Code No: **R1641013** **R16** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February - 2020

GEOTECHNICAL ENGINEERING - II

(Civil Engineering)

Time: 3 hours **Max. Marks:70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1.	a)	Explain the finite slope in Sandy soils	[2]
	b)	Write clear note on Active Earth Pressure with the help of neat sketch?	[3]
	c)	What are the types of foundations?	[2]
	d)	What are the different types of piles and explain in brief?	[3]
	e)	Write different types of wells?	[2]
	f)	Write short note on need for soil exploration?	[2]

PART–B *(4x14 = 56 Marks)*

2.	a)	Discuss about the failures of slopes in detail.	[7]
	b)	Derive suitable formulae for slope stability analysis using Swedish Arc Method?	[7]
3.		Derive suitable formulae for Rankine's Earth Pressure in Cohesive soils with help of neat sketch? Explain the importance of this method when compared with other methods?	[14]
4.	a)	Explain how settlements can be determined using Plate load test?	[6]
	b)	Describe various foundation settlements and bring out the importance of "allowable settlement of a structure".	[8]
5.	a)	Write clear note on sinking of well foundations ?	[7]
	b)	Explain the Pile Load test with the help of neat sketch?	[7]
6.	a)	What are the methods of soil exploration? Explain any one method?	[7]
	b)	Describe the importance of pressure meter for soil exploration?	[7]
7.	a)	Explain the factors influencing the bearing capacity.	[7]
	b)	Find the Ultimate bearing capacity of the given foundation of 1.40m width and depth of foundation is 1.2 m. Calculate the required data by Using Terzaghi's theory and also assume general shear failure. Consider $\Phi' = 32^0$, $\gamma = 17kN/m^3$, and $c' = 14\ kN/m^2$. **Note:** provide table for calculating necessary data.	[7]

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