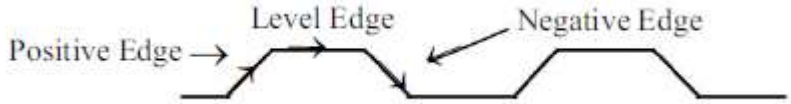
Terms Used in Microprocessor Literature

Term	Meaning
Bit:	A single digit (either 0 or 1) of the binary number or code is called bit.
Nibble :	A group of 4-bit (4-digit) binary number or code is called nibble.
Byte :	A group of 8-bit (8-digit) binary number or code is called byte.
Kilobyte:	A collection of 1024 bytes is called a kilobyte (2^{10} bytes).
Megabyte	A collection of 1024 kilobytes is called a megabyte (2^{20} bytes).
Word :	The 16-bit (16-digit) binary number or code is called word.
Double Word :	The 32-bit (32-digit) binary number or code is called double word.
Multiple Word :	The 64,128, ... bit /digit binary numbers or codes are called multiple words.
Data :	The quantity (binary number/code) operated by an instruction of a program is called data. The size of data is specified as bit, byte, word, etc.
Address :	Address is an identification number in binary form for memory locations. The 8086 processor uses a 20-bit address for memory.
Memory Word Size :	The memory word size or addressability is the size of binary information (or Addressability) that can be stored in a memory location. The memory word size for an 8086 processor-based system is 8-bit.
Microprocessor :	The microprocessor is a program controlled semiconductor device(IC), which fetches (from memory), decodes and executes instructions. It is used as CPU (Central Processing Unit) in computers. The basic functional blocks of a microprocessor are), an array of registers and a control unit. The microprocessor is identified with the size of data, the ALU of the processor can work with at a time. The 8086 processor has a 16-bit ALU, hence it is called a 16-bit processor. The 80486 processor has a 32-bit ALU,

	hence it is called a 32-bit processor.
Bus:	Bus is a group of conducting lines that carries data, address and control signals. Buses can be classified into Data bus, Address bus and Control bus.
Data bus:	The group of conducting lines that carries data is called data bus.
Address bus:	The group of conducting lines that carries address is called address bus.
Control bus:	The group of conducting lines that carries control signals is called control bus.
CPU Bus :	The group of conducting lines that are directly connected to the Microprocessor is called CPU bus. In a CPU bus, the signals are multiplexed, i.e., more than one signal is passed through the same line but at different timings.
System Bus :	The group of conducting lines that carries data, address and control signals in a microcomputer system is called System bus. Multiplexing is not allowed in a system bus. [In microprocessor-based systems, each bit of information (data /address /control signal) is sent through a separate conducting line. Due to practical limitations, the manufacturers of microprocessors may provide multiplexed pins, i.e., one pin is used for more than one purpose. This leads to a multiplexed CPU bus. For example, in an 8086 processor the address and data are sent through the same pins but at different timings. But when the system is formed, the multiplexed bus lines should be demultiplexed by using latches, ports, transceivers, etc. The demultiplexed bus lines are called system bus. In a system bus, separate conducting lines will be provided for each bit of data, address and control signals.]
Clock:	A clock is a square wave used to synchronize various devices in the microprocessor and in the system. Every microprocessor system requires a clock for its functioning. The time taken for the microprocessor and the system to execute an instruction or program is measured only in terms of the time period of its clock. A clock has three edges: rising edge (positive edge), level edge and falling edge (negative edge). The device is made sensitive to any one of the edges for better functioning (it means that the device will recognize the clock only when the edge is asserted or

	arrived). 
CPU:	Abbreviation of Central Processing Unit
ALU:	Abbreviation of Arithmetic Logic Unit
Tri-state Logic :	Almost all the devices used in a microprocessor-based system use Tri-state logic. In devices with tri-state logic, three logic levels will be available: High state, Low state and High impedance state. The high and low level states are normal logic levels for data, address or control signals. The high impedance state is an electrical open-circuit condition. The high impedance state is provided to keep the device electrically isolated from the system. The tri-state devices will normally remain in high impedance state and their pins are physically connected in the system bus but electrically isolated. In high impedance state, they cannot receive or send any signal or information. These devices are provided with chip enable/chip select pins. When the signal at this pin is asserted to the right level, they come out from high impedance state to normal levels.
RISC processor	Reduced instruction set computer is a processor architecture that supports limited machine language instructions.
CISC processor	Complex instruction set computer is a processor architecture that supports many machine language instructions.
I/O	Input output devices
BIOS	Basic input/output system is a set of programs that handles the input and output functions and interacts with the hardware directly.
Assembler	It is a computer application program that converts the assembly language program into machine level language program.
Compiler	It is a computer application program that converts the high level language program into machine level language program.
Interpreter	It is a computer application program that reads the high level or assembly language program one line at a time and converts it into machine level language program.
Firmware	Software written for a microprocessor application without provision for changes is called firmware. These are stored in the permanent storage or Rom of the computer system.