Seat No.: _____ Enrolment No._____

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. **10**
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

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. **06**
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.

(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: **10**

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.

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 **10**
Use M25 and Fe 415grade of steel.
Assume all other necessary data if required.
Draw Neat sketch of Intze tank.

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