UPES
UNIVERSITY OF TOMORROW

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

Course: Development of IOT Applications with Case Study   Semester: VIII
Program: B.Tech CSE BAO   Time   : 03 hrs.
Course Code: CSIS 4008P   Max. Marks: 100

Instructions:
The answers should be technically-sound and to the point.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Define various component of IoT with help of a diagram.	4	CO1
Q 2	List different microcontrollers used capture data in IoT systems. State the pro and cons of each	4	CO2
Q 3	Explain any four applications areas of IoT.	4	CO1
Q 4	State how IoT system are different from M2M .	4	CO1
Q 5	Define digital twins and its possible applications.	4	CO2

SECTION B
(4Qx10M= 40 Marks)

Q 6	Illustrate various challenges faced with designing IoT system with technologies of industry 4.0	10	CO1
Q 7	Explain the term 'smart city. Discuss the building blocks of an IoT-based smart traffic light system.	10	C03
Q 8	Describe Personnel Navigation Devices "PND"? Discuss whether the GPS-enabled smartphone is a substitute for PNDs.	10	CO2
Q 9	Design a smart parking system using components of IOT. Appraise various schemes and strategies designed to overcome the problem of traffic congestion **OR** Design a Pipeline Leak detection system using components of IOT. Appraise various strategies designed to avoid environmental hazard.	10	CO4

SECTION-C
(2Qx20M=40 Marks)

Q 10	Describe the architecture of IRNSS. Categorize and explain its offered services with examples.	20	CO3
Q 11	Discuss the role of IoT in the healthcare sector. Let us assume that, you	20	CO4

	have been assigned a task to design an IoT-based remote healthcare monitoring system. How would you approach this assignment? **OR** Justify that cars are not a simple transportation medium anymore. In your view, how is IoT transforming the automotive industry? Give at least five IoT-enabled features of smart cars.		