Reg. No. :

Question Paper Code: 1087247

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV / DEC 2024
Seventh Semester
Agricultural Engineering
U20AG731 – INTERNET OF THINGS AND ITS APPLICATION
(Regulation 2020)

Time: Three Hours Maximum: 100 Marks

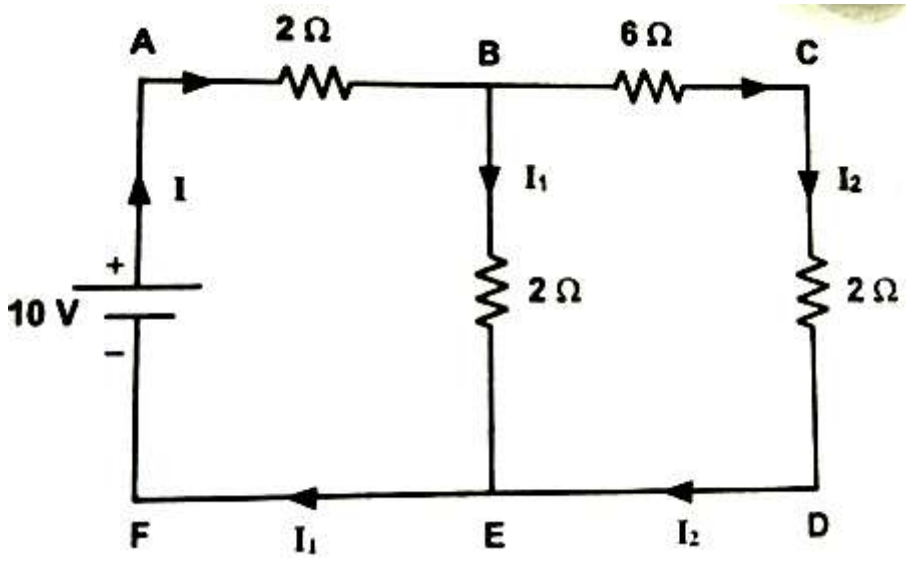
Answer ALL questions

PART – A (10 x 2 = 20 Marks)

1. Classify the types of voltage.
2. Outline the ways to read the resistor color code.
3. Interpret the role of microprocessors and microcontrollers in IOT.
4. Summarize the characteristics of IOT.
5. Define Sensors and actuators. Interpret how they interact with each other.
6. Develop a sketch to control the brightness (fade) of LED using potentiometer.
7. Spcify the operating systems used in RPi.
8. Name the five status LEDs used in Raspberry Pi.
9. Show the process specification for a home automation IoT system.
10. Identify the IOT level corresponding to weather monitoring and Justify your answer.

PART – B (5 x 16 = 80 Marks)

11. (a) Apply KCL and KVL to find the current in the following circuit in each branch. (16)



(OR)

(b) When two resistors are connected in series, the equivalent resistance is 90Ω. When connected in parallel, the equivalent resistance is 20 Ω. Identify the value for each resistor. (16)

12. (a) Interpret the general block diagram of IoT with suitable diagrams. (16)

(OR)

(b) Discuss the IOT communication models with neat diagrams. (16)

13. (a) (i) Build a sketch to toggle the LED each time when the button is pressed using Arduino programming. (8)
(ii) Explain about SPI, UART and I2C pins in Arduino in detail. (8)

(OR)

(b) Build loT based Air Pollution Monitoring System by selecting suitable sensors and actuators using Arduino UNO. (16)

14. (a) Illustrate the use of python packages in Raspberry Pi. (16)

(OR)

(b) (i) Compare the characteristics of Arduino and Raspberry Pi. (8)
(ii) Demonstrate a Python Script to turn the LED on and off. (8)

15. (a) Build an IoT based home intrusion system by selecting suitable sensors and actuators. (16)

(OR)

(b) Develop a model for smart parking application by listing the sensors and actuators used and storage system. (16)

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