56241.A

Name:
Reg.No.

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, JUNE 2009

CE.04.804(A) Advanced Structural Design - II

Time: Three hours **Maximum: 100 Marks**

Answer All questions

Part A **(8 X 5 = 40)**

1. Discuss about anchorages.
2. What is meant by prestressed concrete and explain its two methods.
3. Classify the shells.
4. Draw the different types of folded plates.
5. Write short notes on membrane theory.
6. Discuss about the shear wall.
7. Draw a cylindrical shell and indicate its components.
8. What is meant by bending theory and explain it?

Part B **(4 X 15 = 60)**

9. Design of hyperbolic parabolic shell of the tilted umbrella type of length 60m, width of 12.19 m, depth of 1.828 m, thickness of 0.0635 m, live load of 0.06803 kN/m^2 of shell surface.

(OR)

10. Derive levy and Naviers solution of plates.

11. Derive membrane theory of the parabolic conoid type 1.

(OR)

12. Derive differential equations of laterally loaded and thin rectangular plates.

(Contd...2)

13. a) Write the assumptions of folded plates. ——

b) Write short notes on

i) Plate and slab action

ii) Resolution of ridge loads

iii) Edge shear

iv) Stress distribution.

(OR)

14. a) Classify the shells and discuss.

b) Discuss about structural behavior of thin shells.

15. Design the single short cylindrical shell without edge beams of span 10.668 m, radius of 22.402 m, thickness of 0.2286 m, semicentral angle of $37^0 48'$ and live load of 0.06803 kN/m^2.

(OR)

16. Analysis of a long interior cylindrical shell with prestressed edge beams with shell geometry of span 49.911 m, radius of 8.0391 m, thickness of 0.0762 m, semi central angle of 39.5^0, edge beam of depth 2.20 m and width 0.1 m and live load of 0.057 kN/m^2

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