

QUESTIONS FOR QUIZZES

Chapter 1

- 1.1 Which of the following statements is false?
- A. Electricity is closely related to magnetism.
 - B. Electricity is an attraction and repulsion between small particles in a material.
 - C. Electricity is stronger than gravity because its effects are never balanced out.
 - D. Electricity can be created by pressure, chemistry, light, friction, and magnetism.
- 1.2 Which of these products is electrical but not electronic?
- A. Something using transistors and capacitors.
 - B. Drill
 - C. Computer
 - D. Radio
- 1.3 Which of the following statements is false?
- A. Wire length and size never matter.
 - B. Wires are made of metals like copper.
 - C. Wires offer low resistance to the flow of electricity.
 - D. Most wires have a colored coating for protection and identification.
- 1.4 An electrical ground is . . .
- A. the bottom point on which circuits are constructed.
 - B. the 0V or “-” side of a battery or other voltage source, sometimes connected to lightning rods.
 - C. a board used as a frame for building circuits.
 - D. All of the above.
- 1.5 Advantages of printed circuit boards include . . .
- A. metal strips are “printed” on the surface to make interconnections.
 - B. they are a stable platform for mounting components.
 - C. they allow circuits to be made smaller and less expensive.
 - D. All of the above.
- 1.6 Which of the following would all be connected in series?
- A. A lamp and a switch on the wall controlling it.
 - B. Two lamps in a room controlled by the same switch.
 - C. Two lamps in different rooms of a house.
 - D. The air conditioner and microwave oven in your home.
- 1.7 Which of the following would all be connected in parallel?
- A. A lamp and a switch on the wall controlling it.
 - B. The streetlamps in your neighborhood.
 - C. A string of inexpensive Christmas lights that all go out if one bulb is loose.
 - D. None of the above.
- 1.8 It is better to connect lamps in a parallel circuit configuration when . . .
- A. the power source can supply enough current but not enough voltage to light them all.
 - B. if one bulb burns out, you want the others to still light.
 - C. you are also adding switches to control each lamp separately.
 - D. All of the above.
- 1.9 A short circuit is . . .
- A. a special condition that improves circuit performance in most cases.
 - B. an accidental no-resistance path between different parts of a circuit.
 - C. the shortest wiring path between two points in a circuit.
 - D. All of the above.
- 1.10 Solder is . . .
- A. glue that holds components in place, it resists the flow of electricity.
 - B. always applied by hand.
 - C. a metal that is melted to make solid electrical connections.
 - D. a special metal made of copper and other alloys that melts at a low temperature.

1.11 Draw the schematic for a circuit using a battery set and slide switch to control three 2.5V lamps, if one of the bulbs burns out the others must still work.

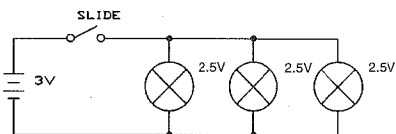
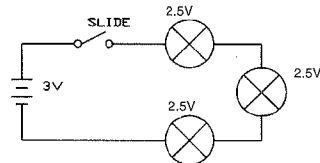
1.12 Draw the schematic for a circuit using two sets of batteries to power two 6V lamps, each lamp must have a separate slide switch controlling it.

1.13 Draw the schematic for a circuit using a battery set and three slide switches to control a 2.5V lamp, the lamp should be on if any switch is on.

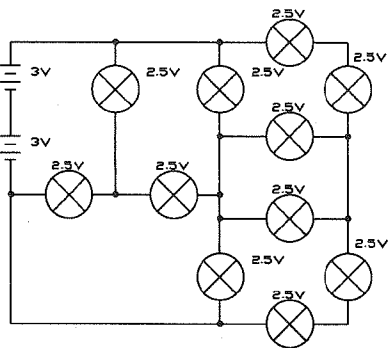
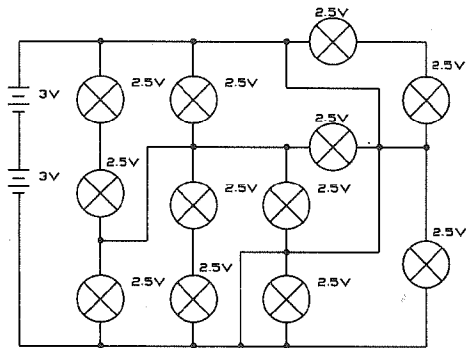
1.14 Draw the schematic for a circuit using a battery set and three slide switches to control a 2.5V lamp, the lamp should be off if any switch is off.

1.15 Which of these circuits has the three lamps connected in parallel?

- A. Top only
- B. Bottom only
- C. Both
- D. Neither

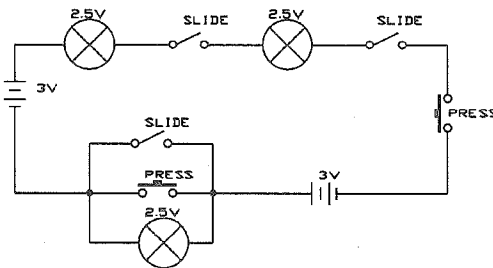
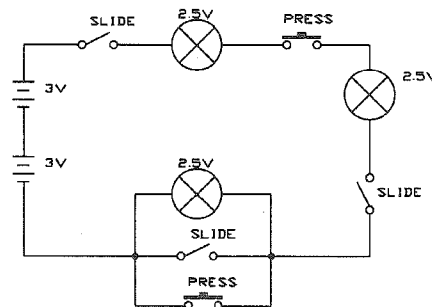


1.16 Which of these circuits is a short circuit?



- A. Top only
- B. Bottom only
- C. Both
- D. Neither

1.17 Will these circuits work the same?



- A. Yes
- B. No
- C. Depends on which switches are closed.
- D. Impossible to tell from these schematics.

1.18 The two basic ways of arranging parts in a circuit are in series and in parallel, all large circuits are made up of combinations of these. TRUE or FALSE?

1.19 At its most basic level, electricity is an attraction and repulsion between sub-atomic particles within a material. TRUE or FALSE?

1.20 Voltage is a measure of how fast electricity is flowing in a wire. TRUE or FALSE?