



Third Semester MCA Degree Examination, Dec.2024/Jan.2025
Internet of Things

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.	What is IoT? Explain the evolutionary phases of the Internet.		6	L2	CO1
	b.	Discuss any two applications of IoT.		6	L3	CO1
	c.	With a neat diagram discuss the IoT World Forum (IoT WF) Standardized Architecture.		8	L2	CO1
OR						
Q.2	a.	With a neat diagram discuss the one M2M IoT architecture.		7	L2	CO1
	b.	With a neat diagram discuss a simplified IoT architecture.		8	L2	CO1
	c.	Discuss the most significant challenges and problems that IoT is currently facing.		5	L3	CO1
Module – 2						
Q.3	a.	Define sensors. Discuss different categories and types of sensors.		9	L2	CO2
	b.	Define smart objects. Discuss the characteristics of a smart object with diagram.		5	L2	CO2
	c.	What is LoRaWAN? Discuss about ZigBeeIp protocol stack.		6	L3	CO2
OR						
Q.4	a.	Define Actuators. Discuss the comparison of Sensor and Actuators functionality with humans.		6	L2	CO2
	b.	Discuss 802.15.14 physical layer and MAC layer properties along with its frame format.		8	L2	CO2
	c.	List different characteristics and attributes considered when connecting smart objects. Discuss any two.		6	L1	CO2
Module – 3						
Q.5	a.	What are the benefits of Internet Protocol?		6	L2	CO3
	b.	How optimizing IP for IoT is done? Discuss 6LOWPAN header stacks.		10	L2	CO3
	c.	What is the use of IoT Data Broker?		4	L1	CO3

OR

Q.6	a.	Define SCADA. Discuss the protocol stack for transporting serial DNP3 SCADA over IP.	10	L2	CO3
	b.	Why CoAP and MQTT protocols designed? Compare the differences between CoAP and MQTT.	10	L2	CO3
Module – 4					
Q.7	a.	Discuss the following: i) Structured versus unstructured data. ii) Data in Motion versus data at rest. iii) "Three Vs" to categorize big data. iv) Types of data analysis results.	10	L1	CO4
	b.	Discuss massive parallel processing databases.	6	L2	CO4
	c.	Discuss about distributed Hadoop cluster.	4	L2	CO4
OR					
Q.8	a.	What are the key values of edge streaming analytics? Illustrate the stages of data processing in an edge APU.	10	L1	CO4
	b.	Discuss OCTAVE Allegro steps and phases.	10	L2	CO4
Module – 5					
Q.9	a.	With a neat diagram, explain Raspberry Pi board.	10	L2	CO5
	b.	Write a short note on smart traffic control and connected environment.	10	L2	CO5
Q.10	a.	Discuss an IoT strategy for smarter cities.	5	L2	CO5
	b.	With a neat diagram, discuss smart city IoT architecture.	10	L2	CO5
	c.	Write a short note on Arduino.	5	L2	CO5
