Enrollment No:	Exam Seat No:
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C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Geotechnical Engineering - II

Subject Code: 4TE06GTE1 Branch: B.Tech (Civil)

Semester: 6 Date: 13/05/2016 Time: 02:30 To 05:30 Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1	a)	Attempt the following questions: Which type of pile is good to use for 'black cotton soil'?	(14) (1)
	b)	What is negative skin friction ?	(1)
	c)	Which type of slope is there in Cliff?	(1)
	d)	Define 'lateral earth pressure'.	(1)
	e)	What is raft foundation ?	(1)
	f)	Write any one method of 'pile driving'.	(1)
	g)	Define 'Friction pile'.	(1)
	h)	Which IS code do we use for 'surface investigation of foundation'?	(1)
	i)	What is unit of soil bearing capacity?	(1)
	j)	Write 'Engineering news formula'.	(1)
	k)	What is Factor of safety ?	(1)
	1)	Write 'static formula'.	(1)
	m)	Which IS code is useful to calculate settlement of foundation?	(1)
	n)	Give example of Finite slope.	(1)
Atten	npt any f	Cour questions from Q-2 to Q-8	
Q-2	(A)	Attempt all questions Explain Dynamic Formulae.	(14) (6)
	(B)	Write a note on 'Geophysical methods'	(8)

Q-3	(A)	Attempt all questions Give Classification of foundation.	(14 ₍₅₎
	(B)	Write a note on 'causes of stress in soil'.	(5)
	(C)	Compute the intensities of active and passive earth pressure at depth of 8 meters in dry cohesionless sand with an angle of internal friction of 30° and unit weight of 18 kN/m ³ . What will be the intensities of active and passive earth pressure if the water level rises to the ground level? Take saturated unit weight of sand as 22 kN/m ³ .	(4)
Q-4	(A)	Attempt all questions Describe 'Cyclic load test and its steps'.	(14 (8)
	(B)	A retaining wall 4m high, has a smooth vertical back. The rockfill has a horizontal surface in level with the top of the wall. There is uniformly distributed surcharged load of 36 kN/m2 intensity over the rockfill. The unit weight of the backfill is 18 kN/m³; its angle of shearing resistance is 30° and cohesion is zero. Determine the magnitude and point of application of active pressure per meter length of the wall.	(6)
Q-5	(A)	Attempt all questions Write a note on 'Rankine's & Coulomb's earth pressure'.	(14)
	(B)	Write note on 'stress distribution diagram'.	(7)
Q-6	(A)	Attempt all questions Write a note on 'Floating Foundation'.	(14 (7)
	(B)	Write the factors affecting the selection of type of foundations.	(7)
Q-7	(A)	Attempt all questions Design of friction pile group to carry a load of 3MN including the weight of the pile cap at the site where the soil is uniform clay to a depth of 25m, underlain by rock. Average unconfined compressive strength of the clay is 115 kN/m². The clay may be assumed to be of normal sensitivity and normally loaded, with liquid limit 70%. A factor of safety of 2.5 is required against shear failure. And for the same compute the settlement of the group assuming the load to be transferred at 2/3 length of pile.	(14 (8)
	(B)	Give differences between strep footing and strip footing.	(4)
Q-8		Which type of slope will you provide in CANAL? Write note on that slope for stability.	(14

