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Total No. of Printed Pages: 1

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B. Tech (CSE) (Semester – 8th)

INTERNET OF THINGS

Subject Code: BCSED1812

Paper ID: [18111149]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. Define IoT and explain how it works in simple terms.
- b. What is the difference between an Embedded Device and an IoT Device?
- c. List any two properties of IoT devices.
- d. What is the IoT Ecosystem?
- e. Explain the IoT Decision Framework in brief.
- f. What are Micro-Electromechanical Systems (MEMS)?
- g. State one privacy issue commonly associated with IoT devices.
- h. What is PageRank? How does it rank web pages?
- i. Explain Shodan.
- j. What is the function of a sensor in an IoT system?.

Section – B

(5 marks each)

- Q2. Explain how the IoT decision framework helps in designing an IoT system.
- Q3. Describe the working of a Raspberry Pi and its application in an IoT project..
- Q4. Explain how IoT devices communicate with each other. What are the different types of communication technologies used in IoT?
- Q5. Discuss the major differences between short-range and long-range wireless communication devices used in IoT. Include examples.
- Q6. Discuss Actuators & micro electro mechanical system.

Section – C

(10 marks each)

- Q7. What are the key IoT protocols used at the Data Link and Network Layer? Discuss their properties and how they contribute to IoT communication. Compare the communication characteristics of Wi-Fi, ZigBee, and LPWAN..
- Q8. Discuss the security and privacy concerns in IoT devices. What measures can be taken to ensure IoT security?
- Q9. Design a simple IoT solution for a smart home using a Raspberry Pi. Discuss the sensors, actuators, communication protocols, and architecture you would use.