

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024

Subject Code:3171108

Date:27-11-2024

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) Write a brief note on application of IoT.	03
	(b) Draw and explain a generic block diagram of an IoT Device.	04
	(c) List various link layer protocols of IoT. Explain any three among them in detail with respect to IoT.	07
Q.2	(a) With a neat sketch, explain the request-response communication model of IoT	03
	(b) Describe IoT and M2M mentioning differences between them.	04
	(c) Explain Fog, Edge and Cloud Computing using IoT terminologies and concepts.	07
	OR	
	(c) Briefly describe the IoT different Levels of Implementations using neat and clean block diagrams.	07
Q.3	(a) List the features of NodeMCU.	03
	(b) List steps involved in reading sensor data and transmitting it to cloud with neat and clean sketches.	04
	(c) List different Sensors used in implementation of IoT and explain any four of them in detail.	07
	OR	
Q.3	(a) List the features of Raspberry Pi.	03
	(b) List the steps involved in controlling devices through cloud using mobile/web application	04
	(c) List different Actuators used in implementation of IoT and explain any four of them in detail.	07
Q.4	(a) How IoT devices are addressed over internet? Explain the possibilities with neat illustration.	03
	(b) Explain the use of HTTP as an Application layer IoT Protocol.	04
	(c) Discuss Message Queue Telemetry Transport Protocol.	07
	OR	
Q.4	(a) How end to end message integrity is ensured in IoT implementation?	03
	(b) Explain Systematic HTTP access methodology that can be devised in IoT implementation.	04
	(c) Discuss Constrained Application Protocol in detail.	07

- Q.5** (a) How personal data theft can be prevented in personal IoT device implementation **03**
(b) How firmware updates can be installed on IoT Devices? **04**
(c) Discuss one design and implementation of Industrial IoT Application with neat sketches and illustrations. **07**

OR

- Q.5** (a) How wireless IoT device is secured at physical layer? **03**
(b) List the security challenges in IoT in brief. **04**
(c) Discuss one design and implantation of Consumer IoT Application with neat sketches and illustrations. **07**
