with neat sketch.	L2	12M

OR

6	Write brief critical notes on: (i) Mohr's Circle of stress. ii) Explain the Mohr-Coulomb strength theory.	L1	12M

UNIT-IV

7	With the help of a neat sketch explain in detail about friction circle method.	L2	12M

OR

8	Analyze the slope, if it is made of clay having c ' = 30 kN/m2 , Φ' = 20 o , e = 0.65 and G = 2.67 and under the following conditions: (i) When the soil is dry (ii) When water seeps parallel to the surface of the slope (iii) When the slope issubmerged slope angle = 25	L3	12M

UNIT-V

9	a	What are the different stages in sub soil exploration.	L1	6M
	b	Explain various uses of site investigations.	L2	6M

OR

10	Explain in detail how plate load Test is conducted with neat sketch.	L3	12M

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