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PRESIDENCY UNIVERSITY

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Bengaluru

Mid Term Examinations - October 2026

Date: 06/10/2026 **Time:** 02:00 PM - 03:30 PM

Course Code: CIT3404 **Course Name:** IoT System Design and Development

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	Describe the concept of the Internet of Things (IoT).	2	CO1	BT2
2	Discuss any two applications of IoT in agriculture.	2	CO1	BT2
3	State any two advantages of IoT and their significance.	2	CO1	BT2
4	Describe the use of the Arduino function for configuring a pin as INPUT or OUTPUT.	2	CO2	BT2
5	Describe one application where Wi-Fi is suitable for IoT.	2	CO2	BT2

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain the basic architecture of an IoT system with a neat diagram. Describe the role of sensors, actuators, controller, communication network, cloud, and application.	10	CO1	BT2
7	Explain the relationship between M2M communication and IoT. Also list the major differences between M2M and IoT.	10	CO1	BT2

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Explain the three IoT communication models: Device-to-Device, Device-to-Cloud, and Device-to-Gateway with suitable examples.	10	CO1	BT2
9	Describe the key challenges in implementing IoT systems with respect to scalability, interoperability, security, power consumption, privacy, and reliability.	10	CO1	BT2

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
10	A smart agriculture system uses multiple soil-moisture sensors. Show how ZigBee can be used to connect the sensor nodes and gateway for collecting the sensor data.	10	CO2	BT3
11	A temperature sensor has limited battery power and sends small amounts of data. Differentiate between TCP and UDP and explain which one would be more suitable for such an IoT application.	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	A smart healthcare system uses battery-operated wearable sensors to monitor a patient's vital signs. Explain how IEEE 802.15.4 can be used to communicate between the wearable sensor nodes and the healthcare gateway.	10	CO2	BT3
13	A smart agriculture system uses wireless sensor nodes to monitor soil moisture and temperature. Apply suitable wireless communication protocols for this IoT system and state their advantages and limitations.	10	CO2	BT3