R15

Code: 15A05805

B.Tech IV Year II Semester (R15) Regular Examinations April 2019
ENABLING TECHNOLOGIES FOR DATA SCIENCE ANALYTICS: IOT
(Computer Science & Engineering)

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
   (a)   Write the capabilities of IoT devices.
   (b)   What are the components of an IoT system?
   (c)   What are the differences between M2M and IoT in terms of devices and data collection?
   (d)   What are the limitations of SNMP protocol?
   (e)   Write the advantages of defining domain model in IoT design.
   (f)   What is the purpose and behavior of smart home automation system?
   (g)   What are the functionalities of DataNode and TaskTracker nodes in Hadoop cluster?
   (h)   What is the division of a 32-bit encoding scheme of 802.15.4 physical layer?
   (i)   Illustrate the auxiliary security header format of NWK level security of ZigBee.
   (j)   What is the advantage of having a set of defined public application profiles for ZigBee?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   Explain with a neat diagram about the dynamic and self-adapting characteristic of IoT devices in home automation.

OR

3   Explain about the IoT level-4 system.

UNIT – II

4   How machines in M2M network exchange data with respect to M2M gateway?

OR

5   Explain in brief about the key elements of a Software Defined Network (SDN).

UNIT – III

6   Brief notes on the IoT design methodology steps.

OR

7   Explain how the service specification step communicates with the information model step in home automation case study.

UNIT – IV

8   Explain the MapReduce job execution workflow.

OR

9   Explain with the illustration the beacon-enabled access control method of IEEE 802.15.4 MAC layer.

UNIT – V

10   Explain about meshed routing and tree based routing in ZigBee message routing.

OR

11   Briefly explain how network is formed in ZigBee based data communication.

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