CBCS SCHEME
SRI SAIRAM COLLEGE OF ENGG

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BIS613B

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025
Internet of Things

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain one M2M IoT standardized architecture with a neat block diagram.	10	L2	CO1
	b.	Define the following key factors involved in connecting smart objects to the network: (i) Range (ii) Frequency bands	04	L1	CO1
	c.	What is Internet of Things? Explain the different evolutionary phases of the Internet.	06	L2	CO1
		OR			
Q.2	a.	Explain simplified IoT architecture.	10	L2	CO1
	b.	Explain the different challenges faced in IoT.	06	L2	CO1
	c.	Define the following : i) Edge computing ii) Fog computing	04	L1	CO1
		Module – 2			
Q.3	a.	Briefly explain protocol stack utilization in IEEE 802.15.4	06	L2	CO2
	b.	List and explain in brief the communication criteria.	07	L2	CO2
	c.	What are the enhancements and features specified by IEEE 802.11ah for the MAC layer?	07	L1	CO2
		OR			
Q.4	a.	Analyze in detail LoRaWAN technology, illustrating the layer MAC format and architecture.	12	L4	CO2
	b.	Explain IEEE 802.15.4 g/e MAC frame format and MAC layer security.	08	L2	CO2
		Module – 3			
Q.5	a.	Explain the key advantages of Internet Protocol.	08	L2	CO3
	b.	Briefly discuss about constrained nodes and networks.	08	L2	CO3
	c.	What are the differences between adoption and adaptation of internet protocol?	04	L3	CO3

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		OR			
Q.6	**a.**	Explain header compression, fragmentation and mesh addressing with respect to 6LoWPAN.	**12**	**L2**	**CO3**
	b.	Write short notes on IP versions.	**04**	**L1**	**CO3**
	c.	Explain four schedule management mechanisms defined in 6TiSCH architecture.	**04**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	Explain SCADA protocol translation with a neat diagram.	**07**	**L2**	**CO3**
	b.	Differentiate between CoAP and MQTT.	**07**	**L3**	**CO3**
	c.	Explain MQTT publish/subscribe framework.	**06**	**L2**	**CO3**
		OR			
Q.8	**a.**	Explain Lambda architecture with neat diagram.	**08**	**L2**	**CO4**
	b.	Explain the types of data analytics for IoT and brief the challenges faced by IoT data analytics.	**06**	**L2**	**CO4**
	c.	Compare Big Data and Edge Analytics.	**06**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	With a neat diagram, explain OCTAVE Allegro steps and phases.	**10**	**L2**	**CO4**
	b.	Explain security between levels and zones in the process control hierarchy model with a neat diagram.	**10**	**L2**	**CO4**
		OR			
Q.10	**a.**	Explain connected school bus network architecture with a diagram.	**08**	**L2**	**CO5**
	b.	With a neat diagram, explain mobile command center.	**06**	**L2**	**CO5**
	c.	Brief the 6 types of communication locations and devices that ensure the mission continuum.	**06**	**L1**	**CO5**

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