7E1721

B. Tech. VII - Sem. (Main) Exam., Feb.- March - 2021
PCC Computer Science & Engineering
7CS4 – 01 Internet of Things

Time: 2 Hours

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[To be converted as per scheme]
Max. Marks: 82
Min. Marks: 29

Instructions to Candidates:

Attempt all ten questions from Part A, four questions out of seven questions from Part B and two questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A

(Answer should be given up to 25 words only)   [10×2=20]
All questions are compulsory

Q.1 What is wireless sensor network?

Q.2 What is big-data and why we are using big-data in IoT?

Q.3 What is cloud computing?

Q.4 Differentiate between WiFi and WiMax.

Q.5 What is the role of controller service in an IoT system?

Q.6 How do data collection and analysis approaches differ in M2M and IoT?

Q.7 What instruction set architecture is used in Raspberry Pi?

Q.8 How to collect data in structural health monitoring system?

Q.9 What are the architectural constraints of REST?

Q.10 How to monitor Air-Pollution?

PART – B

(Analytical/Problem solving questions) [4×8=32]

Attempt any four questions

Q.1 Explain about IoT Communication APIs in detail.

Q.2 Describe functional view specification of IoT design methodology.

Q.3 Describe home automation in domain specific IoT.

Q.4 Explain about interfacing an LED and switch with Raspberry Pi.

Q.5 Differentiate between IoT and M2M.

Q.6 What is IEEE 802.15.4 protocol? How it is related to IoT?

Q.7 What is the difference between sensors and actuators? Explain with an example.

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [2×15=30]

Attempt any two questions

Q.1 What is the function of communication functional block in an IoT system? What are the other components of a complete IoT system? Explain with diagram.

Q.2 What are the different layers of IoT protocols? Explain functions of all the layers.

Q.3 Explain IoT cloud based data collection, storage and computing services.

Q.4 Explain in detail about network function virtualization.

Q.5 Design and implement the functionality of a home intrusion detection IoT system by interfacing a webcam. Implement the function in the controller to capture the image from webcam and send it as an attachment in the email alert when an intrusion is detected.