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B033415(033)

B. Tech. (Fourth Semester) Examination, April-May 2022

(AICTE Scheme)

(Information & Technology Engg. Branch)

INTERNET of THINGS

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : *Each questions part (a)carries 4 marks and from part (b), (c) and (d) carries 8 marks. Attempt any **two** parts from (b), (c) and (d) on each question.*

Unit-I

1. (a) Why do IoT systems have to be self-adaptive and self-configuring?

(b) What is IoT? Describe in detail about IoT eco-system.

(c) Explain different IoT Protocols with diagram.

(d) Describe different communication models of IoT. Explain publish-subscribe and request-response communication model.

Unit-II

2. (a) Which communication protocol are used for M2M local area networks?

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

(c) Differentiate between conventional network architecture and SDN architecture with proper diagram.

(d) Write differences between machines in M2M and things in IoT.

Unit-III

3. (a) Define MAC. Explain design issues of MAC Protocol.

(b) Describe routing in IoT. Explain types of routing protocol used in IoT.

(c) How CORPL differs from RPL? Discuss CORPL with an IoT application.

(d) Write short notes on :

(i) Sensor deployment and node discovery

(ii) Data aggregation and dissemination

Unit-IV

4. (a) Write main challenges of Internet of Things (IoT).

(b) Describe application of IoT in home automation.

(c) Explain IoT cloud based data collection, storage and computing services.

(d) Write short notes on :

(i) Smart Agriculture

(ii) Smart Supply Chain

Unit-V

5. (a) Why python is preferred as a lanugage for IoT devices?

(b) Why are the functions needed? Outline various function definition and call in python with example.

(c) Draw a layout of the Rasberry-Pi board. Explain the components of the board by a diagram.

(d) Discuss the role of Data Analysis in Internet of Things (IoT).