

Reg. No. :

Question Paper Code : 71533

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Eighth Semester

Civil Engineering

CE 6016 – PREFABRICATED STRUCTURES

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term “standardization” and mention its advantages and uses in prefabrication (any two).
2. What are the equipments generally used for hoisting of prefabricated components?
3. State the functions of a shear wall.
4. What are the loads acting on the wall panel?
5. Write the advantages and disadvantages of disuniting of structures.
6. What do you mean by joint flexibility?
7. Differentiate the joints and connections in a precast structure with a clear sketch.
8. State whether the precast structure needs an expansion joint.
9. List any three possible causes of abnormal loads acting on the prefabricated buildings.
10. What are the methods generally used to avoid the disproportionate collapse in a building.

PART B — (5 × 16 = 80 marks)

11. (a) Explain in detail about the concept of modular coordination and state its significance in prefabricated construction.

Or

- (b) Discuss the various systems of prefabrication used in prefabricated structures.

12. (a) (i) What are the forces acting on the shear wall? (4)
(ii) Classify the different types of shear wall. (4)
(iii) Enumerate the importance and purpose of constructing the shear wall in a building. (8)

Or

- (b) (i) What is Large Panel construction and state its advantages? (4)
(ii) Discuss the prefabricated roofing and flooring components suitable for low cost housing projects. (12)

13. (a) Elaborate the steps involved in the process of disunity of prefabricated structures along with its merits and demerits.

Or

- (b) Write in detail about the design of cross section based on efficiency of the materials.

14. (a) (i) State the essential requirement of ideal structural joint. (4)
(ii) Discuss the salient points to be considered while designing a joint in the prefabricated construction process. (6)
(iii) Explain the different types of joints used in precast construction. (6)

Or

- (b) Explain in detail about the column to foundation connection with a clear sketch.

15. (a) Explain the progressive collapse with a case study and mention the conditions for avoiding the progressive collapse.

Or

- (b) Explain the procedure for calculating equivalent design loads when the structure is subjected to earthquake loading based on Indian codal provisions.