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Model Question Paper-1 with effect from 2022-23 (CBCS Scheme)

Fifth Semester B.E. Degree Examination

Subject Title : Advanced IoT

Time: 03 Hours

Max. Marks: 100

Note: Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

Module - 1			Bloom's Taxonomy Level	COs	Marks
Q. 1	a	What is IoT? Explain the evolutionary phases of the Internet.	L1, L2	CO1	08
	b	Define Digitization. Explain the concept of digitization with examples.	L2	CO1	06
	c	Differentiate between IT and OT networks.	L4	CO1	06
OR					
Q. 2	a	Explain the requirements driving specific architectural changes for IoT.	L2	CO1	10
	b	Explain the challenges and benefits offered by connected roadways.	L2	CO1	07
	c	What are Smart Creatures? Explain.	L1, L2	CO1	03
Module-2					
Q. 3	a	Draw the simplified IoT architecture. Give the classification of 'Things'.	L2, L3	CO2	08
	b	Write the architectural considerations for Ethernet, Wi-Fi, 802.11ah, WIMAX and Cellular Technologies.	L2	CO2	08
	c	Explain Star and Mesh topology.	L2	CO2	04
OR					
Q. 4	a	Discuss the various groups of ranges available under Access Network Sublayer.	L2	CO2	08
	b	Explain: (i) Data versus Network Analytics (ii) Analytics versus Control Applications	L2	CO2	06
	c	Explain the IoT data management and compute stack.	L2	CO2	06
Module-3					
Q. 5	a	What are Sensors? Explain the following types of sensors with examples: (i) Position (ii) Flow (iii) Acoustic (iv) Light (v) Chemical (vi) Biosensors	L1, L2	CO3	10
	b	Write a short note on: (i) MEMS (ii) WSN	L2	CO3	06
	c	What are Actuators? How sensors and actuators interact with the physical world?	L1, L2	CO3	04
OR					
Q. 6	a	Define a Smart Object. Explain the characteristics and trends in smart objects.	L1, L2	CO3	10
	b	Describe the communication criteria to be considered during selection and connection of smart objects.	L2	CO3	07
	c	Write the main characteristics of the LTE-M category.	L2	CO3	03
Module-4					
Q. 7	a	What are the key advantages of Internet Protocol (IP)? Explain.	L1, L2	CO4	10

	b	Explain the MQTT publish/subscribe framework.	L2	C04	06
	c	Distinguish between CoAP and MQTT.	L4	C04	04
OR					
Q. 8	a	Define Data Analytics. Provide an overview of IoT data analytics.	L1, L2	C04	10
	b	Explain: (i) Structured versus unstructured data (ii) Data in motion versus data at rest.	L2	C04	06
	c	Distinguish between TCP and UDP.	L4	C04	04
Module-5					
Q. 9	a	What is a Smart City? Explain in detail smart city IoT architecture.	L1, L2	C05	10
	b	Explain the different functional zones and levels of IACS reference model for the connected factory.	L2	C05	10
OR					
Q. 10	a	What is Connected Manufacturing? Discuss the IoT strategy for connected manufacturing.	L1, L2	C05	09
	b	Explain Smart Street Lighting.	L2	C05	06
	c	How LED technology leads the transition from traditional street lighting to smart street lighting?	L2	C05	05
