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017504

December 2023

B.Tech. (EEIoT) - Vth SEMESTER

Essentials of Internet of Things (EE-IoT- 501)

Time : 3 Hours]   [Max. Marks : 75

Instructions :

1.   It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.

2.   Answer any four questions from Part-B in detail.

3.   Different sub-parts of a question are to be attempted adjacent to each other.

PART–A

1. (a) How is IoT beneficial in our daily life need? Explain with some examples.   (1.5)

(b) Define the mainframe architecture of IoT.   (1.5)

(c) What are the protocols needed in web connectivity in IoT applications?   (1.5)

(d) Differentiate IoT with M2M with minimum 5 important points.   (1.5)

(e) Explain the functionality of IoT network management sublayer.   (1.5)

(f) Explain the various emerging features IoT.   (1.5)

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(g) What is cloud computing? How is it play important role in IoT? (1.5)

(h) Explain the access network sublayer with a neat diagram. (1.5)

(i) What is MAC protocol? Discuss its routing. (1.5)

(j) Define the following : (1.5)
(1) IPv6 (2) 6LoWPAN (3) API's

PART–B

2. (a) Explain simplified IoT architecture with diagram. (10)

(b) Discuss IoT challenges and solutions. (5)

3. (a) Explain various trend in Information and communication technologies and its impact on IoT. (5)

(b) Explain the potential and benefits of an IoT oriented approach over M2M by considering a health band as the real-world use case example. (10)

4. Explain the RFID Principles and its components for IoT application. And discuss the importance of wireless sensor networks in IoT. (15)

5. (a) Identify the key characteristics of M2M data. Also, explain the data generation, data acquisition, data validation steps in M2M data management. (5)

(b) Compare Arduino Uno and Raspberry Pi on its uses in IoT in details. (10)

6. (a) Identify the role of WPAN Technologies for IoT in terms of IEEE 802.15.4, HART, REST, AMPQ, CoAP. (10)

(b) Discuss data aggregation & dissemination in details. (5)

7. Explain the deployment and operational view, resources, services, owner's functions in an IoT system for industrial rnanufaciuring. (15)

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