

Aliah University

Odd (Autumn)-Semester Examination - 2023
(For 4th Year 7th Semester B.Tech Programme)

Paper Name: Professional Elective – II (Internet of Things)
Paper Code: CSEUGPE12

Full Marks: 80
Time: 3 Hrs

Group – A

(Answer any 6 questions)

(6X5=30)

- ✓ 1. Describe the key aspects of activity monitoring in IoT.
- ✓ 2. What is Industrial IoT (IIoT)? How does it differ from consumer IoT?
3. Explain the role of sensors and actuators in IoT through an example.
- ✓ 4. Describe the Zig Bee Network with a diagram.
- ✓ 5. What is interoperability? Why is it important in IoT?
- ✓ 6. What is fog computing? How does it differ from cloud computing?
- ✓ 7. Write an Arduino code to design a smoke detector with proper comments and output.

Group – B (Answer any 5 questions) (10X5=50)

- ✓ 1. How data gathered from IoT devices is used for improving agriculture, healthcare, and activity monitoring? 3+3+4
- ✓ 2. Describe and differentiate IoT, IoMT, WSN, WBAN and WBSN. 2+2+2+2+2
- ✓ 3. What are the challenges in implementing IoT in connected vehicles, smart grids, and Industrial IoT? 3+3+4
- ✓ 4. Draw a diagram with all the key components in each of the tiers in a smart city. 10
- ✓ 5. How does M2M communication differ from human-to-human communication? What role does M2M communication play in IoT? Discuss some applications of M2M communication. 3+4+3
6. Write an Arduino code to design a smart home climate control having a heater and fan control. The fan will switch on if the humidity goes above 85 percent and the heater will switch on when the temperature goes below 20 degrees Celsius. Give proper commenting in the code and output along with a pin diagram in an Arduino uno board. 10

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