7E1721

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B.Tech. VII - Sem. (Main/Back) Examination, January - 2023
Computer Science And Engineering
7CS4-01 Internet of Things

Time : 3 Hours **Maximum Marks : 120**

Min. Passing Marks : 42

Instructions to Candidates:

*Attempt **All Ten** questions from **Part A**, **Five** questions out of **Seven** from **Part B** and **Four** questions out of **Five** from **Part C**.*

Schematic diagrams must be shown wherever necessary. Any data you feel missing 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)

PART - A

(Answer should be given upto 25 words only)

ALL questions are compulsory. **(10×2=20)**

1. Define the Internet of Things.
2. What is the use of communication APIs in IoT?
3. What is the difference between Wireless Sensor Network and IoT?
4. Compare the boards Arduino Uno and Raspberry Pi with respect to its support to speed, memory and storage.
5. How soil moisture sensor works? Give two applications of soil moisture sensor.
6. What is Uniform Resource Identifier?
7. List any four security challenges in IoT.
8. What are the differences between IoT and M2M communication?
9. What is Software Defined Network?
10. How IoT is useful in the smart cities?

PART - B

(Analytical/Problem solving questions)

Attempt any FIVE questions. **(5×8=40)**

1. Describe the types of various IoT enabled technologies.
2. Explain the two application layer protocols that are used in IoT networks.

3. Explain with a diagram the interfacing pins for input and output on Raspberry Pi board.
4. Design an IoT application using humidity sensor.
5. Describe what the API is. To better understand how Rest and Restful APIs function, please give an example that is both appropriate and comprehensible.
6. What are the features of Routing Protocol for Low Power and Lossy Networks (RPL)?
7. Design a smart fridge using IoT technologies.

PART - C

(Descriptive/Analytical/Problem Solving/Design questions)

Attempt any FOUR questions. **(4×15=60)**

1. What distinguishes the Physical design of the Internet of Things from its Logical counterpart? Explain.
2. Describe the basic components of IoT-A reference model.
3. What is semantic interoperability? Why do we need it?
4. Describe network functions virtualization.
5. Explain the various areas in the agriculture domain that IoT is making an impact.