Question bank of DCS-II CE 6th Semester

SECTION-A TWO MARKS QUESTIONS

1. When a shear key is provided in a reinforced concrete retaining wall?
2. What are the forces which are considered for the design of dome?
3. Enlist the types of Reinforced concrete water tanks.
4. In what ways, circular water tank is preferred over rectangular water tank?
5. Show plan and elevation of cantilever retaining wall.
6. Explain about intermediate and end moments in continuous beam.
7. What do you mean by uniaxial and biaxial bending?
8. Explain the criteria of L/B ratio for rectangular water tank.
9. Define the stresses of spherical dome.
10. How to calculate the thickness of wall for circular water tank?
11. Write the formula of B.M. of long wall in rectangular water tank.
12. Define continuous beams and curved beams.
13. What are the compression members?
14. Enlist the types of compression members.
15. How to calculate the pull in rectangular water tanks?
16. Enlist the codal provision used for water tanks.
17. Difference between WSM and LSM.
18. Assumptions of axially loaded columns.
19. Define slenderness ratio.
20. Write formulae to calculate the ultimate load for columns..

SECTION-B 10 MARKS QUESTIONS

1. Why counterforts are provided in a retaining wall? Draw a counterfort retaining wall and explain its components.

2. Write the assumptions of design of continuous beams.

3. Write down the design steps for circular water tank.

4. A short RCC column 400mm*400mm is provided with 8 bars of 16mm diameter. If the effective length of the column is 2.25m, find the ultimate load for the column. Use M20 concrete and Fe415 steel.

5. Explain the design considerations for design of dome.

6. A spherical dome of a water tank of span 6m has a rise of 1.20m. It carries an all- inclusive distribute load of 600N/m^2 and a load of 800N at the crown. Design the dome. Use M20 concrete and Fe415 steel.

SECTION-C 10 MARKS QUESTIONS

1.Design a circular water tank resting on ground to the following particulars:
Diameter of tank=3m., depth of water= 2.5m.
Density of water=9.81KN/m^3. Use 20 concrete and Fe 415 steel.

2. A rectangular water tank 4.5m*3.5m*3m deep rests on ground. Design the rectangular water tank. Use M20 concrete and Fe 415 steel.

3. Design a rectangular water tank resting on ground having base area of 6m*4m. The height of water tank is3.75m and keep a free board of 0.15m. Use M20 concrete and Fe 415 steel. Assume appropriate data.
4. Design a cantilever retaining wall to the following requirement.
Overall height of the wall = 4m
Superimposed load from the traffic = 15KN/m2
Angle of repose = 30 degree
Width of the base slab = 4m
Toe projection = 650 mm
Use M20 grade of concrete and Fy500 steel.

5. The circular water tank has an internal diameter is 10m. The maximum depth of the tank is 5m. The wall of the tank is restrained at the base. The tank is rest on the ground. Design a water tank. Assume any missing data.

6. A cantilever retaining wall has to retain earth 3.5 m high above ground level. The density of earth is 17 KN/m3 and its angle of repose is 300. The earth is horizontal at top. The safe bearing capacity of soil is 180 KN/m2 and coefficient of friction between soil and concrete is 0.55.

7. Design a circular water tank with flexible base for a capacity of 450 KL. The depth of water is 4.5 m. Allow suitable free board.

8. Explain the design principles of cantilever retaining wall.