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

(Computer Science & Engineering)

Max. Marks: 70

Time: 3 hours

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.

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- 4 How machines in M2M network exchange data with respect to M2M gateway?
- 5 Explain in brief about the key elements of a Software Defined Network (SDN).

UNIT – III

OR

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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