

CBCS SCHEME

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15EC752

Seventh Semester B.E. Degree Examination, Aug./Sept. 2020 IOT and Wireless Sensor Networks

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Define IOT and explain vision of IoT? (04 Marks)
b. With neat sketch describe IoT architecture by IBM. (06 Marks)
c. Explain different development tools and open source implementation of IOT. (06 Marks)

OR

- 2 a. Explain 4 layered architecture frame work for a smart application developed by CISCO. (06 Marks)
b. Give JAVA Script Object (JSON) example in JAVA. (06 Marks)
c. Explain the features of ThingSpeak and Nimbits. (04 Marks)

Module-2

- 3 a. With neat sketch, explain the internet connectivity protocols where source and end network layer connected through set of IP routers. (06 Marks)
b. Explain the main features of IPV6 protocol. (06 Marks)
c. Explain with neat sketch UDP datagram format for transmission or header fields. (04 Marks)

OR

- 4 a. Explain the main characteristics of cloud computing. (06 Marks)
b. Explain in detail different types of cloud. (04 Marks)
c. With neat sketch explain the different cloud computing service models. (06 Marks)

Module-3

- 5 a. Explain the programming embedded device Arduinoplatform using IDE. (08 Marks)
b. Write the sample programming code for the arduino controlled traffic light at the road junction without any intervals by considering suitable inputs. (08 Marks)

OR

- 6 a. Explain with neat sketch five levels for software development for applications and services for IOT or M2M. (06 Marks)
b. Explain the security requirements in an IOT reference architecture and usage of 5 functions components in the security group of functions. (05 Marks)
c. With neat sketch explain the layered attacker model and possible attacks as the layers. (05 Marks)

Module-4

- 7 a. Explain the major challenges of wireless network. (08 Marks)
b. Explain the characteristics of the following :
i) MANETS (Mobile Ad-hoc Networks)
ii) Field Buses and WSN. (08 Marks)

OR

- 8 a. Explain single Hop network, Multihop network. (06 Marks)
b. Explain the design principles for WSN^s. (08 Marks)
c. Explain WSN Tunnelling. (02 Marks)

Module-5

- 9 a. Explain in detail S-MAC protocol. (06 Marks)
b. Explain LEACH protocol. (05 Marks)
c. Explain TRAMA protocol. (05 Marks)

OR

- 10 a. Explain in detail the address management in WSN^s. (08 Marks)
b. Explain the address assignment algorithm. (04 Marks)
c. Explain the properties required for various clustering in WSN^s. (04 Marks)
