

CBCS SCHEME

18CS81



Eighth Semester B.E. Degree Examination, June/July 2023 Internet of Things

Max. Marks: 100

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

Module-1

- 1 a. Define IOT. Explain in detail IOT and digitization. (06 Marks)
- b. Explain in detail with any two example IOT impact. (08 Marks)
- c. Explain the different evolutionary phases of the Internet. (06 Marks)

OR

- 2 a. Explain different challenges of IOT. (04 Marks)
- b. Explain in detail IOT World Forum (IOTWF) Standard Architecture. (08 Marks)
- c. Explain expanded view of the simplified IOT Architecture. (08 Marks)

Module-2

- 3 a. List and explain different types of sensors (any 8) with an example each. (08 Marks)
- b. What are smart objects? With neat diagram, explain characteristics of smart object. (08 Marks)
- c. What are Actuators? Explain comparison of sensors and actuators functionality with human. (04 Marks)

OR

- 4 a. What is SANET? Explain some advantages and disadvantages that a wireless based solution offers. (06 Marks)
- b. Briefly explain protocol stack utilization IEEE 802.15.4. (08 Marks)
- c. List and explain in brief communication criteria. (06 Marks)

Module-3

- 5 a. Explain key advantages of Internet Protocol for the IOT. (08 Marks)
- b. Explain the need for optimization. (08 Marks)
- c. With a neat diagram, explain comparison of an IOT protocol stack utilizing 6LOWPAN and IP protocol stack. (04 Marks)

OR

- 6 a. Write notes on Supervisory Control and Data Acquisition (SCADA). (06 Marks)
- b. Explain with neat diagram Constrained Application Protocol (COAP) message format. (08 Marks)
- c. Explain in detail Message Queuing Telemetry Transport (MQTT) publish/subscribe frame. (06 Marks)

Module-4

- 7 a. Compare: (i) Structured versus unstructured data (ii) Data in motion versus data at rest (06 Marks)
- b. With neat diagram, explain Hadoop distributed cluster and writing a file to HDFS. (08 Marks)
- c. Explain Lambda Architecture. (06 Marks)

OR

- 8 a. Explain edge streaming analytics and functions of Edge Analytics Processing Unit. (10 Marks)
b. Explain in detail formal risk analysis structures. (10 Marks)

Module-5

- 9 a. Write notes on: (i) Arduino UNO (ii) Raspberry Pi (12 Marks)
b. With a neat diagram, explain wireless temperature monitoring system using Raspberry Pi. (08 Marks)

OR

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- 10 a. Explain IOT strategy for smarter cities. (10 Marks)
b. With neat smart cities Layered Architecture diagram, explain Smart City IOT Architecture. (10 Marks)
