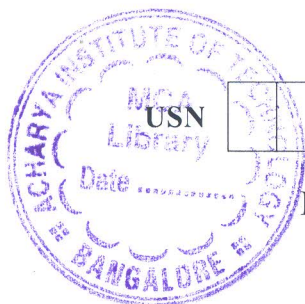


CBCS SCHEME

15CS81



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Eighth Semester B.E. Degree Examination, Jan./Feb. 2023 Internet of Things Technology

Time: 3 hrs.

Max. Marks:80

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. Explain access network sublayer with neat diagram. (08 Marks)

OR

- 2 a. Describe IOT World Forum (IOTWF) standardized architecture. (08 Marks)
b. Write a short note on IOT impact in real world. (08 Marks)

Module-2

- 3 a. With a neat diagram, explain how actuators and sensors interact with physical world. Classify actuators based on energy type. (08 Marks)
b. List out the limitations of the smart objects in WSNs and explain the data aggregation in WSN with a neat diagram. (08 Marks)

OR

- 4 a. What is Zigbee? Explain 802.15.4 physical layer, MAC layer, and security. (08 Marks)
b. Explain LoRaWAN standard and alliance MAC layer and security. (08 Marks)

Module-3

- 5 a. With a neat diagram, explain 6LOWPAN protocol header comparison and fragmentation. (08 Marks)
b. List and explain the key advantages of internet protocol. (04 Marks)
c. Explain RPL encryption and authentication on constraint nodes. (04 Marks)

OR

- 6 a. Explain tunneling legacy SCADA over IP networks and SCADA protocol translation with a neat diagram. (08 Marks)
b. Describe MQTT framework and message format in detail. (08 Marks)

Module-4

- 7 a. What are the ways IoT data is categorized? Explain in detail. (06 Marks)
b. Discuss the following :
i) Supervised learning
ii) Unsupervised learning
iii) Neural Networks. (10 Marks)

OR

- 8 a. Explain any two Big data analytics tools and technologies. (10 Marks)
b. Explain Lambda Architecture in details. (06 Marks)

Module-5

- 9 a. What is Arduino? What are the advantages of Arduino? (06 Marks)
b. How to install arduino software for the windows PCs? (10 Marks)

OR

- 10 a. Distinguish between Raspberry Pi and Arduino. (04 Marks)
b. Develop a python program which monitors a temperature of an engine using DS18B20 sensor and Raspberry Pi. (12 Marks)
