USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]   **15EC752**

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
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.   Draw the oracle reference architecture of IoT and mention its features.   **(08 Marks)**
    b.   Describe adaption layer gate way, data enrichment, data consolidation and device management functions.   **(08 Marks)**

OR

2   a.   Explain the modified OSI model for IoT/M2M systems. Explain COAP – SMS in brief.   **(08 Marks)**
    b.   Explain the features of XMPP with neat block diagram.   **(08 Marks)**

Module-2

3   a.   Compare the features in IPV_4 and IPV_6.   **(08 Marks)**
    b.   List the features of 6LOWPAN with neat diagram.   **(08 Marks)**

OR

4   a.   What are deployment models for cloud services for IoT applications?   **(08 Marks)**
    b.   Explain IoT cloud based data collection, storage and computing services using Nimbits.   **(08 Marks)**

Module-3

5   a.   List the additional features in Intel Galileo device plat form over Arduino, Tabulate for comparing the usages and features of IDE's for Raspberry P_i.   **(08 Marks)**
    b.   List five levels of software which need to be developed for applications and services for IoT and M2M. Write the features of Eclipse IoT stack.   **(08 Marks)**

OR

6   a.   What do you mean by trust? Define message privacy list the main vulnerabilities for attack?   **(08 Marks)**
    b.   Draw layered attacker model and explain the solutions for mitigating the attacks on the layer.   **(08 Marks)**

Module-4

7   a.   What are the challenges for wireless sensor networks, mention required mechanisms.   **(08 Marks)**
    b.   Explain hardware components of single node architecture of WSN with neat diagram.   **(08 Marks)**

OR

8   a.   Explain the transceiver structure with neat diagram and explain briefly the enabling technologies for wireless sensor networks.   **(08 Marks)**
    b.   Explain event based programming model for WSN, what is the need for gate way? Explain how WSN is connected to internet.   **(08 Marks)**

15EC752

Module-5

9 a. Explain the design considerations for physical layer and transceiver in brief. Mention how the mediation device protocol is helpful for achieving low duty cycle. **(08 Marks)**

  b. Explain SMACS and LEACH protocol with neat diagram. **(08 Marks)**

OR

10 a. What are the features to be considered for energy efficient routing explain in brief.

(08 Marks)

  b. Explain geographic routing in brief. **(08 Marks)**

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