GUJARAT TECHNOLOGICAL UNIVERSITY
B.ARCH. - SEMESTER–VI EXAMINATION – WINTER 2016

Subject Code: 1065004   **Date: 25/10/2016**
Subject Name: Structure – VI
Time: 02:30PM – 04:30PM   **Total Marks: 50**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of IS – 465:2000, 875 & 3370:2009 is Permitted.**

Q.1	**(a)**	Find the Depth of Rectangular Footing having a load of 1545 KN and 1800 KN. Column is having a size of 230 mm by 450 mm. Space between columns 3.5 m c/c. Use M_{20}, Fe_{415}. Grade. SBC 230 Kn/m2	**10**
Q.2	**(a)**	For the Q.1 a now consider that column C1 with load of 1545 is Boundary Column so find the plan dimension with same data considering C1 as Boundary column.	**05**
	(b)	With neat sketch draw all types of force acting on retaining wall.	**05**
		OR	
	(b)	Enlist types of combined footing and explain any one with neat sketch.	**05**
Q.3	**(a)**	Fix the Dimensions of the Retaining wall to retain the earth of height 7 m above lower ground level. SBC of soil is 180Kn/m2. Take ø = 30 degrees μ = 0.5 unit weight of soil is 18 Kn/m^3. Use M20 grade and Fe 415 grade of soil.	**06**
	(b)	Make note on Stability criteria of overturning & stability criteria of sliding of Retaining wall.	**04**
		OR	
	(b)	Draw the bending moment and shear force diagram of combined footing & locate the critical section.	**04**
Q.4	**(a)**	Give the difference between: 1) Footing and Foundation 2) Combine Footing & Continuous Footing 3) Gravity retaining wall & Cantilever retaining wall. 4) Deep Foundation & Shallow Foundation 5) Buttress and Counterfort Retaining wall.	**10**
Q.5	**(a)**	Fix the basic dimension of Intze type container elevated water tank to store 7.2 lakh litre water. If height of staging is = 16 m & Wind load = 1.5 kN/m2 Use M25 and Fe 415grade of steel. Assume all other necessary data if required. Draw Neat sketch of Intze tank.	**10**

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