

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 7 – EXAMINATION – SUMMER 2026

Subject Code: 3171108

Date: 26/05/2026

Subject Name: Internet of Things

Time: 02:30 PM TO 05:00 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 Internet of Things. List any four characteristics. **03**
 - (b) Differentiate between M2M and IoT. **04**
 - (c) Explain End-to-End IoT architecture with diagram. **07**
- Q.2**
- (a) List any three sensors and actuators used in IoT. **03**
 - (b) Explain NodeMCU and its role in IoT implementation. **04**
 - (c) Describe reading sensor data and transmitting it to the cloud. **07**
- OR**
- Q.2**
- (c) How can mobile/web apps control IoT devices via the cloud? Explain. **07**
- Q.3**
- (a) Name any three transport and application layer protocols used in IoT. **03**
 - (b) Explain features and working of MQTT protocol. **04**
 - (c) Compare CoAP and HTTP protocols. **07**
- OR**
- Q.3**
- (a) List two features of XMPP. **03**
 - (b) Write short notes on AMQP. **04**
 - (c) Explain OSI layer-wise classification of IoT protocols. **07**
- Q.4**
- (a) Mention major security concerns in IoT networks. **03**
 - (b) Explain the role of key management in IoT security. **04**
 - (c) Describe three challenges in IoT security with solutions. **07**
- OR**
- Q.4**
- (a) Define value of information in IoT context. **03**
 - (b) What is update management and its importance? **04**
 - (c) Explain components of a secure IoT system **07**
- Q.5**
- (a) List three real-life applications of Consumer IoT. **03**
 - (b) Explain Industrial IoT (IIoT) with use case. **04**
 - (c) Write a detailed case study on smart city using IoT. **07**
- OR**
- Q.5**
- (a) What is Infrastructure IoT? Give two examples. **03**

(b) Differentiate between Commercial IoT and Military IoT. **04**

(c) Discuss IoT in healthcare with technologies used. **07**
