

CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

22MCA32

Third Semester MCA Degree Examination, Dec.2023/Jan.2024 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.	What is IoT? Explain the benefits of IoT and their impact.	10	L1	CO1
	b.	List and explain the drivers behind New Network Architecture.	10	L2	CO1
OR					
Q.2	a.	Explain any SIX differences between Information Technology (IT) and operation technology networks.	06	L2	CO1
	b.	Write a short note on most significant challenges and problems that IoT is currently facing.	04	L2	CO1
	c.	With a neat diagram illustrate the IoT World Forum (IoTWF) standardized architecture.	10	L2	CO1
Module – 2					
Q.3	a.	List and explain the different types of sensors and actuators.	10	L1	CO2
	b.	With a neat diagram, explain LoRaWAN Architecture.	10	L2	CO2
OR					
Q.4	a.	Write a note on IEEE 802.15.4 technology.	10	L2	CO2
	b.	Explain Wireless Sensor (WSNs) with a neat diagram explain Data Aggregation Function.	06	L2	CO2
	c.	Explain Design Constraints for Wireless Smart Objects.	04	L2	CO2
Module – 3					
Q.5	a.	Discuss the need for optimization of IP in IoT.	10	L3	CO3
	b.	Explain Supervisory Control And Data Acquisition (SCADA) as IoT Application Transport Method.	10	L2	CO3
OR					
Q.6	a.	With a neat diagram, explain the below mentioned application protocols. i) CoAP ii) MQTT	10	L1	CO3
	b.	Explain 6TiSCH, with its schedule management mechanisms and forwarding models.	10	L2	CO3
Module – 4					
Q.7	a.	Draw a neat block diagram and explain the types of Data Analysis.	10	L1	CO4
	b.	Draw a neat diagram and explain Purdue model for control hierarchy.	10	L2	CO4
OR					
Q.8	a.	Explain the benefits of flow analytics or network analytics.	10	L2	CO4
	b.	Explain the domains which revolve around the common applications of Machine Learning (ML) for IoT.	10	L2	CO4
Module – 5					
Q.9	a.	What is Raspberry Pi? Draw a neat diagram and explain Raspberry Pi board and its connections.	10	L2	CO5
	b.	With a neat diagram discuss the different layers of IoT Smart City Traffic Architecture.	10	L3	CO5
OR					
Q.10	a.	With a neat diagram, explain a connected Parking Architecture.	10	L2	CO5
	b.	What are three parts of Arduino program? Explain them in detail.	06	L2	CO5
	c.	Write brief note on four real life applications which are developed using Arduino.	04	L3	CO5
