

Section 11.3 Electrical Energy in the Home – Answer Key

- 1) Where do power lines from the nearest transformer connect to before they enter your home? **They connect to an electric meter that records how much electricity the home uses.**
- 2) Define load. **A load is something that slows the flow of electricity in a circuit and converts electrical energy into some other sort of energy.**
- 3) What happens every time you turn on a load in your home? **Every time you turn on a load in your home, current passes through the meter, recording how much electricity you are using.**
- 4) What does each dial on the meter represent? **Each dial on the meter represents one digit in a five digit number.**
- 5) Define kilowatt hour. **A kilowatt hour is a unit of power representing 1000 watts over a period of one hour.**
- 6) Where do people obtain energy from? **People obtain their energy from food.**
- 7) A family uses 4000kW•h of electrical energy in a three-month period. If the energy costs 1 RMB per kW•h, what is the electric bill for the three-month period?

4000kW•h x 1 RMB = 4000 RMB - The electric bill is 4000 RMB for the three-month period.
- 8) What does every house, school and office building have? **They all have several different circuits each having their own breaker switch.**
- 9) What happens if something trips one breaker? **If something trips one breaker, only the appliances plugged into that circuit will turn off.**
- 10) What brings power into the house? **A large cable brings power into your house.**

11) Why is wiring to a kitchen different than wiring to a bedroom? **They are different because often in a kitchen you use several appliances at the same time. This is the reason many plugs in a kitchen are connected in separate circuits.**

12) What do many kitchens have? **Many kitchens have two outlets in one double plug that are sometimes connected to separate circuits.**

13) What do stoves require? **Stoves require a very large current and are usually connected in their own circuit.**

14) Why are many plugs 45cm above the ground? **Many plugs are 45cm above the ground because this will prevent serious electrical damage from floods.**

15) What is most of the energy used to power standard light bulbs converted into? **Most of the energy is converted into heat.**

16) Why do light bulbs burn out? **Light bulbs burn out because the tungsten in the filament evaporates.**

17) List one advantage and one disadvantage of a fluorescent light bulb. **The use 75% less energy and last up to 13 times longer than a standard light bulb. One disadvantage is that they are more expensive.**

18) What should you do when you unplug a device from an electrical outlet?

You should always hold the plug when you unplug a device from an outlet.

19) Define short circuit. **A short circuit is when the current finds a way from the source, and back again, without passing through a load.**

20) What is one safety consideration to make when using an extension cord?

When you use an extension cord, you need to make sure that cord is as thick, or thicker, than the cord on the appliance.