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Question Paper Code: 22064

M.E. DEGREE EXAMINATION, APRIL 2015.

Second Semester

Structural Engineering

01PSE204 - PRECAST AND PREFABRICATED STRUCTURES

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

(Use IS codes are permitted)

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define modular coordination.
2. List the advantages & disadvantages of prefabricated systems.
3. Write briefly about types of wall panels.
4. Write a note on expansion joint.
5. Sketch any one of typical beam to column connection.
6. Give the maximum allowable deflection limit in roof slab under short term loads.
7. Write a short note on hollow core floor slab.
8. Define sandwich panels.
9. Discuss about different types of structural joints in precast concrete construction.
10. Discuss the types of prefabrication components as per IS codes.

PART - B (5 x 14 = 70 Marks)

11. (a) Discuss the concept and importance of disunity of structures with neat sketches. (14)

Or

(b) Explain in detail about IS codal provisions for prefabricated structures. (14)

12. (a) Write a brief note on framed buildings with partial and curtain walls with neat sketches. (14)

Or

(b) Explain in detail about long wall and cross wall large panel building. (14)

13. (a) Explain the design basis and the manufacture of solid and hollow core slabs. (14)

Or

(b) Explain the types of joints and reinforcement details in precast floor slabs with neat sketches. (14)

14. (a) Explain in detail the importance of precast wall in transfer of gravity and lateral loads. (14)

Or

(b) Write the steps involved in analysis and design of shear walls. (14)

15. (a) Explain the components of single storey industrial building with RCC roof truss and crane gantry systems. (14)

Or

(b) Write a brief note on design requirements, prefabrication and erection of hyper prefabricated shells. (14)

PART - C (1 x 10 = 10 Marks)

16. (a) Explain with neat sketches (i) column to column connection & (ii) beam to beam connection. (10)

Or

(b) Write in detail about transportation & installation of prefabricated building system and its elements. (10)