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Question Paper Code: 49264

M.E. DEGREE EXAMINATION, MAY 2015.

Elective

Structural Engineering

14PSE515 – PRECAST AND PREFABRICATED STRUCTURES

(Charts and Tables are permitted)

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (5 x 1 = 5 Marks)

- Prefabricated structures are more suitable _____
 - For cost effective
 - For resist heavy loads
 - For reduce the project time duration
 - For complicated structures
- Type of connection is used for substructure _____
 - Beam to Column
 - Column to Column
 - Foundation to Column
 - Beam to Beam
- The prefabricated slabs have standardized dimensions of _____
 - 0.5 m x 3.0 m
 - 1.0 m x 3.0 m
 - 1.2 m x 3.0 m
 - None of these
- Load bearing walls are used to resist
 - Wind load
 - Live load
 - Dead load
 - All of these
- _____ Purlins spans are normally used in industrial buildings.
 - 5 m to 10 m
 - 3 m to 10 m
 - 5 m to 6 m
 - 10 m to 15 m

PART - B (5 x 3 = 15 Marks)

- Distinguish between site prefabrication and plant prefabrication.
- How will you make a rigid joint in connecting a precast column and beam?

8. Give the classification of floor slabs.
9. What is shear wall?
10. What are the components of single storey industrial shed?

PART - C (5 x 16 = 80 Marks)

11. (a) (i) Explain in detail about IS codal provision for prefabricated structures. (8)
(ii) Explain in detail with sketches the prefabrication system and their relative merits and field of application. (8)

Or

- (b) (i) Explain in detail the need of modular coordination. (8)
(ii) Explain standardization of prefabricated structures in detail with sketches. (8)
12. (a) (i) Explain one way and two way prefabricated slabs. (8)
(ii) Explain about framed buildings with partial and curtain walls. (8)

Or

- (b) Explain with neat sketch about beam to column and column to column connection? (16)
13. (a) Write down the design procedure for cored and panel types of floor slabs. (16)

Or

- (b) What are the recommendations for the design of staircase slab? (16)
14. (a) Explain in detail about load transfer in wall panels. (16)

Or

- (b) What are the steps involved in the design of shear walls. (16)
15. (a) Explain with neat sketch about
(i) R.C. Roof Trusses (8)
(ii) Roof panel (8)

Or

- (b) Explain with neat sketch about
(i) Folded plates (8)
(ii) Hyper prefabricated shells (8)