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15CS81

Eighth Semester B.E. Degree Examination, July/August 2021 Internet of Things and Applications

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. What is IOT? Explain in detail on genesis of IOT. (08 Marks)
b. Explain access network sublayer with neat diagram. (08 Marks)
- 2 a. Describe IOT World Forum (IOTWF) standardized architecture. (08 Marks)
b. Write a short note on IOT impact in real world. (08 Marks)
- 3 a. What is Zigbee? Explain high level zigbee protocol stack. (08 Marks)
b. Discuss the universal deployments categories of IEEE 802.15.4 protocol. (08 Marks)
- 4 a. Explain LoRaWAN layers architecture and LoRaWAN security. (08 Marks)
b. What are Actuators? Give the comparison of sensors and actuator functionalities with humans. (08 Marks)
- 5 a. What are the key advantages of Internet Protocol (IP)? Explain each of them. (08 Marks)
b. Explain DIO and DAO messages movement through RPL overview. (08 Marks)
- 6 a. Discuss the IOT application transport methods (i) Rawsocket scenario for legacy SCADA server. (08 Marks)
b. Discuss the IOT application transport method (i) Message Queuing Telemetry Transport (MQTT). (08 Marks)
- 7 a. Explain different types of data analytics. (08 Marks)
b. Illustrate Lambda Architecture. (08 Marks)
- 8 a. List the common challenges in OT security, explain any four of them. (08 Marks)
b. Describe the Perdue model for control hierarchy. (08 Marks)
- 9 a. Demonstrate the Arduino programming fundamental and pin configurations. (08 Marks)
b. Interface temperature sensor to the Arduino. (08 Marks)
- 10 a. Describe the Raspberry Pi architecture. (08 Marks)
b. Write about Python syntax. (08 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.