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Question Paper Code : X86180

M.E./M.Tech. DEGREE EXAMINATIONS – NOV / DEC 2020

First/Third Semester

Structural Engineering

ST5002 PREFABRICATED STRUCTURES

(Regulation 2017)

Time: 3 Hours

Answer ALL Questions

Max. Marks: 100

PART- A (10 x 2 = 20 Marks)

1. Give the importance of disuniting of prefabricated structures.
2. What are the precautions taken during transportation of precast elements?
3. Differentiate between long wall and cross wall large panel buildings.
4. Give the functions of a connection.
5. List the different types of joints in floors.
6. What are the advantages of hollow core slabs?
7. Define a shear wall.
8. State the functions of joints sealants.
9. What are the elements of a folded plate?
10. Give the design principles of wind bracing.

PART- B (5 x 13 = 65 Marks)

11. a) Explain with sketches the planning and layout of a prefabrication plant. (13)

OR

- b) Discuss in detail the different stages of loading in prefabricated structures. (13)
12. a) What are various types of walls used in prefabricated structures? Explain in detail the functions of the various types of walls. (13)

- b) Describe in detail with sketches the different types of beam to column connections used in framed precast reinforced concrete building. (13)
13. a) Explain in detail the deflection control due to short term and long term loads. (13)

OR

- b) Describe in detail with sketches the different types of slabs used in precast construction. (13)
14. a) Explain the different types of sealants used in joints.

OR

- b) i) Describe in detail the pattern of load transfer from floor to wall panels. (7)
- ii) What are the factors affecting the stability of wall panels, explain in detail. (6)
15. a) Describe in detail with sketches the different types of precast roof trusses used in industrial building.

OR

- b) Write short notes on (i) Cylindrical shells (6)
- (ii) Hyper prefabricated shells (7)

PART- C (1 x 15 = 15 Marks)

16. a) Discuss in detail the principles of prefabricated design. (15)

OR

- b) Describe in detail the approximate design of shear walls. (15)
