CBCS SCHEME

USN | | | | | | | | | | |

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
Internet of Things and Applications

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1. a. Explain simplified IOT Architecture. **(12 Marks)**
   b. What does IOT and digitization mean, elaborate on this concept? **(08 Marks)**

OR

2. a. Explain the main drivers behind new IOT Architecture. **(08 Marks)**
   b. Discuss IOT challenges. **(04 Marks)**
   c. Explain core IOT functional stack. **(08 Marks)**

Module-2

3. a. Explain one M2M IOT standardized architecture? **(12 Marks)**
   b. With examples, explain 5 different types of sensor. **(08 Marks)**

OR

4. a. What is SANET? Explain some advantages and disadvantages that a wireless based solution offers? **(08 Marks)**
   b. Write short notes on wireless sensor Networks. **(06 Marks)**
   c. Briefly explain protocol stack utilization in IEE 802.15.4. **(06 Marks)**

Module-3

5. a. Explain with example MQTT protocol? What is the role of MQTT protocol IOT applications? **(12 Marks)**
   b. Explain adapting SCADA for IP with DNP3 as a representative use case. **(08 Marks)**

OR

6. a. List the categories of IOT application protocols and their transport methods. **(04 Marks)**
   b. Write short note on COAP, REST and XMPP. **(12 Marks)**
   c. What are the differences between adaptation and adoption of the internet protocols? **(04 Marks)**

Module-4

7. a. List and explain the Comparison between Big Data, Edge Analytics and Network analytics. **(12 Marks)**
   b. What are the common applications of machine learning in IOT? **(08 Marks)**

OR

8. a. What are the common challenges in OT security? **(06 Marks)**
   b. Explain the Purdue model for control Hierarchy. **(07 Marks)**
   c. Explain the functions of Edge Analytics. **(07 Marks)**

Module-5

9. a. Explain with an example a basic structure of Arduino programming. **(10 Marks)**
   b. Write a note on DS 18B20 temperature sensor? **(05 Marks)**
   c. Explain general commands for raspberry Pi? **(05 Marks)**

OR

10. a. With a neat sketch, explain street lighting system? **(10 Marks)**
    b. With a neat diagram, explain smart parking system. **(10 Marks)**

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