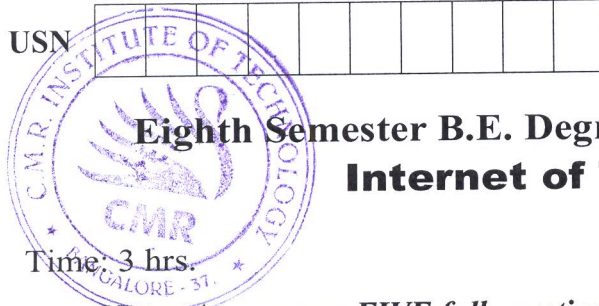USN | | | | | | | | | |

15CS81

Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024
Internet of Things Technology

Time: 3 hrs.

Max. Marks : 80

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. What does IOT and digitaization mean? Elaborate on this concept. **(04 Marks)**
   c. Write a short note on "IOT impact in Real World". **(04 Marks)**

OR

2 a. Discuss IOT challenges. **(08 Marks)**
   b. With a neat diagram, explain architecture of IOT. **(04 Marks)**
   c. Explain Core IOT functional stack. **(04 Marks)**

Module-2

3 a. Mention any six sensor types are measuring physical phenomenon and summarize each of them with suitable example. **(06 Marks)**
   b. Identify the characteristics of smart objects and illustrate them. **(06 Marks)**
   c. What are trends in smart object impacting IOT? Classify those. **(04 Marks)**

OR

4 a. Explain the physical layer, MAC layer, topology and security aspects of IEEE 802.15.4. **(08 Marks)**
   b. Dramatize LoRaWAN Architecture. **(05 Marks)**
   c. What NB-IOT deployment options and explain them. **(03 Marks)**

Module-3

5 a. Explain working of IP as the IOT network layer. **(08 Marks)**
   b. Write note on Busines case for IP. **(04 Marks)**
   c. Discuss need for optimization. **(04 Marks)**

OR

6 a. Describe application protocols for IOT. **(08 Marks)**
   b. Discuss the various methods used in IOT application transport. **(08 Marks)**

Module-4

7 a. Explain the elements of Hadoop with a neat diagram. **(07 Marks)**
   b. Explain neural network in machine learning with a detailed example. **(05 Marks)**
   c. Describe the components of FNF. **(04 Marks)**

OR

8 a. Explain Formal Risk Analysis Structures. **(08 Marks)**
   b. Explain the Purdue model for control hierarchy and OT network characteristics. **(08 Marks)**

Module-5

9 a. Give a brief note on Arduino UNO. (04 Marks)
   b. With a neat diagram, explain Raspberry P_i board. (04 Marks)
   c. With a neat diagram, explain wireless temperature monitoring system using Raspberry P_i. (08 Marks)

OR

10 a. Explain in detail smart city IOT architecture. (08 Marks)
    b. With the case study explain smart and connected cities using Raspberry Pi. (08 Marks)

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