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

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E.   **Semester: VI**
Branch: Electronics and Communication Engineering   **Duration: 3 hrs.**
Course Code: 19EC6PE3IT   **Max Marks: 100**
Course: Internet of Things   **Date: 17.07.2023**

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

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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.

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				CO	PO	Marks
			UNIT - I	*CO*	*PO*	**Marks**
1	a)		With a neat diagram explain the IoTWF standardized architecture. Identify one of important challenge addressed by one M2M using an example.	*CO1*	*PO1*	**12**
	b)		Compare information technology and operational technology along with their implementation challenges.	*CO2*	*PO2*	**08**
			UNIT - II			
2	a)		Provide an analysis of the 802.15.4.g and 802.15.4.e amendments to the802.15.4. standard in the context of making it suitable for IoT.	*CO2*	*PO2*	**12**
	b)		List and explain different communication criterias in IoT	---	---	**08**
			UNIT - III			
3	a)		Sketch the MQTT Message format and describe each field in detail	---	---	**10**
	b)		Illustrate how SCADA is adapted in IP? Sketch and briefly describe the protocol stack for transporting serial DNP3 SCADA over IP.	---	---	**10**
			OR			
4	a)		With the help of the location of 6TiSCH's 6 top sub-layer, explain its schedule management mechanisms?	*CO1*	*PO1*	**10**
	b)		Sketch the CoAP Message format and describe each field in detail.	---	---	**10**
			UNIT - IV			
5	a)		Explain the different types of IoT data analytics and list the challenges for performing IoT Data Analytics	*CO1*	*PO1*	**10**

				CO	PO	
	b)	Describe Network Analytics. With the help of a block diagram, show the field area network traffic analytics performed on an aggregation router in a smart grid. Also explain the same in detail.		*CO1*	*PO1*	**10**
		OR				
6	a)	Explain the Lambda Architecture with the help of a block diagram. Mention its merits and demerits.		*CO1*	*PO1*	**10**
	b)	Review the risk assessment framework: OCTAVE Allegro steps and Phases in detail.		*CO1*	*PO1*	**10**
		UNIT - V				
7	a)	Assume that you are been assigned a project on Wireless Temperature Monitoring System Using RaspberryPi. Which sensor would you choose (specific feature) and how do you access the temperature data. Also using SSH protocol how would you connect RaspberryPi? List out the hardware, software and the Python libraries required to accomplish the project.		*CO2*	*PO 2*	**10**
	b)	Discuss the Smart Parking Architecture use case in the context of the Smart City		*CO2*	*PO 2*	**10**

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