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17EC752

## Seventh Semester B.E. Degree Examination, July/August 2022 IOT and Wireless Sensor Networks

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define IOT and explain IOT reference model suggested by CISCO. (10 Marks)
- b. Explain any two IOT conceptual frameworks in detail. (10 Marks)

**OR**

- 2 a. With a neat diagram, explain M2M architecture. (10 Marks)
- b. Explain MQTT and XMPP protocols for IOT. (10 Marks)

### Module-2

- 3 a. Explain IPV4 header format. (10 Marks)
- b. Write a note on: i) IPV6 addressing ii) HTTP protocol and its ports. (10 Marks)

**OR**

- 4 a. Explain cloud-based data collection storage and computing services. (10 Marks)
- b. Explain cloud service models. (10 Marks)

### Module-3

- 5 a. Explain how Arduino platform is programmed using IDE. (10 Marks)
- b. Describe how the data is read from sensors and devices. (10 Marks)

**OR**

- 6 a. Explain with a neat diagram of Microsoft threat analysis model. (10 Marks)
- b. Explain layered attacks model with possible attacks and suggest solutions for mitigating attacks. (10 Marks)

### Module-4

- 7 a. Explain single mode architecture of WSN with neat diagram. (10 Marks)
- b. Explain enabling technologies and characteristics requirement of WSN. (10 Marks)

**OR**

- 8 a. Explain process based and event based programming. (10 Marks)
- b. With neat diagram, explain the operation of gateways. (10 Marks)

### Module-5

- 9 a. Explain low duty cycle and wake-up concepts in WSN. (10 Marks)
- b. With neat diagram, explain CSMA protocol. (10 Marks)

**OR**

- 10 a. With neat diagram, explain LEACH protocol. (10 Marks)
- b. Write a note on:
  - i) SMAC protocol
  - ii) Energy efficient unicast routing. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.