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17EC752

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023
IOT and Wireless Sensor Network

Time: 3 hrs. Max. Marks: 100

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

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Explain ORACLE IOT conceptual framework with equation. **(10 Marks)**
b. Explain CO-AP/MQ and COAP/SMS messaging protocol **(10 Marks)**

OR

2 a. Explain the features of MQTT protocol. **(10 Marks)**
b. Explain the function of data-management and consolidation function With respect to IOT. **(10 Marks)**

Module-2

3 a. Explain IP addressing in the IOT. **(10 Marks)**
b. List the features of Nimbits. **(10 Marks)**

OR

4 a. Explain 6 LOW PAN protocol used in data adaptation layer. **(10 Marks)**
b. Explain cloud computing, services features and concerns. **(10 Marks)**

Module-3

5 a. Write a program to read analog sensor data (temperature) at SPI pot using Arduino board. **(10 Marks)**
b. Explain security tomography of large network and layered attack model. **(10 Marks)**

OR

6 a. Explain Prototyping Embedded Device using Arduino. **(10 Marks)**
b. What are the security requirements in IOT architecture and threat analysis using microsoft threat model. **(10 Marks)**

Module-4

7 a. Explain the challenges with respect to characteristics and the required mechanism in Wireless Sensor Network. **(10 Marks)**
b. Explain energy consumption of sensor node. **(10 Marks)**

OR

8 a. Explain design principles for Wireless Sensor Network. **(10 Marks)**
b. Explain Gateway concept used in communication. **(10 Marks)**

Module-5

9 a. Explain energy problems in MAC protocol. **(06 Marks)**
b. Explain TRAMA protocol. **(06 Marks)**
c. Explain any two consideration in energy efficient Unicast Routing with example. **(08 Marks)**

OR

10 a. Explain simple forwarding strategies and its problems in Geographical routing. **(10 Marks)**
b. With neat schematic diagram, explain CSMA protocol. **(10 Marks)**

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