

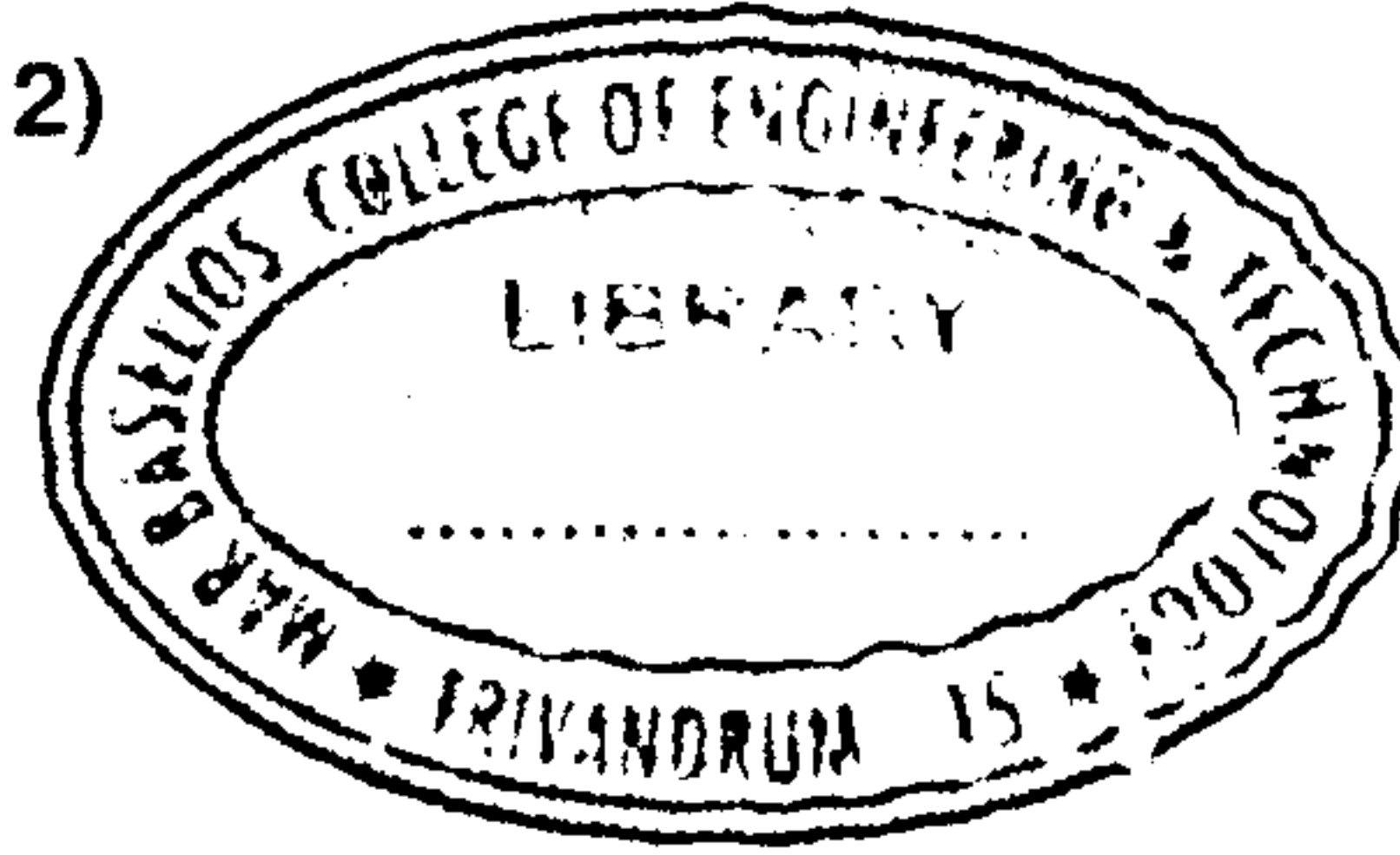


(Pages : 2)

E – 5430

Reg. No. : .....

Name : .....



**Eighth Semester B.Tech. Degree Examination, October 2018  
(2008 Scheme)**

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

Time : 4 Hours

Max. Marks : 100

- Instructions :** 1) Answer *all* questions in Part – A and *two full* questions in Part – B.  
2) Assume suitable data, if *necessary*.  
3) **Use of IS : 456-2000, SP-16, IS : 3370 (I-IV), IRC : 6 and 21 are permitted.**

**PART – A (2×10=20 Marks)**

1. With a neat sketch of a R.C. retaining wall, show the various components involved for the design and express the wall proportions usually followed.
2. Briefly explain the equivalent frame method for the design of flat slabs.

**PART – B (2×40=80 Marks)**

3. a) Design a cantilever retaining wall to retain an earth embankment with a horizontal top 4 m above ground level. Density of earth is  $18.5 \text{ kN/m}^3$ . Angle of internal friction  $(\phi) = 30^\circ$ , SBC of soil =  $190 \text{ kN/m}^2$ . Coefficient of friction between soil and concrete = 0.42. Use M25 Grade concrete and Fe415 grade steel.  
b) Draw the cross section and longitudinal of the retaining wall showing the reinforcement details.

OR

4. a) Design a R.C. circular water tank resting on the ground with fixed base and a spherical dome has a capacity of 3,00,000 litres of water. The depth of storage may be taken as 3.5 m, with suitable free board. Use M30 grade concrete and Fe 415 grade HYSD bars.

P.T.O.



- b) Draw the sectional elevation of the water tank showing the reinforcement details of side wall, base slab and dome slab.
  - c) Draw also the plan of the water tank.
5. For a R.C. T-beam bridge for carrying a two lane traffic, the detailed requirements are given below.
- i) Effective span = 12 meters.
  - ii) Width of carriage way = 7 meters.
  - iii) Live load IRC – class A loading.
  - iv) Thickness of wearing coat = 80 mm.

Design the intermediate 'T' beam (b) draw the cross section and longitudinal section of the 'T' beam showing the reinforcement details.

OR

6. a) Design the interior panel of a flat slab  $6\text{m} \times 7\text{m}$  for a live load of  $5\text{ kN/m}^2$  and finishes  $1\text{ kN/m}^2$ . The slab is supported on the columns of  $450 \times 450\text{ mm}$ . Use M 25 grade concrete and Fe 415 grade steel.
- b) Prepare the panel details of the flat slab showing the reinforcement details.
  - c) Draw the cross section of the slab along the shorter direction and show the reinforcement details.
-