



SNS COLLEGE OF ENGINEERING

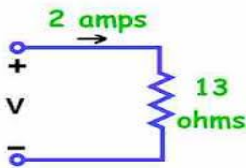
Kurumbapalayam(Po), Coimbatore – 641 107



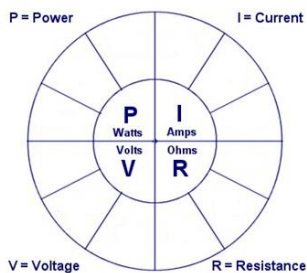
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

UNIT I: ELECTRICAL CIRCUITS AND MEASUREMENTS

1. Applying ohm's law, calculate the voltage, power in below electrical DC circuit



2. From this two equation combinations fill the bellow Circle:



3. Resistance of an electric iron 50Ω . $4.2A$ Current flows through the resistance. Find the voltage between two points.

CHOOSE THE BEST ANSWER

4. An electric heater draws $3.5 A$ from a $110 V$ source. The resistance of the heating element is approximately

A. 385Ω B. 38.5Ω

C. 3.1Ω D. 31Ω

5. If $750 \mu A$ is flowing through $11 k$ of resistance, what is the voltage drop across the resistor?

A. $8.25 V$ B. $82.5 V$

C. $14.6 V$ D. $146 V$

6. The formula to find I when the values of V and R are known is

A. $I = VR$ B. $I = R/V$

C. $V = IR$ D. $I = V/R$

7. A resistor is connected across a 50 V source. What is the current in the resistor if the color code is red, orange, orange, silver?

A. 2 mA B. 2.2 mA

C. 214 mA D. 21.4 mA

8. Approximately how many milliamperes of current flow through a circuit with a 40 V source and 6.8 k of resistance?

A. 27.2 mA B. 59 mA

C. 5.9 mA D. 590 mA

9. Ohms law, at Constant Temperature: Current is _____ Voltage (Relation)

10. Ohms law is applicable to _____

11. Resistance is _____ element?

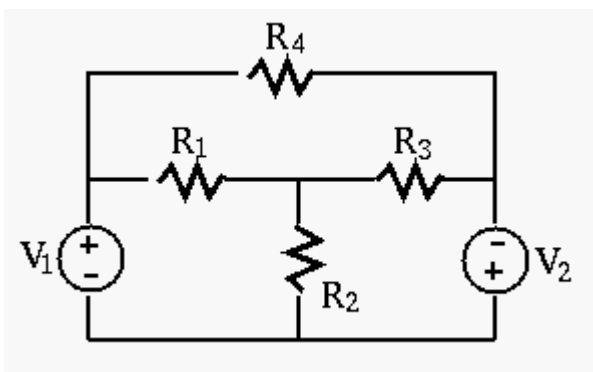
12. Open Circuit Current and voltage of a circuit $V = _ I = _$

13. Short Circuit Voltage and current and Voltage

14. Power Dissipation of Open and Short Circuit is _____

KVL and KCL

1. Find all node voltages with respect to the top-left corner treated as reference node:



$V_1 = 12V$ $V_2 = 6V$ $R_1 = 3\Omega$ $R_2 = 8\Omega$ $R_3 = 6\Omega$ $R_4 = 4\Omega$

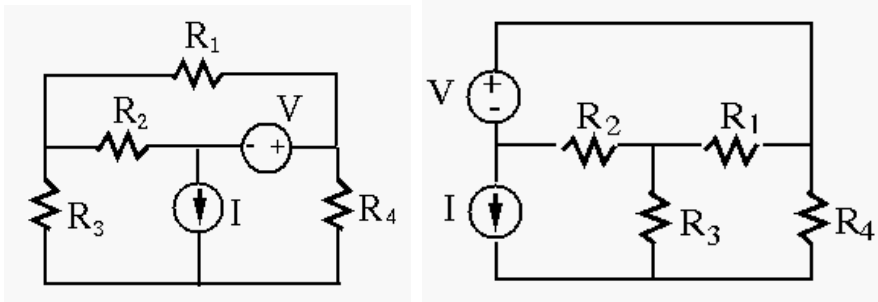
Note: While using node voltage and loop current methods to solve a given circuit, to simplify the analysis, it is preferable to

- choose independent loops to avoid current source shared by two loops,
- Choose ground node so that the voltage source is connected to ground.

2. The two circuits shown below are equivalent, but you may want to choose wisely in terms of which is easier to analyze. Solve this circuit using both node voltage and loop current methods. Assume

$$R_1 = 100\Omega \quad R_2 = 5\Omega \quad R_3 = 200\Omega \quad R_4 = 50\Omega$$

$$V = 50V \text{ and } I = 0.2A.$$



3. Find the RMS Value of **Sine wave**, Square wave and Triangular wave

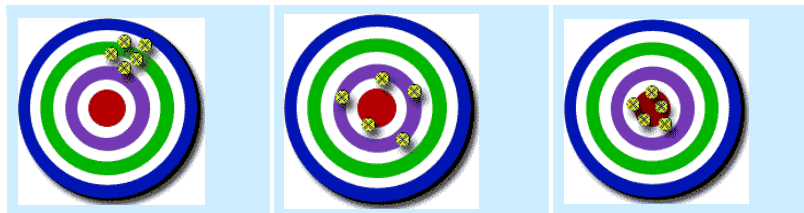
4. Find the Power Factor of $V= 230$, $I=5$ A , $P= 5$ KW

5. Problem

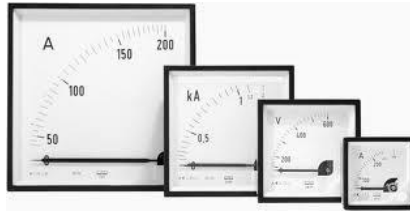
Exercise

1. Match the following

- a. Low Accuracy High Precision
- b. High Accuracy Low Precision
- c. High Accuracy High Precision



2. Name the type of display device used in the instruments



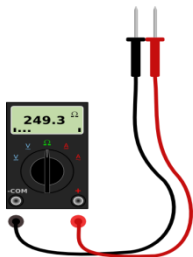
3. Mention the units of measurements



4. These are ----- devices



5. Tick the odd one



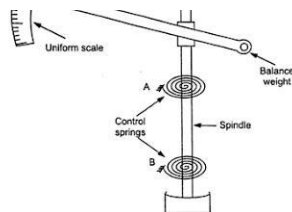


6. What are the forces applicable to work PMMC instruments

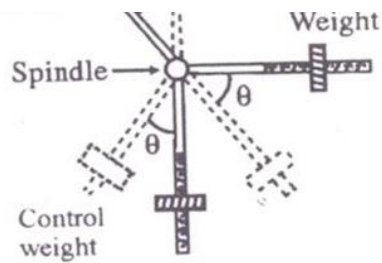


7. What are the Control Methods Available ?

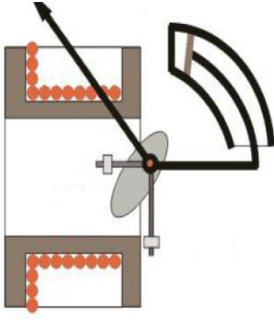
a.



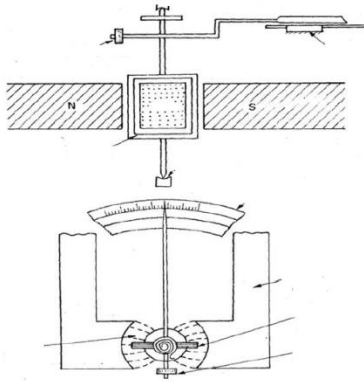
b.



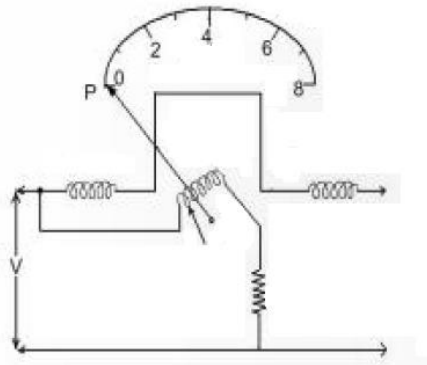
10. Mark the Parts of PMMI – Attraction Type



11. Mark the parts of Permanent Magnet Moving Coil (PMMC)



12. Mark the Parts of Dynamometer Type Watt Meter



13. Mark the Parts of Energy Meter

