USN

Third Semester MCA Degree Examination, Feb./Mar. 2022
Internet of Things

Time: 3 hrs.

Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1	a.	What is IOT? Explain in detail on Genesis of IOT.	(10 Marks)
	b.	Explain in detail IOT Challenges.	(10 Marks)

OR

2	a.	With a neat diagram, explain M2M IOT Standardized Architecture.	(10 Marks)
	b.	Explain with diagram, IOT Data management and Compute Stack.	(10 Marks)

Module-2

3	a.	List and explain different types of Sensors.	(10 Marks)
	b.	Explain 802.15 MAC layer with MAC Format.	(10 Marks)

OR

4	a.	Explain Zigbee protocol stack using IEEE 802.15.4.	(10 Marks)
	b.	Write short notes on : i) Smart objects ii) Wireless sensor Networks (WSN).	(10 Marks)

Module-3

5	a.	Explain key advantages of Internet protocol.	(10 Marks)
	b.	Explain in detail the 6LOWPAN.	(10 Marks)

OR

6	a.	What is COAP? Draw COAP message format also compare COAP and MQTT.	(10 Marks)
	b.	Explain MQTT in detail along with MQTT message format.	(10 Marks)

Module-4

7	a.	Explain IOT Data Analytics Overview.	(10 Marks)
	b.	Write short notes on : i) Supervised learning ii) Unsupervised learning.	(10 Marks)

OR

8	a.	Explain how IT and OT security practices and systems vary.	(10 Marks)
	b.	Explain OCTAVE and FAIR formal risk analysis.	(10 Marks)

Module-5

9	a.	Explain the following with respect to Arduino programming : i) Structure ii) Functions iii) Variables iv) Flow control statements v) Data type.	(10 Marks)
	b.	Explain Raspberry Pi learning board.	(10 Marks)

OR

10	a.	Explain Smart City IOT Architecture.	(10 Marks)
	b.	Write a program to flash LED at a given Ontime Offtime cycle where two times are taken from a file using Python.	(10 Marks)

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