

ELT-111 CIRCUIT ANALYSIS I

Resistors Sample Test

1. A potentiometer is a
 - a. variable power supply
 - b. device for measuring potential
 - c. variable capacitor
 - d. variable resistor
2. When measuring between the two terminals on the extreme ends on a 5k ohm potentiometer, using a meter, the meter will read
 - a. 5 k ohms
 - b. some resistance reading between zero and 5 k ohms
 - c. unknown
 - d. 5 k volts

(HINT: THE POTENTIOMETER IS NOT CONNECTED TO ANY EXTERNAL CIRCUITRY.)
3. In the lab you learned that the compound used in the manufacture of potentiometers is very much like what other common compound?
4. A circular mil is the area of a round conductor one millimeter in diameter.
5. Resistance decreases as the cross-sectional area of a conductor increases.
6. A varistor is a two terminal device which changes in resistance as temperature changes.
7. The resistance between the outside terminals of a potentiometer is fixed, regardless of the position of the wiper arm.
8. An ohmmeter is used to detect both opens and shorts in circuits.
9. Resistance is directly proportional to the length of a conductor.
10. Which of these color code patterns is found on a 270 ohm 5% resistor?
 - a. Red, violet, brown, silver
 - b. Red, violet, brown, gold
 - c. Red, violet, black, silver
 - d. Red, violet, brown, gold

11. red-brown-orange-gold _____

12. blue-orange-white-silver _____

13. grey-red-black _____

14. violet-brown-red-silver _____

15. yellow-orange-gold-gold _____

16. A potentiometer that varies in resistance in a nonlinear manner is

- a. A tapered winding device
- b. A linear winding device
- c. A rheostat
- d. A varistor

17. Which of these materials have a positive temperature coefficient?

- a. Glass
- b. Rubber
- c. Germanium
- d. Copper

18. Which of these statements is true?

- a. As conductor length increases, conductance increases proportionally
- b. As conductor area decreases, conductance increases proportionally
- c. As conductor area increases, conductance increases proportionally
- d. As resistance increases, conductance increases proportionally

19. The resistance of a conductor is inversely proportional to which of the following?

- a. Length
- b. The value of the resistor
- c. Cross sectional area
- d. Voltage

20. List and describe three applications of superconductors.

21. The “pairing” of electrons as they travel through a medium is called

22. Is it possible for a 470 ohm 5% resistor and a 560 ohm 20% resistor to have identical resistance values?

23. What resistance reading would result across a fuse if the fuse were blown?

24. What safety precautions must be observed when using an ohmmeter?