

## QUIZ – ANSWER KEY

QUIZ NO: 120

TOPIC: ELECTRICAL ENGINEERING

DATE: 07/11/2022

1. Resistance of a wire is  $y\Omega$ . The wire is stretched to triple its length, then the resistance becomes \_\_\_\_\_?

[A]  $y/3$

[B]  $3y$

[C]  $6y$

[D]  $y/6$

**Answer: B**

**Explanation:** Resistance of a conductor is directly proportional to its length. That is, when the length of conductor is tripled, its resistance also gets tripled.

2. An electric current of 10 A is the same as \_\_\_\_\_ ?

[A] 10 J/C

[B] 10 V/C

[C] 10C/sec

[D] 10 W/sec

**Answer: C**

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**Explanation:** Mathematically, electric current can be defined as the ratio of the charge to the time in which charge flows.

3. Consider a circuit with two unequal resistances in parallel, then \_\_\_\_\_ ?

- [A] large current flows in large resistor
- [B] current is same in both
- [C] potential difference across each is same
- [D] smaller resistance has smaller conductance

**Answer: C**

**Explanation:** In parallel combination of resistors, the potential difference across each resistors is the same.

4. In which of the following cases is Ohm's law not applicable ?

- [A] Electrolytes
- [B] Arc lamps
- [C] Insulators
- [D] Vacuum ratio values

**Answer: C**

**Explanation:** According to Ohm's law, it is applicable only to conductors. Hence, Ohm's law is not applicable in case of insulators.

5. A copper wire of length  $l$  and diameter  $d$  has potential difference  $V$  applied at its two ends. The drift velocity is  $V$ . If the diameter of wire is made  $d/4$ , then drift velocity becomes \_\_\_\_\_ ?

[A]  $V/16$

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[B] 16V

[C] V

[D] V/4

**Answer: B**

**Explanation:** Drift velocity is inversely proportional to area of material i.e,  
 $V = I/nAq$ .

6. Which of the following bulbs will have high resistance?

[A] 220V, 60W

[B] 220V, 100W

[C] 115V, 60W

[D] 115V, 100 W

**Answer: A**

**Explanation:** Resistance is directly proportional to square of voltage and inversely proportional to the power.

7. Ohm's law is not applicable to \_\_\_\_\_?

[A] dc circuits

[B] high currents

[C] small resistors

[D] semi-conductors

**Answer: D**

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**Explanation:** Ohm's law is not applicable to semi-conductors and insulators.

8. Conductance is expressed in terms of \_\_\_\_\_ ?

- [A] mho
- [B] mho/m
- [C] ohm/m
- [D] m/ohm

**Answer: A**

**Explanation:** Conductance is the reciprocal of resistance and is expressed in terms of mho.

9. Resistivity of a wire depends on \_\_\_\_\_ ?

- [A] length of wire
- [B] cross section area
- [C] material
- [D] all of the mentioned

**Answer: C**

**Explanation:** Resistivity of a wire is a constant and it depends on the type of material used.

10. In a current-voltage relationship graph of a linear resistor, the slope of the graph will indicate \_\_\_\_\_ ?

- [A] conductance
- [B] resistance

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[C] resistivity

[D] a constant

**Answer: A**

**Explanation:** The slope of the graph is the ratio of current to a voltage which indicates conductance.

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