

Printed Pages : 3



ECE-041

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 100756

Roll No.

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B. Tech.

(SEM. VII) (ODD SEM.) THEORY

EXAMINATION, 2014-15

**PRECAST AND MODULAR CONSTRUCTION
PRACTICES**

Time : 3 Hours]

[Total Marks : 100

- Note :**
- (1) Attempt all the questions.
 - (2) All questions carry equal marks.

1 Attempt any FOUR parts of the following : **5×4=20**

- (a) Explain various advantages of prestressing along with their types.
- (b) What are the benefits of a precast concrete house ?
- (c) What is the difference between precast concrete construction and the traditional construction ?
- (d) Write an essay on the "future of precast concrete in low rise housing".
- (e) Enlist and discuss the various prefabricated building components. Also discuss their relative advantages.
- (f) Discuss the design steps of precast components along with their detailing.

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[Contd...

- 2 Attempt any FOUR parts of the following : $5 \times 4 = 20$
- (a) How will you design the quality joints in prefabricated structures ?
 - (b) What is the purpose behind designing of structural connections ? Discuss in detail.
 - (c) Explain strut and tie method for connections zones.
 - (d) Just explain the flow of forces in connections.
 - (e) What are the various advantages of using ready mix concrete over site mix concrete ? Discuss in detail.
 - (f) Discuss the production procedure of ready mix concrete. Also discuss in brief the precautions have been taken during its production.
- 3 Attempt any TWO parts of the following : $10 \times 2 = 20$
- (a) What kind of instrument we use in precast prefabricated structures ? Explain any one with help of its neat sketch.
 - (b) Which materials we can use for the formwork ? Explain each with their relative merits and demerits.
 - (c) Write in detail, the design procedure of formwork. Also write a short note on the reusability of formwork.
- 4 Attempt any TWO parts of the following : $10 \times 2 = 20$
- (a) What do you mean by the modular construction ? Also discuss the relative advantages of modular construction.
 - (b) What is 'Fibonacci number' ? How these numbers are useful in the modular construction practices ? Also discuss the closed form solution.
 - (c) Discuss any two reliable proportioning techniques used in modular construction practices along with their relative advantages and disadvantages.

5 Attempt any TWO parts of the following : **10×2=20**

- (a) Discuss in detail, 'the concept of modular coordination'. How will you use this concept in the modular construction ?
 - (b) How will you use the various laminated materials as a low - impact building materials ? Discuss any two of them along with their relative advantages and disadvantages.
 - (c) Where and why, you will use the system building method ? Discuss in detail. How this method is compatible in the construction work ?
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