

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2024**

INTERNET OF THINGS

[Maximum marks: 75]

[Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark.

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	What is the definition of IoT (Internet of Things)?	M1.01	R
2	What is the purpose of IoT connectivity?	M1.01	R
3	What is the unique identifier associated with each IoT device?	M1.01	R
4	MQTT is based on which model?	M2.02	R
5	What does URI stand for?	M2.04	R
6	What is SLAs?	M3.03	R
7	List any two security aspects of cloud computing.	M3.05	R
8	Which sensor is preferred for detection of gas?	M4.01	R
9	Which of the following is an example of an actuator in an IoT application? (a) Temperature sensor (b) LED (Light Emitting Diode) (c) GPS module (d) Pressure sensor	M4.01	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	What are the “things” in IOT?	M1.02	R
2	Explain the importance of communication protocols when it comes to IOT.	M1.03	U
3	Discuss the working of MQTT protocol with a neat diagram.	M2.02	U
4	Explain the message format of CoAP protocol.	M2.03	U

5	How many classes are there in IPV4? Explain each class.	M2.04	R
6	Describe different types of cloud services.	M3.01	U
7	How is fog computing different from cloud computing?	M3.04	R
8	Explain the role of sensors in IoT applications.	M4.01	U
9	Discuss the major considerations while selecting a sensor.	M4.01	U
10	What are the numeric data types in Python, and how do they differ in terms of precision and range?	M4.04	R

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Explain IOT stack with appropriate examples for each layer. OR	M1.02	U
IV	What are the challenges in building an application with IOT?	M1.05	U
V	Discuss four types of Constrained Application Protocol messages. OR	M2.02	U
VI	Draw the BLE stack and explain its components.	M2.03	U
VII	(a) What are the major technologies which play a role in IoT application development? (2 marks) (b) Explain the challenges of Bigdata analytics. (5 marks) OR	M1.03	R
VIII	(a) What are the possible topological options with BLE? (2 marks) (b) Explain the BLE topologies with suitable diagram. (5 marks)	M2.03	R
IX	What are the various cloud deployment models? List their merits and demerits. OR	M3.01	R
X	List the challenges while opting for IOT and cloud computing. How can we overcome them?	M3.02	R
XI	Illustrate the interfacing of ultrasonic sound sensor with Arduino uno computing board. OR	M4.03	U
XII	Explain control structures of python in details with example.	M4.04	U
XIII	Illustrate the interfacing of LED and Switch with Raspberry PI. OR	M4.05	U
XIV	Summarize the building of smart perishable tracking/smart transportation application with IoT technology.	M4.06	U
