

Automotive Electrical and Engine Performance 9th Edition
Chapter 3 – Electrical Circuits and Ohm’s Law
Multiple Choice Questions Quiz A

1. What is required for an electrical circuit to be complete?
 - a) A battery, load, switch, and voltage source
 - b) A power source, load, protection device, and return path
 - c) Only a battery and a load
 - d) Just a conductor and a switch

2. What term describes a circuit with a broken path, stopping current flow?
 - a) Short-to-ground
 - b) Short-to-voltage
 - c) Open circuit
 - d) Closed circuit

3. If a conductor touches a vehicle’s metal frame due to insulation damage, what type of fault occurs?
 - a) Short-to-voltage
 - b) Short-to-ground
 - c) Open circuit
 - d) High resistance fault

4. In Ohm’s law, which formula represents the relationship among voltage (E), current (I), and resistance (R)?
 - a) $E = I + R$
 - b) $E = I - R$
 - c) $E = I * R$
 - d) $E = R / I$

5. Which component in an electrical circuit is designed to prevent current overload?
- a) Load
 - b) Switch
 - c) Fuse
 - d) Return path
6. What is the power (in watts) consumed by a device drawing 2 amperes at 10 volts?
- a) 5 watts
 - b) 20 watts
 - c) 50 watts
 - d) 200 watts
7. High resistance in an automotive circuit might result in:
- a) A blown fuse
 - b) Dim lights and slow motor operation
 - c) An open circuit
 - d) Increased current flow
8. If two power wires accidentally melt together, what type of fault is this?
- a) Open circuit
 - b) Short-to-ground
 - c) Short-to-voltage
 - d) Floating ground
9. Watt's law in electrical circuits is represented by:
- a) $P = E / R$
 - b) $P = I * E$
 - c) $P = I * R$
 - d) $P = I / E$

10. Which unit represents electrical pressure or electromotive force?

a) Ampere

b) Ohm

c) Volt

d) Watt

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Answer Key Quiz A

Correct Answers:

1. b
2. c
3. b
4. c
5. c
6. b
7. b
8. c
9. b
10. c