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Reg. No. :

Name :

Eighth Semester B.Tech Degree Examination, May 2013
(2008 Scheme)
08.801 : DESIGN AND DRAWING OF REINFORCED CONCRETE
STRUCTURES (C)

Time : 4 Hours

Max. Marks : 100

***Instruction :** Assume suitable data **wherever** necessary. IS 456 – 2000,
IRC 621, IS 3370-Part I to IV are permitted in the examination hall.*

PART – A

- I. a) List out the different types of water tanks. 5
b) What are the codal provisions to account for stresses due to shrinkage and temperature change in water tanks. 5
- II. Briefly explain the following loads in road bridges : 10
i) Braking force
ii) Wind load
iii) Kerb load
iv) Pedestrian load
v) Centrifugal force

PART – B
Module – I

- III. a) A cantilever retaining wall has the following data : 20
i) Height of submerged sloping back fill = 3.5 m
ii) Angle of sloping surcharge = 15°
iii) Unit wt of soil (dry) = 16 kN/m^3
iv) Unit wt of water = 10 kN/m^3
v) Safe bearing capacity = 250 kN/m^2
vi) Coefficient of friction = 0.5

Design the stem toe and heel slab of the retaining wall. Using M20 concrete and Fe 415 steel.

P.T.O.



- b) Draw the following views of the above retaining wall : 20
- i) Cross section
 - ii) Vertical section through stem
 - iii) Horizontal section through heel slab.

OR

- IV. a) Design a rectangular water tank resting on the ground having a size of 8m x 4m x 4m (height). Use M 20 concrete and HYSD steel of yield strength 415 MPa. Assume that the tank walls are free at the top and rigidly fixed to the base slab and adjacent walls. 20
- b) Draw to a suitable scale, the horizontal section at mid height and vertical section through middle of long and short walls. 20

Module – II

- V. a) Design the longitudinal Beam of a single lane T-beam and slab bridge for the following data :
- i) Span of the bridge = 8 m
 - ii) Width of carriage way = 4.2 m
 - iii) Spacing of longitudinal beams = 2.0 m
 - iv) Slab thickness = 25 cm
 - v) Loading class A
 - vi) Width of longitudinal beam = 40 cm
- Design the cross beams also. 20
- b) Draw the longitudinal and cross section of the main and cross beams and also the cross section of the bridge. 20

OR

- VI. a) Design the interior panel of a flat slab floor system of 20 m x 24 m without capitals of panel size 5m x 6m, supported on columns of size 600 mm diameter. The storey height is 3.5 m. Use M 25 concrete and Fe 415 steel. The super imposed load on the floor is 5 kN/m². 20
- b) Draw to suitable scale :
- i) Plan of the flat slab showing top and bottom reinforcements.
 - ii) Cross section through the column strip. 20