

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- VI (NEW) EXAMINATION – WINTER 2021

Subject Code:3160617

Date:04/12/2021

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) Discuss the contribution of construction equipments in construction industry. **03**

(b) Classify the construction equipments. **04**

(c) Discuss in brief the factors affecting the selection of construction equipments. **07**

Q.2 (a) Write the importance of construction equipments in construction industry. **03**

(b) What are the function of a tractors what are the various type of tractor. **04**

(c) Which are the canal Hydraulic properties for automation? Explain in detail. **07**

OR

(c) Explain in detail how automation is working in concrete technology? **07**

Q.3 (a) What is building automation system. **03**

(b) What is SCADA system? **04**

(c) What are the advantages and disadvantages of Automation? **07**

OR

Q.3 (a) How are Robots used in Construction? **03**

(b) What is basics of Robotics? **04**

(c) Explain in detail the uses of robots in construction industry. **07**

Q.4 (a) Which sensor is used for monitoring the structural health of building and bridges? **03**

(b) How 3d –printing Robot is working? **04**

(c) How does a drone survey work? **07**

OR

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|------------|----------------------------------------------------------------------------|-----------|
| Q.4 | (a) What is drone mapping? | 03 |
| | (b) How Robotics could change the future of construction? | 04 |
| | (c) What is the full form of DRONE? What are drones useful for? | 07 |
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| Q.5 | (a) Write about the obstacles in construction Automation. | 03 |
| | (b) What is concept of Virtual reality? | 04 |
| | (c) What are the uses and benefits of Virtual reality technologies? | 07 |

OR

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|------------|-----------------------------------------------------------------------------|-----------|
| Q.5 | (a) What is robotic demolition in construction? | 03 |
| | (b) Write about applications of Automated construction and robotics. | 04 |
| | (c) Write shortnote on Building Information Modelling. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160617****Date:10/06/2022****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) Define special equipment with example.	03
	(b) Explain need of construction equipment.	04
	(c) Write note on purpose, components and classification of concrete batching plant.	07
Q.2	(a) Define: Depreciation, Salvage and scrap values	03
	(b) List the different excavating equipment.	04
	(c) Write note on types, basic parts, operation of power shovel with neat sketch.	07
OR		
	(c) What is the difference between mobile cranes and tower cranes? Write note on components, purposes and types of tower cranes with sketch.	07
Q.3	(a) What is automation? Explain need of automation.	03
	(b) What are the benefits of automation?	04
	(c) Write a note on canal lining equipment	07
OR		
Q.3	(a) What is difference between robotics and automation?	03
	(b) Write short note on types and working of brick laying machine/robots.	04
	(c) Write note on automation in highway construction.	07
Q.4	(a) What are benefits of robotics in construction industry?	03
	(b) Explain robotics in building demolition activity	04
	(c) Explain working of 3D scanner for surveying	07
OR		
Q.4	(a) Classify different types of drones.	03
	(b) Explain use of robot in material handling and steel cutting	04
	(c) What is 3D printing? What are the advantages of 3D printing	07
Q.5	(a) What is photogrammetry ?	03
	(b) Explain advantage of using drone in photogrammetry	04
	(c) Explain Real time data and land survey using drone.	07
OR		
Q.5	(a) What is concept of virtual reality technology?	03
	(b) Explain in Brief about BIM	04
	(c) What is structural health monitoring? Explain how effective structural health monitoring can be done using drones.	07
