

(Pages : 2)

H – 3260

Reg. No. : .....

Name : .....

**Eighth Semester B.Tech. Degree Examination, November 2019**

**(2008 Scheme)**

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

Time : 4 Hours

Max. Marks : 100

- Note: (i) Part –A is Compulsory and answer two full questions in Part–B  
(ii) Assume necessary data  
(iii) Necessary code book is permitted

**PART – A**

1. Enumerate the limitations in the direct design method of flat slabs. **10**
2. Explain IRC loading standards for Highway bridges. **10**

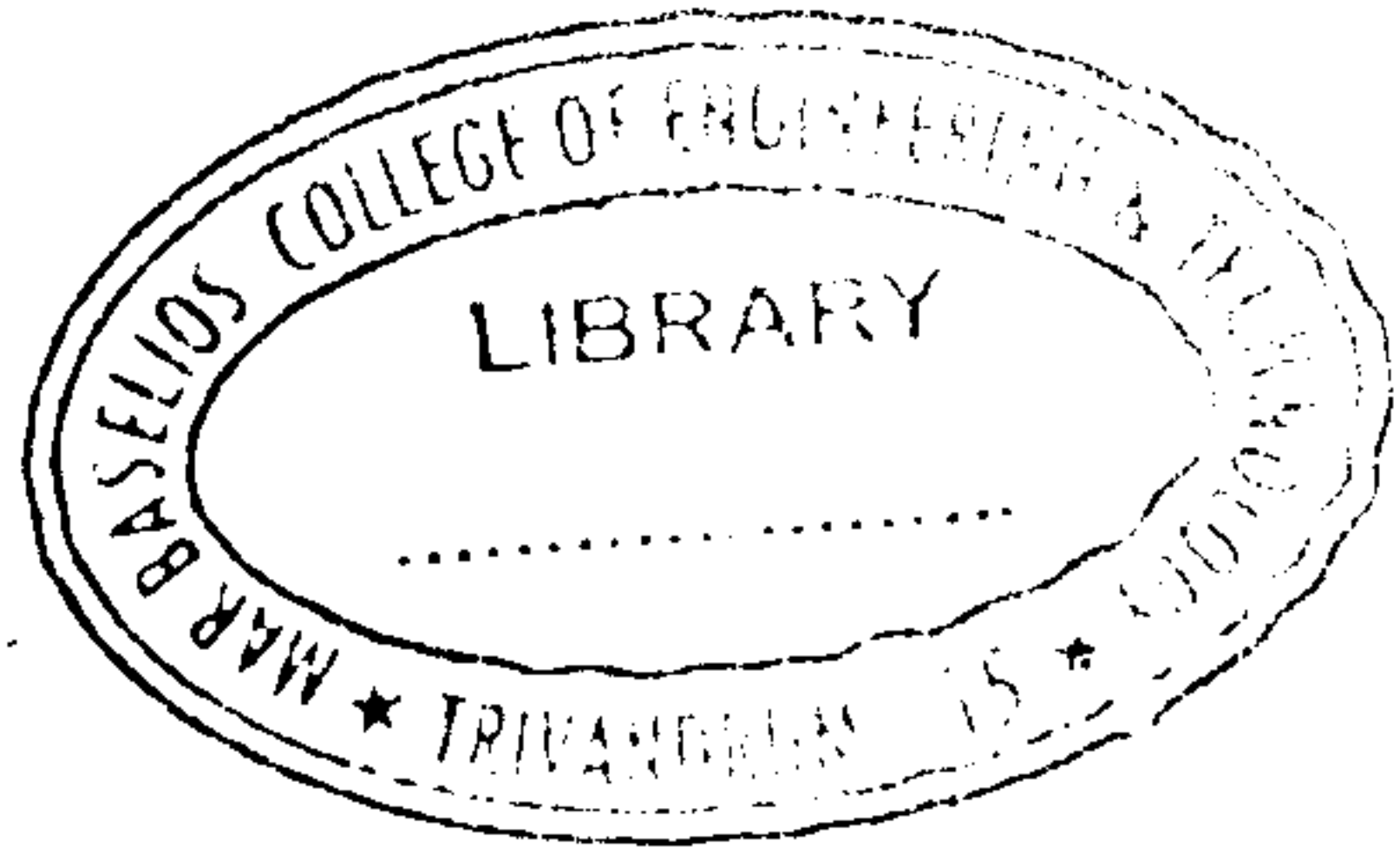
**PART – B**

3. (a) Design a RCC cantilever retaining wall to retain the leveled earth embankment 5m high above the ground level. The unit weight of earth is  $16\text{KN/m}^3$  and its angle of repose is  $30^\circ$  the SBC of soil is  $145\text{kN/m}^2$ . The coefficient of friction between soil and concrete is 0.55. Use  $M_{20}$  grade of concrete and steel grade Fe415. Take the base width as 3 m and toe projections as 1 m. **20**
- (b) Draw the following to a suitable scale:
  - (i) Section of retaining wall showing the details of steel in stem, base slab and shear key.
  - (ii) Longitudinal section for 2 m showing reinforcement of stem, base slab and shear key towards the back fill. **20**

OR

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4. (a) Design a circular water tank 12 m diameter and 4 m height. The tank rests on ground. The wall is fixed to the base slab. Use M25 concrete and Fe250 steel. **20**
- (b) Draw to a suitable scale:
- (i) Section through the tank
- (ii) Base slab reinforcement at top and bottom **20**
5. (a) A flat slab system consists of 5.5 m × 6.5 m panels and is without drop and column head. It carries a live load of 4 kN/m<sup>2</sup> and floor finish of 1 kN/m<sup>2</sup>. It is to be designed with M<sub>20</sub> concrete and Fe 415 steel. The size of columns is 600 mm × 600 mm. Design the interior panel along longer span direction only. **20**
- (b) Draw to a suitable scale:
- (i) Plan of slab
- (ii) Cross section of slab in long direction. **20**
- OR
6. (a) Design the interior slab panel of a R-beam slab bridge, 2.5 m wide between the two main T-beams and 3m long between the cross girders. Carriage way width is 7.50 m and Kerbs of 600mm wide are provided. Use IRC class a loading. Adopt M<sub>25</sub> concrete and Fe 415 steel bars. **20**
- (b) Draw to a suitable scale:
- (i) Plan of deck slab.
- (ii) Cross section of the slab in two direction. **20**
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