Module 2 Units 1,2,3,4

1. What is a series circuit?

2. What is the result of an open anywhere in a series circuit?

3. Why is it important to identify polarity when measuring amperage or voltage in a DC circuit?

4. What is the formula for calculating total resistance in a series circuit?

5. What statement describes the amperage through each part of a series circuit?

6. What value determines the amount of voltage dropped across each resistor in a series circuit?

7. What is the formula for calculating total voltage in a series circuit?

8. What is the formula to calculate voltage drop across each resistor?

9. What voltage is measured across any open in a series circuit?

10. What is the voltage drop across a 15 ohm and a 20 ohm resistor connected in series to a 120 volt supply?

11. What is the voltage drop across a 60 ohm and a 90 ohm resistor connected in series to a 120 volt supply?

12. What is the voltage drop across a 3 ohm and a 12 ohm resistor connected in series to a 240 volt supply?

13. What is the formula for calculating total power in a series circuit?

14. What is the relationship between the voltage drop across a resistor and the resistance of that resistor?

15. What is the first step in solving a word problem describing a circuit?

16. What is one method of compensating for line loss?

17. What is the difference between line drop and line loss?

18. What is the effect of connecting voltage sources in series maintaining proper polarity?
Unit 2

1. What is the most common type of circuit encountered by electricians?

2. What value in a parallel circuit is the same across each load? (E, I, or R)

3. What is the definition of a parallel circuit?

4. What is the relationship between the current through the resistors and the total current in a parallel circuit?

5. What is the relationship between current and resistance in any circuit?

6. What is the effect on total resistance in a parallel circuit when an extra path (load) is added?

7. What is the total resistance in a parallel circuit when the values are $5\Omega$, $10\Omega$, and $20\Omega$?

8. What are the three formulas for calculating power dissipated in a resistor?

9. What is the formula for calculating total power in a parallel circuit when you know the power used by each resistor?

10. What is Kirchoff’s current law?

11. Are word problems or diagrams typically easier to understand? (solving circuits)

12. Total resistance in a parallel circuit is always more than the resistance of the smallest value. True or False?

13. What is the reciprocal method for calculating total resistance in a parallel circuit?

14. What is the product-sum method for calculating total resistance in a parallel circuit?

15. What is the formula for calculating the total resistance for equal resistors in parallel?

16. What is the advantage of connecting power sources in series?

17. What is the advantage of connecting power sources in parallel?

18. What are the two most important factors when connecting power sources in parallel or series?
19. What is the result of connecting a jumper across two points of different polarity on voltage sources?

Unit 3

1. How do you solve a combination circuit for total resistance?

2. What is the total resistance in a circuit with a 5Ω and 20 Ω resistor in parallel with each other and in series with two more 4 Ω (in series with each other) resistors? (Draw diagram)

3. If the circuit above is connected to a 120V source, what is IT?

4. What is the total resistance in a circuit with a 6Ω and 10 Ω resistor in parallel with each other and in series with a 12 Ω resistor? (Draw diagram)

5. If the circuit above is connected to a 120V source, what is IT?

6. What is the total resistance in a circuit with a 15Ω and 20 Ω resistor in parallel with each other and in series with two more 10 Ω (in parallel with each other) resistors? (Draw diagram)

7. If the circuit above is connected to a 120V source, what is IT?

8. Don’t worry too much about the really complicated circuits in the module!!

Unit 4

1. What is the purpose of a voltage divider circuit?

2. What value will determine the voltage drops in each portion of a voltage divider circuit?

3. What is a potentiometer?

4. Work through the self tests and check your answers. If you have a problem, let me know.