

**Automotive Electrical and Engine Performance 9th Edition**  
**Chapter 5 – Circuit Testers and Digital Meters**  
**Multiple Choice Questions Quiz A**

1. What is the primary purpose of a high-impedance digital multimeter (DMM) in automotive diagnostics?

- a) To draw significant current for more accurate readings
- b) To measure high currents with minimal internal resistance
- c) To minimize circuit interference when measuring voltage
- d) To test battery load under high-resistance conditions

2. When using a test light to detect voltage, the light illuminates when:

- a) A current greater than 1 ampere is present
- b) The circuit has no resistance
- c) There is adequate voltage to power the test light
- d) The circuit is grounded at two points simultaneously

3. A fused jumper wire should be used to:

- a) Test for resistance across two points in a circuit
- b) Supply temporary power or ground to a component
- c) Replace a faulty fuse temporarily
- d) Measure high resistance in parallel circuits

4. Which of the following best describes a logic probe's functionality?

- a) It measures only high voltage levels
- b) It senses and displays pulsing voltage signals
- c) It is used exclusively for diode testing
- d) It applies a 3V signal to each component being tested

5. Which setting on a digital multimeter would be appropriate for measuring an AC waveform from an alternator?

- a) DC volts
- b) AC volts
- c) Ohms
- d) Diode check

6. What does an "OL" reading typically signify when using an ohmmeter?

- a) Zero resistance in the component or circuit
- b) A measurement value that exceeds the meter's maximum range
- c) High current in the circuit
- d) The battery in the DMM needs replacement

7. In the diode-check function of a digital multimeter, a reading of 0.7 volts typically indicates:

- a) A functioning silicon diode
- b) A faulty light-emitting diode (LED)
- c) An open circuit
- d) Reverse polarity on a silicon diode

8. When set to measure milliamps, a digital meter displays a reading of 0.85 mA. How would this value be displayed if the scale were set to measure amps?

- a) 85 amps
- b) 0.085 amps
- c) 8.5 amps
- d) 0.00085 amps

9. When using an inductive ammeter to measure current, which of the following is true?

- a) The circuit must be disconnected for accurate readings
- b) The meter needs to be directly wired into the circuit
- c) The meter can measure current without direct contact with the conductor
- d) The meter measures resistance by clamping around the wire

10. What safety precaution should be taken when using a digital meter on hybrid-electric vehicles?

- a) Use only meters rated CAT II or lower
- b) Ensure the meter and leads are rated for CAT III or CAT IV
- c) Set the meter to the 40-volt scale to avoid electrical shock
- d) Bypass the circuit's resistance to avoid overload

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**Answer Key Quiz A**

**Correct Answers:**

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