BE - Civil Sem - VIII (Rev)

Design & Drawing of Reinforced concrete structure.

21-11-2013-DTP-P-8-NK-6

Con. 9360-13. **LJ-13649**

Civil

(Revised Course)

(4 Hours) **[Total Marks : 100**

4 DEC 2013

N.B. : (1) Question No. **1** is **compulsory**.

(2) Solve any **three** questions from **remaining** questions.

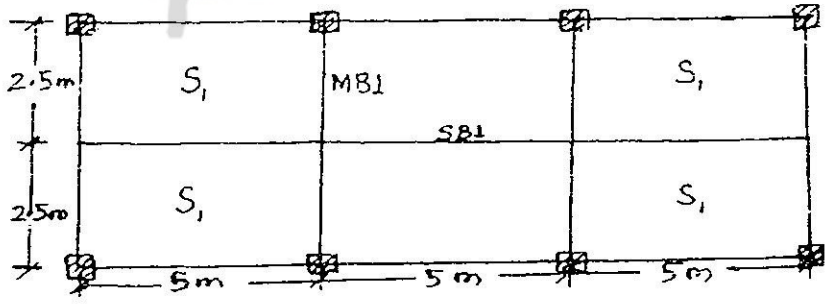
(3) Use of **IS 456** and **IS 3370** is **permitted**.

(4) Use suitable **data if required** and state it **clearly**.

1. Design a rectangular water tank of size 6 m X 3 m in plan and having a height of 2.5 m, resting on firm ground. Design long wall, short wall, top and bottom slabs. Draw the reinforcement details in sections and plan. Adopt M25 grade concrete and Fe 415 grade steel. Use suitable method for design. **40**

OR

For the floor plan as shown below, the slabs are subjected to L.L. of 4 kN/m^2 and floor finish load is 1 kN/m^2. Thickness of walls may be considered as 200 mm and height of walls is 3.5 m. Design Slab S_1, Beams SB_1 and MB_1. Draw reinforcement details for slab and beams. Adopt M20 ad Fe 415 Use LSM. **40**

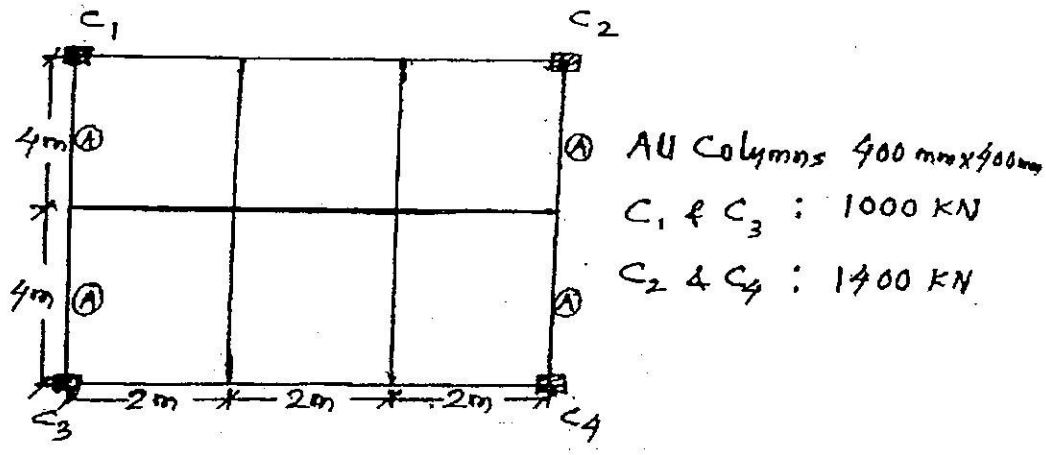


2. For a staircase block of size 4 m X 6 m in plan and floor to floor height of 3.5 m, design doglegged staircase for L.L. of 5 kN/m^2 and floor finish load of 1 kN/m^2. Consider flights from plinth to midlanding and from midlanding to floor. Draw reinforcement details for both flights. Adopt M25 and Fe 415 Use LSM. **20**

3. Design toe slab and stem of a cantilever retaining wall for following data. Height of soil to be retained above G.L. is 3.3 m. SBC of soil at a depth of 1.5 m is 125 kN/m^2. Unit weight of soil is 18 kN/m^3. Coefficient of friction is 0.5. Adopt M20 and Fe 415 Draw reinforcement details. **20**

[TURN OVER

4. **Figure** shows the layout of the columns and loads on columns at foundation level. Design a suitable raft foundation. SBC of soil is 100 kN/m^2. Adopt M20 and Fe 415. Design only slab and beam A. **20**



5. Design a circular water tank for a capacity of 500 KL with rigid base. Adopt M20 and Fe 415. Use approximate method. Draw the reinforcement details. **20**

stupidsid.com