

**1. What is hardware? Give some examples.**

When talking about computer systems, hardware means the physical parts of the computer. The hardware components of a computer system are the electronic and mechanical parts. Examples: Processor, Main memory, Secondary memory

**2. What is software? Give some examples.**

Software means the programs and data used with the physical computer. The software components of a computer system are the data and the computer programs. Examples: Operating System, Word processors, Game programs, Spreadsheets

**3. List the 5 major hardware components of a computer system.**

The major hardware components of a computer system are: • Processor • Main memory • Secondary memory • Input devices • Output devices

**4. What is a computer BUS?**

A bus is a group of wires on the main circuit board of the computer. It is a pathway for data flowing between components.

**5. What does a bus controller (device controller) do?**

Most devices are connected to the bus through a controller which coordinates the activities of the device with the bus.

**6. What does the processor (CPU or Central Processing Unit) do?**

The processor performs all the fundamental computation of the computer system. Other components contribute to the computation by doing such things as storing data or moving data into and out of the processor. But the processor is where the fundamental action takes place.

**7. What is MAIN memory?**

Main memory is: - closely connected to the processor. - stored data are quickly and easily changed. - holds the programs and data that the processor is actively working with. - interacts with the processor millions of times per second. - needs constant electric power to keep its information.

**8. What is SECONDARY memory?**

Secondary memory is: - connected to main memory through the bus and a

controller. - stored data are easily changed, but changes are slow compared to main memory. - used for long-term storage of programs and data. - before data and programs can be used, they must be copied from secondary memory into main memory. - does not need electric power to keep its information.

**9. List the features of MAIN memory and compare them to SECONDARY memory.**

Primary memory : Secondary memory

Primary Fast : Secondary Slow

Primary Expensive : Secondary Cheap

Primary Low capacity : Secondary Large capacity

Primary Works directly with the processor : Secondary Not connected directly to the processor

**10. What type of memory is VOLATILE?**

Main memory is sometimes called volatile because it loses its information when power is removed. Secondary memory is usually nonvolatile because it retains its information when power is removed. (However, it needs power when information is stored or retrieved.)

Main memory is sometimes called RAM. RAM stands for Random Access Memory. "Random" means that the memory cells can be accessed in any order.

**11. Give some examples of INPUT devices.**

Input and output devices allow the computer system to interact with the outside world by moving data into and out of the system. An input device is used to bring data into the system.

Some input devices are:

- Keyboard
- Mouse
- Microphone
- Bar code reader
- Graphics tablet

**12. Give some examples of OUTPUT devices.**

An output device is used to send data out of the system.

Some output devices are:

- Monitor
- Printer
- Speaker

**13. Is a network interface input or output? Explain.**

A network interface acts as both input and output. Data flows from the network into the computer, and out of the computer into the network.

**14. Computer software consists of both programs and data. Does the computer treat them differently when they are stored in memory?**

Fundamental Idea: Both programs and data are saved in computer memory in the same way. The electronics of computer memory (both main memory and secondary memory) make no distinction between programs and data.

**15. What are Applications Programs? Give some examples.**

Application Programs

- Word processors
- Game programs
- Spreadsheets
- Data base systems
- Graphics programs
- Web browsers

**16. What are Systems Programs? Give some examples.**

Systems Programs

- Operating system
- Networking system
- Programming language software
- Web site server
- Data backup