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N – 6516

Reg. No.

Name :



Eighth Semester B.Tech. Degree Examination, May 2022

**08.801 : DESIGN AND DRAWING OF REINFORCED CONCRETE
STRUCTURES (C)**

(2008 scheme)

Time : 4 Hours

Max. Marks : 100

Instruction : (Use of IS : 456-2000, 3370 (Parts I-IV), IRC 6, IRC 21 and design charts permitted)

Answer all questions from Part A and any one question from each module in Part B.

(Assume suitable data if not given)

PART – A

Answer all questions.

1. Discuss the design procedure for domes provided in over head circular water tank.
2. Compare various analysis method of Flat slab design.

(2 × 10 = 20 Marks)

PART – B

Answer any one full question from each module.

Module - 1

3. (a) Design a reinforced concrete cantilever retaining wall to retain earth level with the top of the wall to a height of 5.0 m above ground level. The density of soil at site is 17 kN/m^3 with a safe bearing capacity of 120 kN/m^2 . Assume the angle of shearing resistance of the soil as 30 degrees. Further assume a coefficient of friction between soil and concrete as 0.55. Adopt M20 grade concrete and Fe415 HYSD bars. **20**

P.T.O.



- (b) Draw to suitable scale with all necessary dimensions: Draw plan and sectional elevation.
- (i) Sectional elevation showing reinforcements in stem of wall. 10
- (ii) Plan of retaining wall showing reinforcements. 10

OR

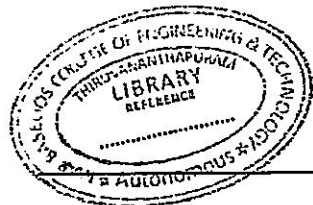
4. (a) Design a water tank having capacity 100 m^3 resting at ground having SBC 200 kN/m^2 , Use M20 concrete and HYSD Fe415 bars. Take unit weight of water as 9.81 kN/m^3 . Angle of repose of soil – 30° . 20
- (b) Draw to suitable scale with all necessary dimensions:
- (i) Sectional elevation showing reinforcements in wall. 10
- (ii) Plan of tank showing reinforcements. 10

Module – 2

5. (a) Design the interior panel of a flat slab $5.0\text{m} \times 6.0\text{m}$ in size, for a super imposed load of 7.75 kN/m^2 . Use M25 concrete and Fe 500 steel. 20
- (b) Draw to suitable scale with all necessary dimensions:
- (i) Sectional showing reinforcements in flat slab. 10
- (ii) Plan of flat slab showing reinforcements. 10

OR

6. (a) Design a solid slab bridge for class A loading for the following data. Clear span 4.5 m ; Clear width of road ways = 7 m ; Average thickness of wearing coat = 80 mm ; Use M20 mix and Fe415 steel. 20
- (b) Draw to suitable scale with all necessary dimensions:
- (i) Plan of slab bridge showing reinforcements. 10
- (ii) Section of slab bridge showing reinforcements. 10



(2 × 40 = 80 Marks)

