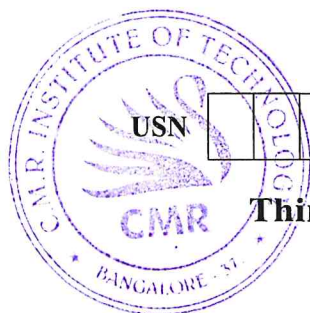


CBCS SCHEME



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20MCA32

Third Semester MCA Degree Examination, July/August 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. (08 Marks)
- b. What does IoT and Digitization mean? Elaborate "IoT impact on Real World". (08 Marks)
- c. Write a Python program to count the number of words and characters in a given string. (04 Marks)

OR

- 2 a. Discuss IoT challenges. (04 Marks)
- b. Explain the M2M IoT architecture with neat diagram. (08 Marks)
- c. Explain the Core IoT functional stack. (08 Marks)

Module-2

- 3 a. Define Sensors and Actuators. Explain how they interact with the physical world. (08 Marks)
- b. Define smart objects. Explain its characteristics. (08 Marks)
- c. Explain "IoT Access Technologies". (04 Marks)

OR

- 4 a. What is SANET? Explain some advantages and disadvantages that a wireless based solution offers. (08 Marks)
- b. Explain the LoRaWAN standardization and alliance, MAC layer. (08 Marks)
- c. Write a python program to find area of triangle using Heron's formula without using Math library. (04 Marks)

Module-3

- 5 a. Discuss various IoT application transport methods. (08 Marks)
- b. What is CoAP? Draw CoAP message format. Explain its all fields. (08 Marks)
- c. Write a note on generic web-based protocols. (04 Marks)

OR

- 6 a. Describe MQTT framework and message format in detail. (08 Marks)
- b. Explain the key advantages of Internet Protocol. (08 Marks)
- c. Compare between CoAP and MQTT. (04 Marks)

Module-4

- 7 a. Explain neural network in machine learning with a detailed example. (08 Marks)
- b. Discuss the different elements of Hadoop with a neat diagram. (08 Marks)
- c. Write a note on Massively Parallel Processing (MP) databases. (04 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 Big data analytics tools and technology. (08 Marks)
b. Explain the different steps and phases of OCTAVE Allegro methodology. (08 Marks)
c. Write a note on FAIR formal Risk Analysis. (04 Marks)

Module-5

- 9 a. Explain the different pins/parts of Arduino Uno Board. (08 Marks)
b. With a neat diagram, explain Raspberry Pi board. (08 Marks)
c. Write a Python program on Raspberry Pi to blink an LED. (04 Marks)

OR

- 10 a. Discuss the different layers of IoT Smart city Traffic architecture. (08 Marks)
b. With the case study, explain smart and connected parking using Raspberry Pi. (08 Marks)
c. What are the advantages and disadvantages of smart parking architecture? (04 Marks)
