Question Paper Code: 95302

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Fifth Semester

Electrical and Electronics Engineering

19UEE502 – INTERNET OF THINGS FOR ELECTRICAL AUTOMATION

(Regulations 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following IoT networks has a very short range?   CO1- R

   (a) Short Network   (b) LPWAN   (c)SigFox   (d) Short-range Wireless Network

2. How many numbers of the element in the open IoT architecture?   CO1- R

   (a) Four elements   (b) Five elements   (c) Six elements   (d) Seven elements

3. The function of a sensor is to   CO2- R

   (a) Detect events within specified environment   (b) Separate physical parameters

   (c) Track and transfer data to computer processor   (d) Both a and c

4. A Sensor is a   CO2- R

   (a) Subsystem   (b) Machine   (c) Module   (d) All the above

5. A valve positioner   CO3- R

   (a) Takes the place of a cascade control system

   (b) Provides more precise valve position

   (c) Makes a pneumatic controller in necessary

   (d) Provides a remote indication of valve position

6. Pressure transducer for measuring blood pressure is   CO3- R

   (a) Strain gauge transducer only   (b) Resistive transducer

   (c) Fiber optic transducer   (d) Strain gauge or capacitive transducer

7. The clock speed of raspberry pi model B+ is around   CO4- R

   (a) 100MHz   (b) 300MHz   (c) 500MHz   (d) 700MHz

8. How many ports does raspberry pi zero WH contain?   CO4- R

   (a) One   (b) Two   (c) Three   (d) Four

9. In a Smart Grid ECO System, a normal consumer is expected to be able to turn to   CO5- R

   (a) a non-consumer   (b) a careful consumer

   (c) a prosumer   (d) Both careful consumer and prosumer

10. POWERGRID has demonstrated the Smart Grid Technology capabilities in   CO5- R
    collaboration with various solution providers at

    (a) Bengaluru   (b) Mysore   (c) Puducherry   (d) New Delhi

PART – B (5 x 2= 10Marks)

11. Define Wireless Sensor Networks   CO1- U

12. Distinguish between position sensors and light sensors.   CO2- U

13. Whether stepper motor is example for actuator? if yes mean analyze it.   CO3- U

14. What are the advantages of Arduino uno board?   CO4- U

15. What are the advantages of smart home technology?   CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) Define IoT. Summarize the various applications of IoT.   CO1-U   (16)

                                        Or

    (b) Discuss about IoT communication model.   CO1-U   (16)

17. (a) Discuss in detail about Selection of Sensors for Practical   CO2-Ana (16)
        Applications

                                        Or

    (b) How is the water level sensed in washing machines? Sketch the   CO2-Ana (16)
        Sensor and explain its operation.

18. (a) Discuss in detail about Selection of Sensors for Practical CO3- Ana (16)
        Applications.

                                        Or

    (b) Distinguish the semiconductor strain gauges and explain them in detail   CO3- Ana (16)

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19. (a) Sketch and explain the pin diagram of Arduino uno board and also explain the function of each pin   CO4- App   (16)

<div align="center">Or</div>

(b) Explain in detail about Building IOT with RASPERRY PI with neat diagram   CO4- App   (16)

20. (a) Demonstrate the concept of IoT in smart city design   CO5- App   (16)

<div align="center">Or</div>

(b) With neat diagram demonstrate the concept of electric vehicle charging station.   CO5- App   (16)

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