

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER- VI EXAMINATION – SUMMER 2026****Subject Code:3164206****Date:26-05-2026****Subject Name: Internet of Things****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) What is Digitization? Explain with examples	03
	(b) Explain how the IoT has impacted the connected roadways	04
	(c) Explain the challenges of IoT.	07
Q.2	(a) What is the use of a Gateway in IoT? Explain.	03
	(b) Explain the following : (i) PAN (personal area network) (ii) HAN (home area network) (iii) NAN (neighborhood area network) (iv) LAN (local area network).	04
	(c) Explain the hierarchy of Edge, Fog, and Cloud.	07
	OR	
	(c) What is Operation Technology? Explain the differences between Operational technology and Enterprise Information Technology	07
Q.3	(a) What is a smart object? Explain the characteristics of smart objects.	03
	(b) Explain the various sensors used in a smart phone and its functionality.	04
	(c) Explain three levels of MQTT QoS with a neat illustration.	07
	OR	
Q.3	(a) Write short note on high-level ZigBee protocol stack.	03
	(b) Differentiate Mesh-Under and Mesh-Over Routing.	04
	(c) Explain scheduling methods & forwarding methods in 6TiSCH.	07
Q.4	(a) Write short note on Authentication & Authorization for Constraints Environments (ACE).	03
	(b) List and explain key advantages of Internet Protocol.	04
	(c) Explain 6LoWPAN Header compression and Fragmentation.	07
	OR	
Q.4	(a) What are Wireless Sensor Networks (WSNs)? Explain.	03
	(b) Explain the traditional IT Cloud Computing Model.	04
	(c) Explain LoRaWAN Architecture with a neat illustration.	07
Q.5	(a) What is Fog Computing? Explain its characteristics.	03
	(b) Explain Structured versus Unstructured Data.	04
	(c) Explain RPL Rank and its Metrics.	07
	OR	
Q.5	(a) What is the difference between the Star and Clustered Star Topologies? Explain with a neat illustration.	03
	(b) Explain IoT Data Broker with neat sketch.	04
	(c) Explain DNP3 protocol translation with neat illustration.	07
