PRN:		Course Code :	CET2709

Final Year **B. Tech** End Semester Examination Winter 2023

Advanced Foundation Engg.

Day and Date: Tuesday, 05/12/2023 Max Marks: **50**

Time : 2.00 to 4.00 pm Duration: **02** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt any two from the following**			
	a)	Explain different types of shallow foundation with neat sketches.	06	L2	1
	b)	A trapezoidal footing is to be produced to support two square column of 30cm and 50cm sides resp. Columns are 6m apart and the SBC of the soil is 400 kN/m^2. The bigger column carries 5000kN and smaller carries 3000kN load. Design a suitable size of the footing so that it does not extend beyond the faces of the columns.	06	L3	1
	c)	Explain floating foundation with neat sketch.	06	L2	1
Q.2		**Attempt any two from the following**			
	a)	Explain classification of pile foundation	06	L2	2
	b)	In a pile group 9 piles where driven into soft clay extending to a large depth. The diameter and length of piles where 30cm and 9m resp. If the cohesion is 45kN/m^2 and center to center distance is 0.9m, determine[5] is the group capacity, if FOS = 2.5 & adhesion factor = 0.75. Take N_c = 9 and mention whether the group fails in a group or individual.	06	L3	2
	c)	Write a note on negative skin friction.	06	L3	2
Q.3		**Attempt the following**			
	a)	Explain different types of raft foundation with figures.	06	L2	3
	b)	Explain in detail I.S. code method of analysis of raft foundation.	07	L2	3
		OR			
	b)	Write a brief design steps for conventional method for design of raft foundation.	07	L2	3
Q.4		**Attempt the following**			
	a)	Define the following: i. Degree of freedom ii. Free and Forced vibrations. iii. Frequency iv. Resonance	06	L2	3
	b)	What are the different types of machine foundations. Explain with figures.	07	L2	3
		OR			
	b)	Determine the co efficient of uniform compression if a vibration test on a block 1m x 1m x 1m gave a resonance frequency of 30Hz in vertical direction. The mass of oscillator is 60kg.	07	L3	3

*****

ESE

SANJAY GHODAWAT UNIVERSITY, KOLHAPUR
SGU Library Copy