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Continuing Education Course #420
Electrical Power Distribution
Part 1 - Fundamentals

1. Which of the following is not one of the top three energy sources for utility electricity generation?
- a. Fossil fuels
- b. Nuclear
- c. Renewable energy (solar, wind, water)
- d. Geothermal

2. What type of device is used to lower the voltage to the level required for use by consumers?
- a. Generator
- b. Step-up transformer
- c. Step-down transformer
- d. Transmission line

3. What is the unit of measure for electrical potential energy?
- a. Volt
- b. Ampere
- c. Ohms
- d. Watts

4. What is the unit of measure for the flow of electricity?
- a. Volt
- b. Ampere
- c. Ohms
- d. Watts

5. What is the unit of measure of an electrical load?
- a. Volt
- b. Ampere
- c. Ohms
- d. Watts

6. When using Ohm's Law which value of AC voltage should be used?
- a. 0 to peak value
- b. Peak to peak value
- c. RMS (Root mean squared)

7. For a single-phase AC system with an RMS voltage of 120V, and a resistive load of 80 Ohms, what will the steady-state current be?
- a. 0.667 Amps
- b. 1.5 Watts

○ c. 1.5 Amps
○ d. 15 Amps

8. What is the unit of electrical power?
○ a. Volt
○ b. Ampere
○ c. Ohms
○ d. Watts

9. For a single-phase AC system with an RMS voltage of 120V, and a resistive load of 80 Ohms, how much power is delivered to the load?
○ a. 9,600 Watts
○ b. 1,800 Watts
○ c. 180 Watts
○ d. 150 Watts

10. What causes voltage and current to be out of sync?
○ a. Resistance
○ b. Inductance
○ c. Capacitance
○ d. Both B and C

11. In an AC Power system, what is the measurement of the ratio of the working power to the apparent power?
○ a. Power Factor
○ b. KVAR
○ c. KVA
○ d. AIC

12. What is the graphical representation of the relationships of apparent power, real power, and reactive power?
○ a. Power Triangle
○ b. Power Diagram
○ c. Single-Line Drawing
○ d. Time-Current Curve

13. What is the unit of measure for electric energy?
○ a. Volt
○ b. Ampere
○ c. Ohms
○ d. Watt-hour

14. What charge on an electric bill is based on the highest flow of power?
○ a. Consumption charge
○ b. Power factor penalty
○ c. Demand Charge
○ d. Interruptible rate clause

15. What is the purpose of the National Electric Code?
○ a. Provide guidelines for electrical installation efficiency
○ b. Provide guidelines for the most economical electrical system design
○ c. Provide practical safeguard of people and property from the hazards arising from the use of electricity.
○ d. Provide guidance to achieve energy efficiency in electrical designs

16. Which of the following is a possible fault in an electrical power distribution system?

- ○ a. Overload
- ○ b. Short Circuit
- ○ c. Ground Fault
- ○ d. Arc Fault
- ○ e. All of the above
- ○ f. None of the above

17. Which if the following devices can be used to disconnect the power source in an electric distribution system if a fault occurs?

- ○ a. Fuse
- ○ b. Circuit breaker
- ○ c. A and B
- ○ d. None of the above