USN | | | | | | | | | | **15EC752**

Seventh Semester B.E. Degree Examination, July/August 2022
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.   Explain IBM IoT conceptual frame work with a neat diagram   **(08 Marks)**
    b.   Explain in detail LWM2M with a neat diagram.   **(08 Marks)**

OR

2   a.   Explain with a block diagram Constrained Application Protocol (CoAP) in detail.   **(08 Marks)**
    b.   Explain the MQTT protocol with a neat diagram.   **(08 Marks)**

Module-2

3   a.   Explain 6LowPAN protocol with a neat diagram.   **(08 Marks)**
    b.   Explain IP addressing in IoT.   **(08 Marks)**

OR

4   a.   Explain the service models of cloud computing with a neat diagram.   **(08 Marks)**
    b.   Discuss with a neat diagram IoT cloud for application and service using Nimbits server.   **(08 Marks)**

Module-3

5   a.   Write a C/C++ program for Arduino controlled traffic –control lights using multithreading OS function.   **(10 Marks)**
    b.   Explain IoT security tomography and layered – attacker model.   **(06 Marks)**

OR

6   a.   Explain privacy, vulnerabilities and security requirements of IoT.   **(08 Marks)**
    b.   Explain Eclipse paho with java implementation of MQTT clients broker architecture.   **(08 Marks)**

Module-4

7   a.   Discuss the transceiver tasks and characteristics with its RF front end structure.   **(08 Marks)**
    b.   Discuss the energy consumption of sensor nodes in detail.   **(08 Marks)**

OR

8   a.   Discuss the application programming interfaces and its paradigms.   **(08 Marks)**
    b.   Explain the types of source and sink in a sensor communication network.   **(08 Marks)**

Module-5

9   a.   Explain S-MAC protocol with a neat diagram.   **(08 Marks)**
    b.   Explain low energy adaptive clustering hierarchy (LEACH) protocol in detail.   **(08 Marks)**

OR

10   a.   Explain multipath unicast routing protocol in detail.   **(08 Marks)**
    b.   Explain multihop clusters in an hierarchical networks.   **(08 Marks)**

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