

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code:3173215****Date:30-05-2024****Subject Name:IOT and its applications****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.

		MARKS
Q.1	(a) What are the “Things” in IoT?	03
	(b) Explain the role of cloud in IoT.	04
	(c) Mention the importance of sensors in IoT applications with appropriate examples.	07
Q.2	(a) Define IoT.	03
	(b) What are the challenges in building application with IoT?	04
	(c) What do you mean by enabling technologies of IoT? Explain about each one of them in brief.	07
OR		
	(c) Write importance of communication protocols when it comes to IoT.	07
Q.3	(a) What are the features & applications of XMPP?	03
	(b) Compare CoAP with MQTT in operational aspects.	04
	(c) Explain general guidelines which should be followed while selecting any Cloud Service Provider for any IOT based application.	07
OR		
Q.3	(a) Write features of latest version of Raspberry Pi.	03
	(b) Draw common architecture of IoT based application and explain each block in brief.	04
	(c) Draw the block diagram for designing an IoT based “Smart Retail System in Shopping Mall” & explain requirements of each component in detail.	07
Q.4	(a) What are the features of Arduino Uno?	03
	(b) What parameters should be considered while developing any IoT based applications?	04
	(c) Which are the service models in cloud computing?	07
OR		
Q.4	(a) What are the potential advantages of IFTTT?	03
	(b) Write advantages of fog computing.	04
	(c) Give difference between Cyber Physical System (CPS) Vs IoT.	07

- Q.5** (a) How is Li-Fi different from Wi-fi? **03**
(b) Classify following sensors in each category: Ultrasonic sensor, Smoke sensor, IR sensor, Motion sensor, Proximity sensor. **04**
(c) Explain architecture of DDS protocol. What is the difference between DDS & MQTT? **07**

OR

- Q.5** (a) How is IPv4 inferior to IPv6? **03**
(b) Discuss the CoAP message types with relevant examples. **04**
(c) Explain functionality of MQTT protocol with some important applications. **07**
