**Reg. No. \_\_\_\_\_\_\_\_**

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination - June 2011**

**Subject Title: REINFORCED CONCRETE STRUCTURES – II Time: 3 hours**

**Subject Code: 09CE217 Maximum Marks: 100**

#### **(Use of IS:456-2000, IRC codes, IS 3370, IS 1893-2002 and design aids (SP16) permitted)**

#### **Answer ALL questions**

**PART – A (10 x 1 = 10 MARKS)**

1. In residential building, the rise may vary between \_\_\_\_\_\_ mm to \_\_\_\_\_\_ mm.

2. The material retained (or) supported by a retaining wall is called \_\_\_\_\_\_.

3. The IS code relevant to water tank is \_\_\_\_\_\_.

4. Forces acting on a Base slab of water tank resting on ground are \_\_\_\_\_\_.

5. For class A and class B loading the Impact factor for R.C Bridges is \_\_\_\_\_\_.

6. The cover required for R.C bridge slab is \_\_\_\_\_\_.

7. What is meant by a bay in structures?

8. What is meant by ductile failure?

9. What is the max positive B.M of the one way slab?

10. Draw the notation of point load in yield line theory.

**PART – B (5 x 3 = 15 MARKS)**

11. What are the forces acting on the various elements of a counterfort retaining wall?

12. Differentiate the pressure acting on the side wall of underground water tank and Water tank resisting on the ground.

13. What are the advantages and disadvantages of continuous bridges?

14. Write about the earthquake resistant design philosophy.

15. What are the characteristic features of yield lines?

**PART – C (5 x 15 = 75 MARKS)**

16. A straight stair in a residential building in supported on wall on one side and stringer beam on the other side. The riser is 150 mm and treads are 250 mm, and horizontal span of the stairs may be taken as 1.2 m. Design the steps. Use M20 concrete and HYSD bars.

(OR)

17. Design a dog-legged stair for a building in which the vertical distance between floors is 3.6 m. the stair hall measures 2.5 m x 5 m. the live load may be taken as 2500 N/m2. Use M20 concrete and HYSD bars.

18. Design a circular tank resting on ground with flexible base for capacity of 400000 litres. The depth of water is to be 4 m, including a free board of 200 mm. Use M 20 concrete and Fe 415 bars.

(OR)

19. Discuss briefly about the design procedure of underground rectangular water tank.

20. Design a RCC slab bridge for the following data: clear span: 6.5 m, Clear width of carriageway: 7.5 m, live load: class AA tracked vehicle, Wearing coat thickness: 80mm

(OR)

21. Describe Courbon’s methods for loading distribution and indicate the limitations.

[P.T.O]

22. Explain in detail about wind load analysis by portal and cantilever method.

(OR)

23. Write short notes on IS code provisions for earthquake effects.

24. Analyse a simply supported square slab by virtual method.

(OR)

25. A square slab of side length 4 m is simply supported at the ends and carries a service load of 3kN/m2. Design the slab. Use M20 concrete and Fe415 steel bars.