⚙ Short Question And Answer Microprocessor Set-1

1. Define Microprocessor?

Microprocessor is a multipurpose, programmable, clock-driven, register based electronic device that reads binary instructions from a storage device called memory, accepts binary data as input and processes data according to those instructions, and provides as output.

2. What is Hardware and Software?

The physical components of the system i.e. computer are called Hardware. Group of programs is called software.

3. Why the microprocessor is viewed as a programmable Device?

Microprocessor is programmable because it can be instructed to perform given tasks within its capability. Microprocessor is designed to understand and execute many binary instructions.

4. What is Central processing Unit (CPU) ?

And Write the use of it. CPU is a heart of the computer. Central processing Unit controls the operation of the computer. In a microcomputer the CPU is a microprocessor. The CPU fetches binary coded instructions from memory, decodes the instructions into a series of simple actions and carries out these actions in a sequence of steps.

5. What is a chip?

A chip is also called an integrated circuit. Generally it is a small, thin piece of silicon onto which the transistors making up the microprocessor have been etched. A chip might be as large as an inch on a side and can contain tens of millions of transistors. Simpler processors might consist of a few thousand transistors etched onto a chip just a few millimeters square.

6. What is System Bus?

The System bus is a communication path between the microprocessor and peripherals. It is nothing but a group of wires to carry bits.

7. What is Address Bus?

The address bus consists of 16, 20, 24 or 32 parallel signal lines. On these lines the CPU sends out the address of the memory location that is to be written to or read from. The number of address lines determines the number of memory locations that the CPU can address. If the CPU has N address lines, then it can directly address 2memory locations. Simply, we can say that Address Bus is used to carry the address.

8. What is Data Bus?

The data bus consists of 8, 16, or 32 parallel signal lines. The data bus lines are bidirectional. This means that the CPU can read data in from memory or from a port on these lines, or it can send data out to memory or to a port on these lines. Simply we can say that data bus is used to carry the data.

9. What is Assembly Language?

A medium of communication with a computer in which programs are written in mnemonics. Binary instructions are given abbreviated names called mnemonics, which form the assembly language for a given processor.

10. What is Machine Language?

The binary medium of communication with a computer through a designed set of instructions specific to each computer.

11. What is Bit-Slice processor?

For some Applications , general purpose CPUs such as the 8080 and 6800 are not fast enough or do not have suitable instruction sets. For these applications ,several manufacturers produce devices which can be used to build the custom CPU. This family includes 4 bit ALUs, multiplexers, sequencers and other parts needed for custom building a CPU. The term slice comes from the fact that these parts can be connected in parallel to work with 8 bit words, 16bit words, or 32 bit words.

12. What is microcontroller?

Microcontroller is a Device that includes microprocessor, memory and I/O signal lines on a single chip, fabricated using VLSI technology.

13. List the main applications of 8 bit microprocessors?

8 bit microprocessors is used in a variety of applications such as appliances, automobiles, industrial process and control applications.

14. Write the uses of microprocessors in Medical Instrumentation field?

Patient Monitoring in Intensive Care Unit, Pathological Analysis and the measurement of parameters like blood pressure and temperature.

15. Define Real Time Systems :

Real Time Systems are those in which timeliness is as important as the correctness of the outputs, although this does not mean that they have to be "fast systems".

16. List the limitations of 8 bit microprocessor:

- Lower Execution Speed
- It can address less memory size
- Few instructions are available

17. What do you mean ' Data Width'?

Data Width is the width of the ALU. An 8 bit ALU can add / subtract/ multiply etc.. two 8 bit numbers . In many cases, the external data bus is the same width as the ALU, but not always. The 8088 had a 16 bit ALU and 8 bit bus , while the modern Pentiums fetch data 64 bits at a time for their 32 bit ALUs.

18. specify the complete bit configuration of 8085 flag Register?

S- Sign Flag . If D7 =1 , then sign flag is set, otherwise rest.

Z-Zero flag. If ALU operation results in zero, then this flag is set, Otherwise it is reset.

AC-Auxilliary flag. In an arithmetic operation ,when a carry isgenerated by digit D3 and passed on to digit D4, the AC flag is set. Otherwise it is reset.

P-Parity Flag. If the result of an arithmetic or logic operation has an even number of 1"s then this flag is set. Otherwise it is reset.

CY-Carry Flag. If an arithmetic operation results in a carry, the carry flag is set. Otherwise it is reset.

19. List the four operations commonly performed by MPU(Microprocessing Unit)?

- Memory Read : Reads data (or instructions) from memory.
- Memory Write: Writes Data (or instructions) into memory.
- I/O Read: Accepts data from input devices.
- I/O Write: Sends data to output devices.

20. Write about RST pins in 8085?

In 8085 ,three RST pins are available, such as RST 7.5 ,RST 6.5 , RST 5.5. RST represents Restart Interrupts. These are vectored interrupts that transfer the program control to specific memory locations. They have higher priorities than the INTR interrupt. Among these three, the priority order is 7.5,6.5,5.5.