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Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
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. In the context of Evolution of IoT, with neat diagram, illustrate the sequence of technological developments leading to the shaping of the modern day IoT. (06 Marks)
- b. With diagram, explain enabling IoT and the complex Interdependence of technologies. (08 Marks)
- c. Differentiate between the following :
 - (i) IoT versus M₂M.
 - (ii) IoT versus CPS.
 - (iii) IoT versus WoT. (06 Marks)

OR

- 2 a. With respect to the IoT networking components, define the following :
 - (i) IoT NODE.
 - (ii) IoT Router.
 - (iii) IoT LAN
 - (iv) IoT Gateway
 - (v) IoT Proxy (10 Marks)
- b. Discuss the following addressing strategies in IoT:
 - (i) Address Management Classes.
 - (ii) Addressing during node Mobility. (10 Marks)

Module-2

- 3 a. Define sensors and with diagram, outline the simple sensing operation. (04 Marks)
- b. Discuss Scalar and Vector sensors and draw the functional blocks of a typical sensor node in IoT. (06 Marks)
- c. With neat diagram, explain the different sensing types commonly encountered in IoT. (10 Marks)

OR

- 4 a. Define Actuator and with diagram, discuss the outline of a simple actuation mechanism. (04 Marks)
- b. Explain the various actuators classes any 5 in IoT. (10 Marks)
- c. Discuss actuator characteristics that define all actuators. (06 Marks)

Module-3

- 5 a. List and discuss common data types used in IoT applications. (06 Marks)
- b. Explain the various processing topologies in IoT with necessary diagrams. (08 Marks)
- c. Illustrate the importance of processing in IoT. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 6 a. With neat diagram, explain the processing offloading paradigm for the development of IoT-based solutions. (10 Marks)
- b. Determine the importance of choosing the right processing topologies and associated considerations while designing IoT applications. (10 Marks)

Module-4

- 7 a. List common connectivity protocols in IoT. (04 Marks)
- b. Explain the salient features and application scope of any 5 connectivity protocols. (10 Marks)
- c. Differentiate between Wi-Fi and Bluetooth connectivity protocols in IoT. (06 Marks)

OR

- 8 a. With necessary diagrams, explain in detail any four connectivity protocols in IoT. (10 Marks)
- b. Determine the requirements associated with any of IoT connectivity protocols in real-world solutions. (10 Marks)

Module-5

- 9 a. Describe in detail, the various Infrastructure protocols in IoT-based communication technologies. (10 Marks)
- b. Explain the following discovery protocols : (10 Marks)
- (i) Physical Web
 - (ii) mDNS
 - (iii) Universal plug and play (UPnP).

OR

- 10 a. With neat diagram, discuss the illustration of the various facets of the Interoperability in IoT. (10 Marks)
- b. Discuss any four IoT Interoperability standards. (10 Marks)

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