CBCS SCHEME

USN | | | | | | | | | | |

20MCA32

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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