

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER–VI EXAMINATION – SUMMER 2025****Subject Code: 3160617****Date:30-05-2025****Subject Name: Construction Equipment and Automation****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
Q.1	(a) State the need of equipment in construction project.	03
	(b) Classify different type of excavating equipment and explain any one with sketch.	04
	(c) Sketch the concrete batching plant and explain the how it would be functioning.	07
Q.2	(a) State advantages of automation in construction.	03
	(b) Explain the Building Information Modeling up to 7D.	04
	(c) Explain automation used in construction of canal lining.	07
	OR	
	(c) Explain automation is beneficial for construction of Highway.	07
Q.3	(a) Explain the use of robot for demolition of structure.	03
	(b) Compare photogrammetry with drone and without drone.	04
	(c) Discuss in brief the factors affecting the selection of construction equipments.	07
	OR	
Q.3	(a) Describe the sentence "Robotics could change the future of construction"	03
	(b) Demonstrate the future scopes of robotics in construction.	04
	(c) Enlist various types of cranes used in construction work and explain anyone in detail with figure.	07
Q.4	(a) Explain the 3D printing with its parts and object.	03
	(b) Explain the robots use for construction activities like Structural steel cutting,	04
	(c) Argue the benefits of robots in construction industry with respect to time, cost, quality, safety."	07
	OR	
Q.4	(a) Discuss how 3D printing is useful to construct bridges and roads.	03
	(b) How the robots used for construction activities like Brick laying.	04
	(c) Judge the sentence "3D Scanner for surveying and project management is necessary."	07
Q.5	(a) Describe the quantity survey carried out by drones	03
	(b) Identify the sensor used for monitoring the structural health of building.	04
	(c) Compare virtual reality vs. augmented reality with respect to civil engineering application	07
	OR	
Q.5	(a) Discuss the method used to carried out quantity survey by drones.	03
	(b) Explain the marine survey method used by drones.	04
	(c) Examine that the virtual reality is useful for quality inspection on site.	07
