Name: Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: **Internet of Things**   Semester: **VIII**
Program: **B. Tech Mechatronics Engineering**   Time **03 hrs.**
Course Code: **CSIS4001**   **Max. Marks: 100**

Instructions: Assume any missing data.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
1	Expand and define IoT and M2M communication	4	CO3
2	In the context of daily-life IoT examples, define "things", "objects", and "machines	4	CO1
3	At the architecture level of IoT, define and explain the perception/performance box	4	CO3
4	Highlight the software and hardware requirements to implement IoT with an example for each	4	CO2
5	What is RFID? What are the main components of RFID?	4	CO4

SECTION B
(4Qx10M= 40 Marks)

S. No.		Marks	CO
6	Highlight the importance of standardization (IEEE, ISO) in IoT. Mention examples	10	CO2
7	With example, specify the name of sensors required for measuring the following parameters i) Mechanical ii) Thermal iii) Radiation iv) Biological	10	CO4
8	Draw and explain a typical sensor network arrangement in Wireless Sensor Network	10	CO3
9	Highlight the key challenges in IoT devices **OR** Differentiate between a smart home and home automation at the architecture level	10	CO4

SECTION-C
(2Qx20M=40 Marks)

S. No.		Marks	CO
10	Design the architecture required for implementing an IoT-based health monitoring system. List the sensors and actuators required. Perform a detailed cost analysis.	20	CO4
11	Design an IoT-based smart dustbin for measuring the level of garbage. Draw the complete architecture, list the different devices required and mention the advantages	20	CO1

	of the smart dustbin		
	OR		
	Design an IoT-based smart street-light system for automating the switching of street lights depending on day and night conditions. Draw the complete architecture, list the different devices required and mention the advantages of the smart dustbin		