USN | | | | | | | | | | **18IC56**

Fifth Semester B.E. Degree Examination, Jan./Feb. 2023
Principles of Internet of Things

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1   a. What is IOT? Explain in detail on genesis of IOT.   **(08 Marks)**
    b. Explain the concept of Intersection Movement Assist (IMA) with graphical representation.
                                                                                            (06 Marks)
    c. Explain access network sub layer with a neat diagram.   **(06 Marks)**

OR

2   a. Explain the main elements of M2M IOT architecture.   **(10 Marks)**
    b. Explain the IOT reference model in detail.   **(10 Marks)**

Module-2

3   a. Discuss briefly sensors and smart objects.   **(10 Marks)**
    b. Explain Micro Electro Mechanical Systems (MEMS).   **(10 Marks)**

OR

4   a. What are constrained devices and constrained node networks? Classify them.   **(10 Marks)**
    b. Explain LoRaWAN standard and alliance MAC layer and security.   **(10 Marks)**

Module-3

5   a. Explain working of IP as the IOT network layer.   **(10 Marks)**
    b. Explain the main factors applicable to IPV4 and IPV6.   **(10 Marks)**

OR

6   a. Explain the COAP message fields in detail.   **(10 Marks)**
    b. Explain SCADA in detail.   **(10 Marks)**

Module-4

7   a. Explain in details the core functions of edge analytics with necessary diagrams.   **(10 Marks)**
    b. Explain Big data analytics tools and technology.   **(06 Marks)**
    c. Discuss briefly flexible net flow architecture.   **(04 Marks)**

OR

8   a. Explain formal RISK analysis structures OCTAVE and FAIR.   **(12 Marks)**
    b. Discuss briefly Purdue model.   **(08 Marks)**

Module-5

9   a. List out the advantages of Arduino.   **(08 Marks)**
    b. Describe the main parts of Arduino UNO learning board.   **(12 Marks)**

OR

10 a. List and explain the main parts of Raspberry Pi learning board.   **(10 Marks)**
    b. Briefly describes steps of O-S setup on Raspberry Pi.   **(10 Marks)**

* * * * *