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B.E/ B.Tech (Full Time) ARREAR EXAMINATION, APRIL/MAY 2012

CIVIL ENGINEERING

SIXTH SEMESTER

CE 9353 – DESIGN OF REINFORCED CEMENT CONCRETE AND MASONRY STRUCTURES

{Regulation-2008}

Time: 3 hours

Max: 100 marks

Instructions: 1. Answer ALL questions

2. Necessary codes, tables and charts will be supplied

3. Missing data may suitably be assumed

PART – A (10 x 2 = 20 marks)

1. What are the advantages of limit state method of design?
2. Distinguish between load factor and factor of safety.
3. Why is it mandatory to provide minimum shear reinforcement in reinforced concrete beams?
4. State the percentage increase of design bond stress of deformed bars in tension and compression with reference to the respective values of plain bars.
5. Draw a neat sketch showing the reinforcement details in a cantilever slab.
6. Reinforced concrete slabs are generally singly reinforced. Why not doubly reinforced?
7. Why does the code specify limits to the minimum and maximum reinforcements in columns?
8. What is meant by eccentric loading on a footing, and under what circumstances does this occur?
9. List the factors influencing the load carrying capacity of a masonry wall.
10. What are the limiting slenderness ratio values for load bearing masonry walls?

PART – B (5 x 16 = 80 marks)

11. An interior wall of a two storied building is 4.2 m long. The height of each storey is 3 m. The width of room on one side of the wall is 4 m and the other side is 3.2 m. The total load on each floor is 8 kN/m²(including self-weight of slab). Assume the slabs on both sides of the wall as one way. Design the wall at plinth level.
12. (a) A rectangular reinforced concrete beam of size 300 mm wide x 500 mm effective depth is reinforced with 4 nos. of 20 mm diameter bars on tension side. Find out the moment of resistance of beam and also the stresses induced in the materials by working stress method. The materials are M25 concrete and Fe 415 steel.