USN | | | | | | | | | | **20ESP/ECS/EVE/ELD/EIE333**

Third Semester M.Tech. Degree Examination, Jan./Feb. 2023
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. Describe the framework of the digital ceiling. **(06 Marks)**
   b. Tabulate a few of the most significant challenges and problems that IoT is currently facing. **(08 Marks)**
   c. Summarize the layers of IoTWF reference model. **(06 Marks)**

OR

2 a. Tabulate and explain the evolutionary phases of the internet. **(06 Marks)**
   b. Tabulate the differences between IT and IoT networks, with a focus on the IoT requirements that are driving new network architectures and consider what adjustments are needed. **(08 Marks)**
   c. Elaborate in detail about simplified IoT Architecture. **(06 Marks)**

Module-2

3 a. Describe in detail about sensors and actuators layer with some examples. **(10 Marks)**
   b. Explain the IoT Data Management and compute stack with log computing with relevant diagrams. **(10 Marks)**

OR

4 a. Describe Gateways and Backhaul sublayer. Also tabulate the architectural considerations for WiMax and cellular technology. **(10 Marks)**
   b. Compare i) Analytics versus control applications
              ii) Data versus Network Analytics **(10 Marks)**

Module-3

5 a. Define smart object and describe the four defining characteristics of a smart object with suitable diagram. **(10 Marks)**
   b. Evaluate the protocols used for constrained node networks for use-case applicability. **(10 Marks)**

OR

6 a. Describe about WNS's and illustrate some of the assumptions and constraints involved in WSN's. **(10 Marks)**
   b. Explain protocol stacks utilizing IEEE 802.15.4 **(10 Marks)**

Module-4

7 a. Evaluate the key advantages of the IP suite for the Internet of Things. **(10 Marks)**
   b. Elaborate the two of the most popular protocols on IoT Application Layer. **(10 Marks)**

OR

8   a.   How to implement IP in data center, cloud services and operation centers hosting IoT applications using Adoption or Adaptation of the Internet Protocol.   **(10 Marks)**

      b.   Describe in detail about IoT Data Analytics on overview.   **(10 Marks)**

Module-5

9   a.   Explain the various zones and levels of activity in industrial automation and control systems reference model.   **(10 Marks)**

      b.   Describe smart city security architecture in detail.   **(10 Marks)**

OR

10   a.   Illustrate the Cisco Grid Blocks reference architecture in detail.   **(10 Marks)**

      b.   Explain : i) Smart city network architecture   ii) Smart street lighting.   **(10 Marks)**

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