

U.S.N.

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations**Programme: B.E.****Semester: VI****Branch: Institutional Elective****Duration: 3 hrs.****Course Code: 22EE6OE1IT****Max Marks: 100****Course: IoT and Applications**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.			UNIT - I	CO	PO	Marks
	1	a)	What is an IoT platform?	CO1	PO1	04
		b)	How did the different phases of the internet create business and societal impacts?	CO1	PO1	08
		c)	How has IoT specifically improved home and building automation?	CO2	PO1	08
			OR			
	2	a)	Define IoT. State and explain any two characteristics of IoT.	CO1	PO1	04
		b)	Explain in detail, the role of IoT in Industry.	CO1	PO1	08
		c)	What is the design and deployment challenges that are associated with IoT?	CO2	PO1	08
			UNIT - II			
	3	a)	With a neat diagram, identify and label how actuators and sensors interact with the physical world.	CO3	PO1	04
		b)	Describe the role of Wireless Sensor Networks (WSN) in the Internet of Things (IoT). Why is WSN widely used for implementing IoT systems?	CO3	PO1	08
		c)	Evaluate the advantages, disadvantages, and applications of hydraulic actuators.	CO3	PO1	08
			OR			
	4	a)	Write the applications and challenges of wireless sensor network (WSN)?	CO2	PO2	10
		b)	Classify, explain and differentiate sensors based on its output.			
		c)	Evaluate the advantages, disadvantages, and applications of electrical actuators.	CO2	PO2	10

		UNIT - III			
5	a)	What are the layers that are associated with the Internet Protocols?	CO4	PO3	04
	b)	Write a short note on <ul style="list-style-type: none"> IPv4 6LoWPAN 	CO4	PO3	08
	c)	Using examples and visual representations, explain in detail the three phases of TCP.	CO4	PO3	08
		OR			
6	a)	Differentiate between Bluetooth and Zigbee (Any Five).	CO4	PO3	04
	b)	Write a short note on <ul style="list-style-type: none"> Frame format of IEEE 802.3 IPv6 	CO4	PO3	08
	c)	What are Zigbee devices? How they are connected to form a topology. Explain each of these topologies with neat diagrams.	CO4	PO3	08
		UNIT - IV			
7	a)	Describe the significance of block-wise transfers in CoAP and how they improve the protocol's efficiency.	CO4	PO3	04
	b)	Illustrate the working of HTTP/CoAP proxying, explaining its mechanism and benefits in IoT applications.	CO4	PO3	08
	c)	Explain about COAP and differentiate it with MQTT Protocols (Four differences)	CO4	PO3	08
		OR			
8	a)	Compare and contrast HTTP and AMQP, focusing on their key differences in terms of communication patterns, protocol design, and use cases.	CO4	PO3	04
	b)	Describe in detail one specific classification of the CoAP protocol, explaining its features and use cases.	CO4	PO3	08
	c)	Define MQTT, describe how it works, and discuss the drawbacks of using MQTT in IoT applications.	CO4	PO3	08
		UNIT - V			
9	a)	Write a short note on Supervised and Unsupervised Learning with relevant examples	CO5	PO2	04
	b)	Explain the concept of Platform as a Service (PaaS) and compare it with Function as a Service (FaaS), highlighting their key differences.	CO5	PO2	08
	c)	Define fog computing, outline its architecture, and discuss scenarios in which fog computing is advantageous.	CO5	PO2	08
		OR			
10	a)	With the relevant examples, write a short note on structured and unstructured data.	CO5	PO2	04
	b)	Why is IoT data analytics important?	CO5	PO2	08
	c)	What is the concept of Everything and Anything as a service, highlighting its advantages, disadvantages and applications?	CO5	PO2	08
