

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

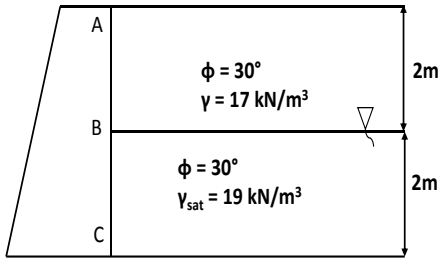
End Semester Examination – Nov/Dec – 2016

Code : **14CE2012**
Sub. Name : **Foundation Engineering**

Semester : **2016-17 ODD**
Duration : **3hrs**
Max. marks : **100**

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Briefly explain about the various geophysical methods with neat sketches.	CO1	15
	b.	Discuss about the factors affecting the sample disturbance.	CO1	5
(OR)				
2.	a.	How would you decided the depth of exploration and the lateral extent of the investigations?	CO1	15
	b.	Describe the open excavation methods of exploration.	CO1	5
3.	a.	Briefly explain about the cone penetration test with neat sketch? How these tests differ from standard penetration test?	CO2	15
	b.	How will you plan a sub soil exploration programme?	CO1	5
(OR)				
4.	a.	Explain in detail about the different types of shallow foundation with neat sketches?	CO4	15
	b.	Discuss about the piston sampler with neat sketch.	CO1	5
5.	a.	Derive the equation to find the bearing capacity of soil for strip footing by Terzaghi's theory under general shear failure? Write the assumptions made in it?	CO2	12
	b.	Determine the net ultimate bearing capacity of the strip footing has 1.5m wide and 1.0m depth for the following cases a) Water table is at the level of the base of footing b) Water table rises to the ground surface c) Water table rises to the 0.5m above the base of footing Water table is 1m below the base of footing.	CO2	8
(OR)				
6.	a.	Describe plate load test. What are its limitations and used?	CO2	10
	b.	Determine the net allowable load of a strip footing 1.5m wide and having the depth of foundation 1.5m. Use Terzaghi's theory and assume local shear failure. Take angle of internal friction = 35° , unit weight of soil = 18kN/m^3 and cohesion = 15kN/m^2 .	CO2	10
7.	a.	How would you determine the earth pressure at rest and location of line of action when (i) No Surcharge load and No water table. (ii) Surcharge load is acting at the surface of the soil (iii) Surcharge load and the presence of water table.	CO4	20
(OR)				
8.	a.	Derive the equation to determine the Rankine's lateral earth pressure coefficient for active and passive with neat sketches, assuming when backfill is not inclined and soil is cohesionless?	CO4	10

	b.	<p>Determine the lateral earth pressure at rest per unit length of the wall shown in figure given below. Determine the location of the resultant earth pressure. Take $K_o = 1 - \sin\phi$, $\gamma_w = 10 \text{ kN/m}^3$.</p> 	CO4	10
		<u>Compulsory:</u>		
9.	a.	<p>Design a strip footing which is placed at a distance of 1.5m and it is subjected to a load intensity of 300 kN/m^2. The thickness of the concrete wall is 450mm..</p>	CO3	20

ALL THE BEST