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Total No. of Questions : 09] **Paper ID [CE310]** [Total No. of Pages : 02

B.Tech. (Semester - 6th)

DESIGN OF CONCRETE STRUCTURES - II (CE - 310)

Time : 03 Hours   Maximum Marks : 60

Instruction to Candidates:

1) Section - A is **compulsory.**

2) Attempt any **Four** questions from Section - B.

3) Attempt any **Two** questions from Section - C.

Section - A

Q1)   *(10 × 2 = 20)*

a) Differentiate between Isolated Footings and Combined Footings.

b) How the depth of foundation is determined.

c) On what factors design of footings depends.

d) How the bending moment and Torsion differs in two support and three support circular beam.

e) Differentiate between spherical and Conical domes.

f) What are the edge beams in cylindrical shells.

g) Describe various types of overhead service reservoirs.

h) Draw a sketch of counter part retaining walls.

i) Limit state method is advantageous over Ultimate strength design, comment.

j) Differentiate between active earth pressure and passive earth pressure.

Section - B

                                                     (4 × 5 = 20)

Q2) Differentiate between Square, Circular and Rectangular footings from design point of view.

Q3) Describe general design requirements of water tanks.

Q4) What are the various types of retaining walls, describe.

Q5) Design a Semi - circular beam supported on three equally spaced columns. The centres of columns are on a circular curve of diameter 8 m. The supper imposed load on beam is 16 kN/m.

Q6) Design a vertical stem of a T–shaped retainning wall for a height of 2.5 m. above the ground level. The angle of repose of earth is $29°$ and its density is 17 kN/m³. The safe bearing capacity is 100 kN/m².

Section - C

$(2 \times 10 = 20)$

Q7) Describe the design steps for the Intz tanks.

Q8) Design a spherical dome roof for a hall of 10 m in diameter and rise 4 m. The line load and finishes may be taken as 1000 kN/m² and 300 kN/m² respectively.

Q9) A reinforced concrete wall 150 mm thick is to carry a load of 4,00,000 N/m run of wall. Design the footing if the bearing capacity of the soil is 20 t/m².

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