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Question Paper Code: 52604

M.E. DEGREE EXAMINATION, MAY 2017

Elective

Structural Engineering

15PSE515 - PRECAST AND PREFABRICATED STRUCTURES

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Arched Structures are normally used for bridge in span more than
 - (a) 15m to 25m
 - (b) 10m to 20m
 - (c) 20 m to 25m
 - (d) 10m to 25m
2. Partial prefabrication system is used in
 - (a) Roofing
 - (b) Flooring
 - (c) Roofing and Flooring
 - (d) None of these
3. Cross wall system used to resist
 - (a) Gravity loads
 - (b) lateral loads
 - (c) Both (a) and (b)
 - (d) None of these
4. In the Lift-slab system, the load-bearing structure consists of
 - (a) Column and Slab
 - (b) Beam and Slab
 - (c) Both (a) and (b)
 - (d) None of these
5. The Main advantages of hollow floor are the reduction of
 - (a) vertical loads
 - (b) dead load
 - (c) live loads
 - (d) horizontal loads

6. Light of concrete has a _____ thermal conductivity than compare to ordinary concrete.
- (a) Higher (b) lower
(c) Both (a) and (b) (d) Zero
7. The Rigid Joints bears
- (a) Tensile force (b) Compressive force
(c) Shear force (d) All the above
8. In partial prefabrication, the number of joints
- (a) Increase (b) Decrease
(c) Both (a) and (b) (d) Zero
9. The capacity of Gantry Cranes is
- (a) 4T (b) 5T (c) 6T (d) 7T
10. Roof panels of lightweight precast-concrete panels typically span_____ between supports.
- (a) 5 to 10 ft (b) 10 to 15 ft
(c) 5 to 15 ft (d) 5 to 20 ft

PART B - (5 x 2 = 10 Marks)

11. Distinguish between site prefabrication and plant prefabrication.
12. List out different types of connections.
13. Give the classification of floor slabs.
14. What is shear wall?
15. Define precast battens.

PART C - (5 x 16 = 80 Marks)

16. (a) Discuss in detail the various equipment used in the erection of prefabricated system. (16)
- Or
- (b) Explain in detail about IS codal provision for prefabricated structures. (16)
17. (a) With a neat sketch, explain an expansion joint used in precast construction. (16)

Or

(b) Explain framed buildings with partial and curtain walls. (16)

18. (a) What are the recommendations for the design of staircase slab? (16)

Or

(b) Explain the methods of construction of floor slabs. (16)

19. (a) Write in detail about connections and joints for wall panels. (16)

Or

(b) Explain in detail about in transport and erection of wall panels. (16)

20. (a) Briefly explain about the item of work done in erection. (16)

Or

(b) Write in detail about design criteria for precast L panels. (16)
