Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.ARCH - SEMESTER– VI • EXAMINATION – SUMMER 2015

Subject Code: 1065004 **Date: 08 / 05 / 2015**

Subject Name: Structure – VI **Total Marks: 50**

Time:10:30am to 12:30pm

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use IS - 465: 2000, 875 & 3370 & Steel Table.**

Q.1	**(a)**	Explain the types of combined footing.	**06**
	(b)	Draw the Shear force and Bending moment diagram of rectangular combined footing. Locate the critical section.	**04**
	(c)	Find the depth of a Rectangular footing having a load of 800 kN and 1100 kN column is having space 3m c/c. Each column size = 400 mm x 400 mm. SBC of soil = 280 kN/m^2. Use M_{20} concrete and Fe $_{415}$ grade.	**10**
Q.2	**(a)**	Draw a cantilever retaining wall and the type of force acting on it.	**06**
	(b)	Types of retaining wall. Explain the counter fort retaining wall.	**08**
	(c)	The steps to calculate the retaining wall.	**08**
		OR	
	(c)	Design cantilever retaining wall of height 5.5 m. SBC = 175 kPA. ø = 30 degrees μ = 0.5 Sail = 18 kN/m^3 M_{20} and Fe $_{415}$.	**08**
Q.3		Difference between the following : (Any four) 1. Combine footing and Continuous Footing. 2. Grillage Foundation and Mat Foundation. 3. Grillage Foundation and Raft Foundation. 4. Shallow Foundation and Deep Foundation 5. Simple Footing and Stepped Foundation.	**08**
		OR	
Q.3		Fix the basic dimension and design the top dome of Intze type container elevated water tank to store 6 lakh litre water. If height = 16 m Wind load = 1.5 kN/m^2 SBC of soil = 200 kN/m^2 Use M_{20} and Fe $_{415}$ grade of steel and draw the sketch.	**08**

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