

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3160617****Date:24-05-2024****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) What is building automation system. **03**  
 (b) How 3d –printing Robot is working? **04**  
 (c) How does a drone survey work? **07**

- Q.2** (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 equipment's. **07**

**OR**

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

- 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) Explain the benefits of robots in construction industry in context of time, safety, quality and cost. **07**

**OR**

- Q.3** (a) How canal automation help in canal lining. **03**  
 (b) What are the advantages & disadvantages of the Drone? **04**  
 (c) Write note on automation in highway construction. **07**

- 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**

**OR**

- 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**

- 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**

**OR**

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

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