

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering - SEMESTER - VII EXAMINATION - SUMMER 2025

Subject Code: 3170622

Date: 27-05-2025

Subject Name: Precast Construction

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	Marks
Q.1 (a) What are the advantages and disadvantages of Precast construction?	03
(b) Enlist the element of precast skeletal structure and explain any one in brief.	04
(c) Give difference between precast and cast-in-situ construction with suitable examples. Discuss the characteristics of construction projects where precast construction is more suitable.	07
Q.2 (a) Explain the necessity of prefabrication in India.	03
(b) Write short note on Modular Coordination.	04
(c) Explain the steps adopted for installation of precast columns.	07
OR	
(c) Explain accelerated hardening in detail.	07
Q.3 (a) Which precaution may provide to adequate structural integrity?	03
(b) Discuss types of precast concrete walls.	04
(c) Write three stages of design of column and explain any one in detail.	07
OR	
(a) Explain Advantage and disadvantage of cross wall construction.	03
(b) Draw the plant process of precast unit.	04
(c) Enlist and discuss the different types of joint as per location in precast construction.	07
Q.4 (a) Briefly discuss erection stresses.	03
(b) Explain automation in manufacturing of precast elements.	04
(c) Enlist methods of analysis of Precast structures. Explain any one method in details as per IS Code.	07
OR	
(a) Enlist different types of precast slab with neat sketches.	03
(b) Explain step-wise procedure to erect precast truss with neat sketches.	04
(c) Explain the equivalent design loads for considering abnormal effects.	07

- Q.5 (a)** Explain floor unit in brief. **03**
- (b)** Differentiate between Composite & Non composite reinforced concrete beams. **04**
- (c)** Explain the working procedure of vacuum lifting pads for prefabricated elements. **07**

OR

- (a)** Explain various factors affecting choice of production set up for precast construction. **03**
- (b)** When a progressive collapse does occur? Why is it very critical to avoid progressive collapse of structures? **04**
- (c)** Write short note on various loads and load path on precast concrete. **07**
