

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

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code:2160601

Date:20-05-2025

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.

	MARKS
<b>Q.1</b> (a) Differentiate between end bearing pile and friction pile.	<b>03</b>
(b) What are the factors to be considered , while making choice between cofferdam and caisson	<b>04</b>
(c) Describe giving sketch, precast concrete pile including process of casting with their merits and demerits	<b>07</b>
<b>Q.2</b> (a) What is meant by Diaphragm wall? Where it is used?	<b>03</b>
(b) Discuss the main factors affecting selection of type of piles.	<b>04</b>
(c) What is caisson sickness? What are its causes? What are the precautions to be taken to avoid caisson diseases?	<b>07</b>
<b>OR</b>	
(c) Describe with sketch, the procedure of pumping from bored wells for dewatering.	<b>07</b>
<b>Q.3</b> (a) What is Tall structure? What are the materials used for it?	<b>03</b>
(b) Explain the design feature of cofferdams.	<b>04</b>
(c) Describe in detail the various methods of demolition	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Discuss the contribution and importance of construction equipment in construction industry	<b>03</b>
(b) Describe the procedure of safe demolition of structures?	<b>04</b>
(c) Explain with neat sketch, the formwork for RCC wall. What are the points to be remembered in case of formwork for walls?	<b>07</b>
<b>Q.4</b> (a) What are the purposes of a bulldozer on the construction work?	<b>03</b>
(b) Define and explain the following: (i) Drawbar pull (ii) Coefficient of traction (iii) Rim pull (iii) Rolling resistance	<b>04</b>
(c) Write notes on: (i) Crawler Tractors (ii) Wheel Tractors	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) What are the uses of scrapers? Classify the scrapers.	<b>03</b>
(b) Explain the effect of pressure and temperature on the performance of I.C. Engines.	<b>04</b>
(c) What are the uses of power shovels? Describe basic parts and operation giving neat sketch.	<b>07</b>
<b>Q.5</b> (a) Describe main feature and working principle of Jaw crusher.	<b>03</b>
(b) What are the factors affecting the output of a dragline.	<b>04</b>

- (c) What is the importance of Gantry cranes? Describe its basic parts and operation giving neat sketch. What is its advantage? **07**

**OR**

- Q.5** (a) Define : (i) Drill bits (ii) Jack hammers (iii) Diamond drill **03**  
(b) Write note on : Rotary compressors **04**  
(c) Describe basic parts, operation and limitation of bucket conveyors, with neat sketch. **07**

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