CBCS SCHEME

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

18CS81

Eighth Semester B.E. Degree Examination, July/August 2022
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 Internet of Things (IoT)? Explain Genesis of IoT, with a neat diagram. (08 Marks)
    b.   Compare IT and OT Networks with different criterion. (08 Marks)
    c.   Explain different challenges faced by IoT. (04 Marks)

OR

2   a.   Explain One M2M IoT Standardized Architecture, with a neat diagram. (10 Marks)
    b.   What is a Fog Node? Explain characteristics of Fog Computing Model. (05 Marks)
    c.   Illustrate various access technologies with respect to distances in core IoT functional stack. (05 Marks)

Module-2

3   a.   Explain any 5 ways to group sensors into different categories. (05 Marks)
    b.   List any two advantages of Wireless based solution. Illustrate with a neat diagram, the interaction of Sensors and Actuators, with the Physical World. (07 Marks)
    c.   What is a Smart Object? Explain its characteristics. (08 Marks)

OR

4   a.   Explain the following key factors involved in connecting smart objects to the network :
         i)   Range   ii)   Frequency bonds. (10 Marks)
    b.   Explain IEEE 802.15.4 IoT Access technology. (10 Marks)

Module-3

5   a.   Explain the key advantages of IP suite for IoT. (05 Marks)
    b.   Explain 6 LOWPAN Protocol Header Compression and Fragmentation, with a neat diagram. (08 Marks)
    c.   Illustrate Routing Protocol for Low Power and Lossy Networks (RPL), with a neat diagram. (07 Marks)

OR

6   a.   Explain the message format of the following protocols with a neat diagram :
         i)   Constrained Application Protocol (CoAP).
         ii) Message Queuing Telemetry Transport (MQTT). (10 Marks)
    b.   Describe the Scheduling Management Mechanisms and forwarding Models and Supported by 6 TiSCH. (10 Marks)

Module-4

7   a.   Explain different types of Data Analysis results with example. (08 Marks)
    b.   Distinguish between Supervised and Unsupervised Machine Learning. (05 Marks)
    c.   Explain Elements of Hadoop, with a neat diagram. (07 Marks)