

GALORE

GBGS SCHEME

**22MCA32** 

## Third Semester MCA Degree Examination, Dec.2023/Jan.2024 Internet of Things

Time: 3 hrs. Max. Marks: 100

Note: I. 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
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	CO <sub>1</sub>
	OR			
a.	Explain any SIX differences between Information Technology (IT) and	06	L2	CO <sub>1</sub>
	operation technology networks.			
b.	Write a short note on most significant challenges and problems that IoT is	04	L2	CO <sub>1</sub>
	currently facing.			
c.	With a neat diagram illustrate the IoT World Forum (IoTWF) standardized	10	L2	CO <sub>1</sub>
	architecture.			
	Module – 2			
a.	List and explain the different types of sensors and actuators.	10	L1	CO <sub>2</sub>
b.	With a neat diagram, explain LoRaWAN Architecture.	10	L2	CO <sub>2</sub>
	OR			
a.	Write a note on IEEE 802.15.4 technology.	.10	L2	CO <sub>2</sub>
b.	Explain Wireless Sensor (WSNs) with a neat diagram explain Data	06	L2	CO <sub>2</sub>
	Aggregation Function.			
c.	Explain Design Constraints for Wireless Smart Objects.	04	L2	CO <sub>2</sub>
-	Module – 3	W		
a.	Discuss the need for optimization of IP in IoT.	10	L3	CO3
b.		10	L2	CO3
-	OR			G
a.	With a neat diagram, explain the below mentioned application protocols.	10	L1	CO3
	i) CoAP ii) MQTT			
b.	Explain 6TiSCH, with its schedule management mechanisms and	10	L2	CO3
	forwarding models.			
	Module – 4			
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			
a.	Explain the benefits of flow analytics or network analytics.	10	L2	CO4
b.		10	L2	CO4
a.		10	L2	CO5
b.		10	L3	CO5
	Architecture.			
-	OR			
a.		10	L2	CO5
		06	L2	CO5
		-		-
c.	Write brief note on four real life applications which are developed using	04	L3	CO5
	a. b. a. b. a. b. a. b.	a. What is IoT? Explain the benefits of IoT and their impact.  b. List and explain the drivers behind New Network Architecture.  OR  a. Explain any SIX differences between Information Technology (IT) and operation technology networks.  b. Write a short note on most significant challenges and problems that IoT is currently facing.  c. With a neat diagram illustrate the IoT World Forum (IoTWF) standardized architecture.  Module - 2  a. List and explain the different types of sensors and actuators.  b. With a neat diagram, explain LoRaWAN Architecture.  OR  a. Write a note on IEEE 802.15.4 technology.  Explain Wireless Sensor (WSNs) with a neat diagram explain Data Aggregation Function.  c. Explain Desiga Constraints for Wireless Smart Objects.  Module - 3  a. Discuss the need for optimization of IP in IoT.  b. Explain Supervisory Control And Data Acquisition (SCADA) as IoT Application Transport Method.  OR  a. With a neat diagram, explain the below mentioned application protocols.  i) CoAP ii) MQTT  b. Explain 6TiSCH, with its schedule management mechanisms and forwarding models.  Module - 4  a. Draw a neat block diagram and explain the types of Data Analysis.  b. Draw a neat diagram and explain Purdue model for control hierarchy.  OR  a. Explain the benefits of flow analytics or network analytics.  b. Explain the domains which revolve around the common applications of Machine Learning (ML) for IoT.  Module - 5  a. What is Raspberry Pi? Draw a neat diagram and explain Raspberry Pi board and its connections.  b. With a neat diagram discuss the different layers of IoT Smart City Traffic Architecture.  OR  a. With a neat diagram, explain a connected Parking Architecture.	a. What is IoT? Explain the benefits of IoT and their impact.  b. List and explain the drivers behind New Network Architecture.  OR  a. Explain any SIX differences between Information Technology (IT) and operation technology networks.  b. Write a short note on most significant challenges and problems that IoT is currently facing.  c. With a neat diagram illustrate the IoT World Forum (IoTWF) standardized architecture.  Module - 2  a. List and explain the different types of sensors and actuators.  b. With a neat diagram, explain LoRaWAN Architecture.  10  OR  a. Write a note on IEEE 802.15.4 technology.  Discussing Wireless Sensor (WSNs) with a neat diagram explain Data Aggregation Function.  c. Explain Wireless Sensor (WSNs) with a neat diagram explain Data Aggregation Function of IP in IoT.  Discuss the need for optimization of IP in IoT.  Explain Supervisory Control And Data Acquisition (SCADA) as IoT 10 Application Transport Method.  OR  a. With a neat diagram, explain the below mentioned application protocols.  i) CoAP ii) MQTT  b. Explain 6TiSCH, with its schedule management mechanisms and 10 forwarding models.  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