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PRESIDENCY UNIVERSITY

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Bengaluru

Mid Term Examinations - October 2026

Date: 06/10/2026 **Time:** 09:30 AM - 11:00 AM

Course Code: ECE3075 **Course Name:** IoT Architecture and Protocols

Semester: Seventh Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	46	44

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	List the stages in Machine to Machine Communication (M2M) process.	2	CO1	BT1
2	The Logical design of an IoT system refers to an abstract representation of the entities and processes. List the functional blocks.	2	CO1	BT1
3	Numerous IoT protocols are applicable at different layers of the TCP/IP model. Identify the Layer that consist of IPV4, IPV6 and 6LoPWAN protocols	2	CO1	BT1
4	List any two Technological Challenges of IoT	2	CO2	BT1
5	Identify the communication model that involves publishers, brokers and consumers.	2	CO2	BT1

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	An IoT device may consist of several interfaces. Explain with diagram the Generic block diagram of IoT device.	10	CO1	BT2
7	Explain with diagram the IoT protocols in each layers of TCP/IP model	10	CO1	BT2

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Web socket is most suitable IoT Communication APIs. Describe with diagram the WebSocket-based communication API.	10	CO1	BT2
9	For communication over internet Request-Response is one of the communication models. Describe with diagram the Request-Response communication model.	10	CO1	BT2

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
10	Actuators, are used to automate tasks in the workplace, saving human labor. Describe the type of Actuators	10	CO2	BT2
11	Internet of things (IoT) is represented in 4 stage architecture framework. Explain with diagram the 4 stage Architecture of IoT Framework.	10	CO2	BT2

PART E: Answer Any 1 Following Questions. 10 M

PTO (Please Turn Over)

Q.N.	Questions	M	CO	BT
12	Apply with diagram a suitable **IoT deployment level to** deploy a smart **single-node** Home automation system that uses cloud for storage,	10	CO2	BT3
13	The ESP32 has inbuilt 12 bit ADC and the reference Voltage is 3.3V. 1. Determine the Resolution of the ADC. 2. If a LM35 temperature sensor having sensitivity of 10mV/^{0}C is interfaced, compute the Analog output value of the sensor for 60 ^{0}C. 3. Determine the digital value for the above analog value. 4. Compute the Temperature from the digital value 5. Determine the Absolute error and Percentage error due to quantization.	10	CO2	BT3