

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) Why must an ohmmeter be connected to a disconnected circuit or component?

2) Why is a communication network used?

3) List and identify the terminals of a typical ISO type relay.

4) What is included in a complete electrical circuit?

5) What are ampere, volt, and ohm?

Answer Key

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1) An ohmmeter measures the resistance in ohms of a component or circuit section when no current is flowing through the circuit. An ohmmeter contains a battery (or other power source) and is connected in parallel with the component or wire being measured.

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2) By connecting the computers together on a communications network, they can easily share information back and forth. This multiplexing has the following advantages.

- Elimination of redundant sensors and dedicated wiring for these multiple sensors
- Reduction of the number of wires, connectors, and circuits
- Addition of more features and option content to new vehicles
- Weight reduction due to fewer components, wires, and connectors, thereby increasing fuel economy
- Changeable features with software upgrades versus component replacement

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3) The ISO identification of the coil terminals are 86 and 85. The terminal number 86 represents the power to the relay coil and the terminal labeled 85 represents the ground side of the relay coil. The higher amperage current flow through a relay flows through terminals 30 and 87, and often 87a.

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4) Every complete circuit contains the following parts:

1. A power source, such as a vehicle's battery.
2. Protection from harmful overloads (excessive current flow). (Fuses, circuit breakers, and fusible links are examples of electrical circuit protection devices.)
3. The power path for the current to flow through, from the power source to the resistance. (This path from a power source to the load—a light bulb in this example—is usually an insulated copper wire.)
4. The electrical load or resistance, which converts electrical energy into heat, light, or motion.
5. A return path (ground) for the electrical current from the load back to the power source so that there is a complete circuit. (This return, or ground, path is usually the metal body, frame, ground wires, and engine block of the vehicle.)
6. Switches and controls that turn the circuit on and off.

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5) The ampere is the unit of measurement for the amount of current flow. The volt is the unit of measurement for electrical pressure. Resistance to the flow of current through a conductor is measured in units called ohms.

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