


Name:			
Enrolment No:			
UPES End Semester Examination, May 2024			
Course: IoT for industries Program: B.Tech. (CS-IoT) Time: 03 hrs. Course Code: CSIS3011 Instructions: Attempt every questions.		Semester: 6 Max. Marks: 100	
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Describe the impact of IoT on mobile vehicular technology.	4	CO1
Q 2	Enumerate some IoT standardization bodies and their roles in protocol development.	4	CO3
Q 3	Describe role of SDN in with examples and diagrams.	4	CO2
Q 4	Describe the utility of Python and cloud technology in the context of Raspberry Pi.	4	CO4
Q 5	Illustrate addressing mechanism of IPv6. Describe its issues in integrating with IoT protocols.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 6	Illustrate LORA protocols for IoT. Outline their use cases for health applications.	10	CO4
Q 7	Provide detailed pin diagrams for Raspberry Pi. Describe the interfacing of a infra-red sensor and remote control with pseudo-code.	10	CO2
Q 8	Illustrate the pub-sub and brokering mechanism in MQTT with appropriate illustrations.	10	CO4
Q 9	Demonstrate the application of Hadoop and MapReduce to IoT. How does IoT benefit from it.	10	CO4

	OR		
	Design an IoT system for a possible internet traffic monitoring scenario at UPES. Make appropriate assumptions with hardware and software.		
SECTION-C (2Qx20M=40 Marks)			
Q 10	<p>Illustrate Low Power Wireless Personal Area Networks for IoT. Describe its architecture, working mechanism and how it interfaces with IPv6.</p> <p style="text-align: center;">Or</p> <p>Describe the role of ownCloud technology in IoT. Outline use cases for IoT-based sensor and actuation integration on one side and AI/Analysis/Visualization algorithms on the other side. Draw a detailed system architecture.</p>	20	CO5
Q 11	<p>Describe Routing Protocol for Low-Power and Lossy Networks (RPL) with detailed diagrams, underlying graph-theoretic structure. Provide insights into how graphs are constructed and how underlying tree is built.</p> <p style="text-align: center;">OR</p> <p>Describe Zigbee protocol for IoT. Design a use case around it and provide a detailed system diagram for it.</p>	20	CO2