

Enrolment No./Seat No \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024**

**Subject Code:2160601**

**Date:15-05-2024**

**Subject Name:Advanced Construction and Equipments**

**Time:10:30 AM TO 01:00 PM**

**Total Marks:70**

**Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

	<b>MARKS</b>
<b>Q.1</b> (a) Differentiate cast-in-situ and precast pile.	<b>03</b>
(b) Write a brief note on power shovel.	<b>04</b>
(c) Describe sinking process of pneumatic caisson in detail with sketch.	<b>07</b>
<b>Q.2</b> (a) Give the difference between caisson and cofferdam.	<b>03</b>
(b) Write a brief note on under reamed pile.	<b>04</b>
(c) Enlist various methods of ground water removal and explain any one method in detail with necessary sketch.	<b>07</b>
<b>OR</b>	
(c) Explain raymond pile and simplex pile in detail with sketches.	<b>07</b>
<b>Q.3</b> (a) Discuss about the important points to be considered while construction of spatial structure.	<b>03</b>
(b) Write a note on economic height of cofferdam.	<b>04</b>
(c) Explain slip formwork in detail with sketch.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Give brief idea of tall structure.	<b>03</b>
(b) Explain the provisions to be made in cofferdam to prevent leakages.	<b>04</b>
(c) Explain the necessity of demolition. Enlist and explain the methods of demolition	<b>07</b>
<b>Q.4</b> (a) Discuss the causes of failure of formwork	<b>03</b>
(b) Explain draw bar pull.	<b>04</b>
(c) Enlist and explain general principles of construction of earthquake resistant buildings.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Discuss the importance of air compressor.	<b>03</b>
(b) Explain coefficient of traction.	<b>04</b>
(c) Define formwork. Discuss the formwork of RCC Beam and wall with neat sketches.	<b>07</b>
<b>Q.5</b> (a) Define: 1) Depreciation b) Obsolescence c) Salvage value	<b>03</b>
(b) Write a brief note on concrete batch mix plant.	<b>04</b>
(c) Enlist various lifting equipment. Explain tower crane in detail with necessary sketch.	<b>07</b>

**OR**

- Q.5** (a) Define: a) Owning Cost b) Downtime cost c) Rim pull **03**  
(b) Discuss advantages and disadvantages of scraper. **04**  
(c) Write a detailed note on belt conveyer system. **07**

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