1. Does “sleeping” a desktop reduce its energy consumption? By how much?

Yes, by 60%

2. Devices today can be input and output: describe 3 such commonly used devices.

Output devices - Monitor, Printer, Projector

Input - Keyboard, mice, digital Camera

3. How can a computer qualify for an EnergyStar rating from EPA?

ENERGY STAR score of 75 or higher on EPA's 1 – 100 scale

4. A new battery is announced with twice the up time? What are the potential issues?

Spikes

Surges

Blackouts

Brownouts

Line noise

5. What do you need to consider when buying a cheap charging device to replace one that you lost?

cheap charger routes unregulated power into the device

6. As a gamer, what special techniques do you use to keep your computer cool?

Lower voltage –less power consumed so less heat
Use 3.3V CPUs vs 5V

7. Explain Moore's law and how it has changed since it first came out

Observed number of transistors that could be putting on a single chip was doubling every year.
The pace slowed to a doubling every 18months in the 1970's and is now considered every 2 years

8. What is the role of the capacitors on the motherboard?

A capacitor is a two-terminal, electrical component

One of the most fundamental passive components

Stores energy

Suppresses voltage spikes

Handles complex signal filtering

9. Why do ICs get made in a clean rule, more controlled than a hospital operating room?

Because it is very sensitive, Silicon must be very pure

10. What is the purpose of Resistors on the motherboard?

used to provide a specific voltage for an active device such as a transistor.