U.S.N.										

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

Autonomous Institute Affiliated to VTU

October 2024 Supplementary Examinations

Programme: B.E. **Semester: IV**
Branch: CSE (IoT & Cyber Security Including Blockchain) **Duration: 3 hrs.**
Course Code: 23IC4PCIOT **Max Marks: 100**
Course: Internet of Things

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)	Draw the main elements of the oneM2M IoT architecture and explain the three major domains of IoT functions.	*CO1*	*PO1*	**10**
	b)	Explain any five significant characteristics of WSNs and Describe the architecture design of WSN.	*CO1*	*PO1*	**10**
		UNIT – II			
2	a)	Describe UART and SPI protocol with a neat diagram.	*CO2*	*PO2*	**10**
	b)	Illustrate about IEEE 802.15.4 and ZigBee.	*CO2*	*PO2*	**10**
		OR			
3	a)	Describe UART and SPI on Arduino along with advantages and disadvantages.	*CO2*	*PO2*	**10**
	b)	Illustrate about LoRaWAN architecture and security with necessary diagrams.	*CO2*	*PO2*	**10**
		UNIT - III			
4	a)	Describe optimizing IP for IoT from 6LoWPAN to 6Lo	*CO3*	*PO3*	**10**
	b)	Discuss the following with respect to MQTT i. Publish/subscribe framework ii. Message format iii. Any four MQTT message types.	*CO3*	*PO3*	**10**
		OR			
5	a)	Describe 6TiSCH along with the four schedule management mechanisms and forwarding models.	*CO3*	*PO3*	**10**
	b)	Discuss the following with respect to CoAP: i. Message format and fields in it ii. Communications in IoT infrastructures	*CO3*	*PO3*	**10**

			UNIT - IV			
	6	a)	Describe the following about SDN i. Key elements ii. OpenFlow switch and flow table	*CO3*	*PO3*	**10**
		b)	Discuss the NFV in detail using the architecture and also illustrate how NFV can be used to virtualize the home networks.	*CO3*	*PO3*	**10**
			UNIT - V			
	7	a)	Illustrate the three-layer IoT architecture and security issues in each layer.	*CO3*	*PO3*	**10**
		b)	Discuss the IoT security for data integrity.	*CO3*	*PO3*	**10**

****