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**Question Paper Code: 95302**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Fifth Semester

Electrical and Electronics Engineering

19UEE502 – INTERNET OF THINGS FOR ELECTRICAL AUTOMATION

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following is the way in which an IoT device is associated with data? CO1- R  
(a) Internet (b) Cloud (c) Automata (d) 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. Capacitive transducers are normally employed for \_\_\_\_\_ measurements. CO2- R  
(a) Dynamic (b) Static  
(c) Both static and dynamic (d) Transient
4. A Sensor is a CO2- R  
(a) Subsystem (b) Machine (c) Module (d) All the above
5. The difference between the measured value and the true value is called CO3- R  
(a) Relative error (b) Absolute error (c) Probable error (d) Gross error
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 much memory does raspberry pi model B+ have? CO4- R  
 (a) 512 MB                      (b) 612 MB                      (c) 712 MB                      (d) 812 MB
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. Differentiate between Logical and physical design of IoT. CO1- U
12. Distinguish the photo voltaic sensors from photo resistive sensors. CO2- U
13. Whether stepper motor is example for actuator? if yes mean analyze it. CO3- U
14. Write the steps to program an Arduino. CO4- U
15. What are the advantages of smart home technology? CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) Illustrate the various IoT communication APIs. CO1-U      (16)  
 Or  
 (b) Discuss about IoT communication model. CO1-U      (16)
17. (a) Define thermal sensor. Differentiate various temperature sensors based on its working. CO2-Ana      (16)  
 Or  
 (b) How is the water level sensed in washing machines? Sketch the sensor and explain its operation. CO2-Ana      (16)
18. (a) Draw and explain various types of motion involved in mechanical actuation systems. CO3- Ana      (16)  
 Or  
 (b) Sketch the Solid-state switches sensor and explain its operation CO3- Ana      (16)

19. (a) Design your own Arduino uno board and explain the types of peripheral interfaces used in Arduino uno. CO4- App (16)
- Or
- (b) Demonstrate the concept of File Handling in python with example. CO4- App (16)
20. (a) Construct the Smart traffic control system using IoT. CO5- App (16)
- Or
- (b) With neat diagram demonstrate the concept of electric vehicle charging station. CO5- App (16)

