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Internal Assessment Test 2 – Oct. 2018

Sub:	APPLIED GEOTECHNICAL ENGINEERING					Sub Code:	15CV53	Branch:	CV	
Date:	17/10/18	Duration:	90 min's	Max Marks:	50	Sem / Sec:	V (A&B)		OBE	

Answer ALL Questions

		MARKS	CO	RBT
1 (a)	Define earth pressure at rest with a neat sketch.	[03]	CO3	L2
(b)	Compare between Coulomb's and Rankine's theories.	[04]	CO3	L2
(c)	A retaining wall 9m high retains a cohesionless backfill with e= 0.6, Φ=33◦ and G =2.68. The surface is level with the top of the wall. The water table is at a depth of 3m from ground level. Obtain pressure distribution diagram and determine the total active pressure and its point of application. Take γ_w = 10 kN/m^3.	[09]	CO3	L3
2 (a)	Explain the Swedish Circle method of stability analysis for a C-Φ soil.	[07]	CO3	L2
(b)	Explain the Fellinious method of locating the center of critical slip circle.	[06]	CO3	L2
(c)	A 6 m deep canal is to be excavated through a soil with C = 15 kN/m^2, Φ = 20◦, e = 0.65 & G = 2.6. The side slope is 1:1. If S_n = 0.06, determine the FOS wrt cohesion when the canal runs full. What will be the FOS if the canal is rapidly emptied? Take Taylor's stability no: for this condition as 0.114.	[04]	CO3	L3

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(b)	Explain briefly the types of slope failure.	[06]	CO3	L2
(c)	A homogeneous slope 15 m high is made of c − ϕ soil with unit weight of l8kN/m^3, unit cohesion of 50 kPa and angle of internal friction of 25°. Compute the factor of safety with respect to cohesion and the critical height of slope. Assume S_n = 0.05.	[03]	CO3	L3

CI **CCI** **HOD**

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