

CBCS SCHEME

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20MCA32

Third Semester MCA Degree Examination, Jan./Feb. 2023 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. Define IOT and discuss the genesis of IOT with evolutionary phases of internet. (04 Marks)
- b. Describe IOT world Forum standardized architecture. (06 Marks)
- c. Explain the IOT impacts in real world. (04 Marks)
- d. Explain with neat diagram, the one M2M IOT standardized architecture. (06 Marks)

OR

- 2 a. Explain IOT data management and compute stack. (08 Marks)
- b. Explain core IOT functional stack. (08 Marks)
- c. Write the different challenges of IOT. (04 Marks)

Module-2

- 3 a. Explain briefly the Wireless Sensor Networks (WSN). (06 Marks)
- b. Explain different communication criteria of IOT. (06 Marks)
- c. What is Zigber? Explain 802.15.4 physical layer, MAC layer, and security. (08 Marks)

OR

- 4 a. Define sensors and actuators. Explain how they interact with the physical world. (06 Marks)
- b. What is SANET? Explain some advantages and disadvantages that a wireless based solution offers. (06 Marks)
- c. List and explain different types of sensors. (08 Marks)

Module-3

- 5 a. What are the key advantages of Internet Protocol? Explain each of them. (05 Marks)
- b. Discuss the need for optimization. (05 Marks)
- c. Describe application protocol for IOT. (10 Marks)

OR

- 6 a. Explain 6TiSCH in detail. (10 Marks)
- b. Discuss various IOT application transport methods. (10 Marks)

Module-4

- 7 a. List the common challenges in OT security. Explain any 4 of them. (10 Marks)
- b. Explain any 2 Bigdata analytics tools and technology. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Discuss the following:
- i) Supervised learning
 - ii) Unsupervised learning
 - iii) Neural network.
- b. Explain OCTAVE and FAIR formal risk analysis.
- c. Explain edge streaming analytics in detail.

(06 Marks)

(06 Marks)

(08 Marks)

Module-5

- 9 a. What is Arduino? What are the advantages of Arduino?
- b. Explain the following with respect to the fundamentals of arduino programming:
- i) Structure
 - ii) Function
 - iii) Variables and data types
 - iv) Flow control statements.
- c. Explain IOT strategy for smart cities.

(05 Marks)

(10 Marks)

(05 Marks)

OR

- 10 a. With a neat diagram, explain Raspberry Pi board and its connections.
- b. Explain smart city IOT architecture.

(10 Marks)

(10 Marks)
