Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2023

Subject Code:3160617   **Date:14-07-2023**
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.**

Q.1	**(a)**	Define: Scrap values, Obsolescence and Depreciation	**03**
	(b)	List the different construction equipment.	**04**
	(c)	What are the uses of power shovels? Describe basic parts and operation, giving with neat sketch.	**07**
Q.2	**(a)**	Give classification of construction equipment.	**03**
	(b)	What are the importance of construction equipment in construction industry?	**04**
	(c)	What are the different types of mobile cranes? Describe any two mobile cranes with sketch.	**07**
		OR	
	(c)	Discuss in detail the factors affecting the selection of construction equipment.	**07**
Q.3	**(a)**	What are the benefits of automation?	**03**
	(b)	Explain the advantages and disadvantages of automation.	**04**
	(c)	What is 3D printing? Explain advantages of 3D printing.	**07**
		OR	
Q.3	**(a)**	Define automation. Write need of automation.	**03**
	(b)	Write short note on automation in highway.	**04**
	(c)	Explain working of 3D scanner for surveying.	**07**
Q.4	**(a)**	What is robotic demolition in construction?	**03**
	(b)	Write the uses of robots in construction industry.	**04**
	(c)	Explain the automation in concrete technology.	**07**
		OR	
Q.4	**(a)**	How robotics could change the future of construction?	**03**
	(b)	Explain benefits of robots in construction industry.	**04**
	(c)	Explain in detail the canal hydraulic properties for automation.	**07**
Q.5	**(a)**	Give the full form of DRONE. Explain drone mapping.	**03**
	(b)	Explain real time data and structural health monitoring survey using drones.	**04**
	(c)	Explain Building Information Modelling.	**07**
		OR	
Q.5	**(a)**	What are the uses of virtual reality technologies?	**03**
	(b)	Explain the concept of virtual reality technology.	**04**
	(c)	What is photogrammetry? Explain advantages of using drone in photogrammetry?	**07**

****