

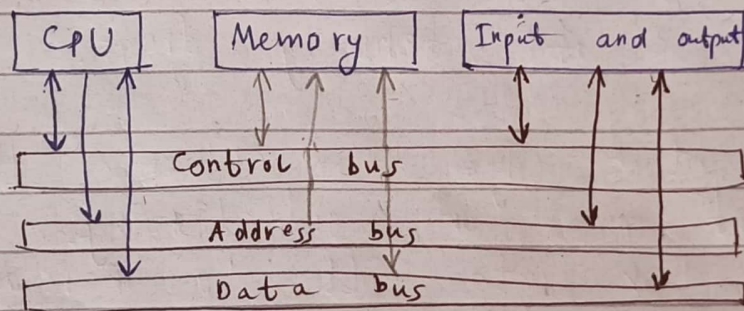
Question no. 2 (c)

What are computer buses? Differentiate between RAM and ROM?

Computer bus

A computer bus is a communication system through which data can be transferred. It is essentially a set of pathways (wires, traces, etc) that carries data, addresses and control signal.

Diagram of computer bus



RAM

RAM stands for Random Access Memory. RAM is made up of small memory chips that form a memory module. RAM is used for temporary data storage that CPU can easily access and modify.

ROM

ROM stands for Read Only Memory. ROM is a memory containing hard wired instructions that the computer uses for when it starts up. It is used to store permanent instructions that are not intended to be modified frequently.

Differences

1

Volatility

RAM: Volatile (loses data when power is off).

ROM: Non-volatile (retains data when power is off).

2

Read/Write capabilities

RAM: Read and write operations are both possible.

ROM: Primarily read-only; writing is either not possible or limited.

3

Usage

RAM: RAM is used for temporary storage of data being actively used by CPU.

ROM: ROM is used for storing firmware and permanent instructions.

4

Speed

RAM: Generally faster due its design for frequent access.

ROM: Slower speeds: optimized for stability and permanence.

5

Hardware structure

RAM: RAM is in form of chips.

ROM: ROM is generally optical drives made of magnetic tapes.

6

Examples

RAM: Static and dynamic RAM

ROM: PROM, EPROM are types of ROM.

7

Size

RAM: Chip size is larger than ROM.

ROM: Chip size is smaller than RAM.