



Introduction to Safety – Unit Five: Electrical Safety

Unit Exam

- Which of the following is considered a secondary energy source?
 - Natural gas
 - Electricity
 - Nuclear power
 - Coal
- The _____ orbits the nucleus of an atom
 - electron
 - proton
 - neutron
 - nucleus
- An atom with how many electrons in its outer shell is the best conductor of electricity?
 - 0
 - 1
 - 4
 - 8
- When a balanced atom loses an electron it becomes a _____ ion.
 - Negative
 - Positive
- Current can exist without voltage.
 - True
 - False
- Current is the movement of _____.
 - electrons
 - protons
 - neutrons
 - All of the above
- A ____ produces electricity using pressure.
 - generator
 - piezoelectric device
 - thermocouple
 - photovoltaic





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8. ____ is an example of a control device in an electrical circuit.
- switch
 - lightbulb
 - battery
 - wire
9. The letter ____ is used to represent current flow in a circuit.
- I
 - C
 - R
 - P
10. The symbol Ω is used to represent resistance in an electrical circuit.
- True
 - False
11. Which factor will cause the resistance of a wire to increase?
- decrease in its length
 - an increase in its diameter
 - an increase of its temperature
 - using silver instead of copper
12. When a switch is in a position that causes current to flow, the circuit in which it is connected is open.
- True
 - False
13. A grounding device _____.
- acts as if it conducts electricity
 - is a power source
 - acts the same as a circuit breaker
 - is considered a loading device





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14. A _____ responds to excessive current more quickly than a _____ in response to excessive current conditions.
- fuse, circuit breaker
 - circuit breaker, fuse
 - human, fuse
 - human, circuit breaker
15. The term _____ proportional refers to the value of one quantity affecting value of another the same way by the same ratio.
- directly
 - inversely
16. If V doubles, I halves if R is not changed.
- True
 - False
17. The resistance in the circuit is how many ohms when the applied voltage is 18 volts and the current is 20mA?
- 90Ω
 - 360Ω
 - 900Ω
 - 3.6Ω
18. The voltage of a circuit is _____ volts when its resistance is 10k ohms and the current is 500uA.
- 5
 - 50
 - 500
 - 2000
19. The sum of the currents through all of the components in a series circuit equal total current.
- True
 - False





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20. Which statement is true about a parallel circuit?
- A parallel circuit is configured so that current has **one** or more paths for current to flow.
 - The total current in a parallel circuit is equal to the sum of the branch currents.
 - In a parallel circuit the current in each branch is directly proportional to the resistance of the branch.
 - The source voltage is equal to the sum of all the voltage drops across each branch in a parallel circuit
21. The horizontal axis of a sine wave indicates _____.
- polarity
 - voltage amplitude
 - current amplitude
 - frequency
22. If the current is at a greater level than what the wire conductor is it is designed for, it could _____.
- overheat and open
 - cause a short
 - overheat and start a fire
 - Any of the above
23. Electrical current takes the path of least resistance.
- True
 - False
24. According to the NEC (National Electrical Code) a voltage greater than _____ volts is defined as *High Voltage*.
- 120
 - 230
 - 460
 - 600
25. A current as low as _____ can cause cardiac arrest.
- 100 milliamps
 - 1 amp
 - 5 amps
 - 10 amps





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26. The real measure of the intensity of an electrical shock lies in the amount of ____.
- voltage
 - amps forced through the body
27. Ventricular fibrillation is the ____.
- stoppage of the heart
 - loss of regular heart rhythm
 - Both a and b
 - Neither a or b
28. Current cannot flow through a substance that is considered an extremely poor conductor, even if the voltage is great enough.
- True
 - False
29. Static electricity ____ flow in a circuit.
- does
 - does not
30. ____ are used to minimize the build-up of static electricity.
- Grounding pads
 - Grounded wristbands
 - Rubber floor mats
 - All of the above





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