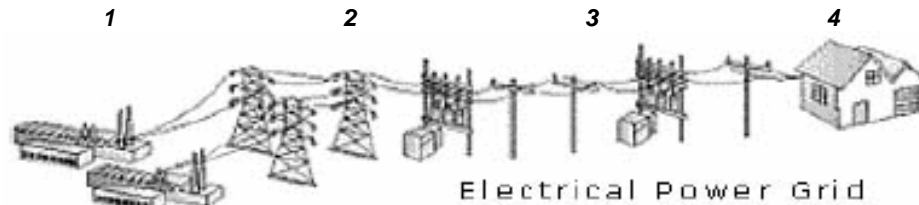


Topic 7 - Electricity in the Home

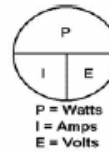


1. Use the illustration provided to identify where you would likely find the highest voltage ...
 - A. 1
 - B. 2
 - C. 3
 - D. 4
2. It is necessary for Urban power companies to reduce voltage to communities. They are able to do this with a step-down transformer. This type of transformer reduces voltage because...
 - A. it is coiled with more wires
 - B. it is coiled in reverse directions
 - C. the secondary coil is larger than the primary coil
 - D. the primary coil is larger than the secondary coil
3. A power use meter is connected from the power lines to the outside of your home. It is then routed to a central service panel that is full of ...
 - A. transistors
 - B. transformers
 - C. conductors
 - D. circuit breakers
4. The lower part of the service panel contains many fuses that are used to regulate ...
 - A. branch circuits
 - B. circuit breakers
 - C. breaker panels
 - D. power switches
5. After major electrical work is done in a home, an electrical inspector is called in to determine if the electrical work has been completed to the standards outlined in the ...
 - A. city bylaws
 - B. CSA labels
 - C. electrical code
 - D. EnerGuide labels
6. Technology has revolutionized the way we do things. The device able to convert information into numbers is the computer. These numbers, which are ones and zeros, are called ...
 - A. binary
 - B. bits
 - C. bytes
 - D. data
7. Microcircuits are circuits that are miniaturized to fit into a small space and perform many functions. Transistors in these modern digital circuits act as ...
 - A. fuses
 - B. loads
 - C. valves
 - D. switches
8. A 15A current passes through an indoor heater when it is plugged into your home outlet (110V). What is the formula to determine the power of the heater?
 - A. $P = I / V$
 - B. $P = V / I$
 - C. $P = I \times V$
 - D. $P = E \times t$

(P) Power in watts

(I) current in amperes

(V) voltage in volts



$$\text{POWER} = \text{CURRENT} \times \text{VOLTAGE}$$

$$\text{CURRENT} = \frac{\text{POWER}}{\text{VOLTAGE}}$$

$$\text{VOLTAGE} = \frac{\text{POWER}}{\text{CURRENT}}$$

$$E = P \times t \quad P = E / t \quad t = E / P$$

$$\text{Efficiency (\%)} = \frac{\text{useful energy output (J)}}{\text{total input energy (J)}} \times 100\%$$

9. A ghetto blaster has a power rating of 28 watts. If it was on each day (all day) during an average month (30 days) and the cost of electricity, in Alberta, is \$0.11 per kilowatt hour. What is the cost of operating the ghetto blaster for one month?
- \$ 2.22
 - \$ 22.18
 - \$ 221.78
 - \$ 2217.60
10. The efficiency of a device is the ratio of the useful energy that comes out of a device to the total energy that goes in. A light bulb gives off 5J of useful light energy for every 100J of electrical energy used to make it work. What is the efficiency of the light bulb?
- 105 %
 - 95 %
 - 20 %
 - 5 %
11. "The problem with this computer game", said Matt, "is that the power bar keeps popping its circuit. I think that I need a better power bar, so I can play my game without interruption."
- Don't use electricity near water
 - Improper or unsafe equipment
 - Keep a safe distance high voltage
 - Don't use more electricity than recommended
12. Which of the following is the lowest amount of current that can be fatal...
- 0.001A
 - 0.01V
 - 0.1A
 - 1.0A
13. James Moore was inspecting the wiring in a new house and found that the green wire had not been connected properly in the electrical panel. The wiring did not pass safety inspection because the ...
- panel had a short circuit
 - electrical outlets were not grounded
 - electrical circuits were overloaded
 - green wire was the hot wire
14. A power line has snapped in an ice storm. One end landed on a car, with the driver still inside. The driver will not be electrocuted as long as he ...
- keeps calm and moves slowly out of the car
 - makes sure he doesn't touch the wire as he gets out
 - stays inside the car until help arrives
 - doesn't step in any water as he gets out
15. The dangers of electrical shock can vary depending on the situation. Which of the following would likely be the most dangerous (getting a nasty shock!) ...
- Touching an electrified fence on a hot summer day while wearing running shoes.
 - Touching an electrified fence when you are barefoot in a rainstorm
 - Climbing a metal fence on a hot summer day while wearing running shoes.
 - Climbing a metal fence when you are barefoot in a rainstorm.