In electric circuit theory, an ideal voltage source is a circuit element where the voltage acrossit is independent of the current through it. Sources infinite current to any load without anychange in o/p voltage.

- What do you mean by zener breakdown and avalanche breakdown?

Zener breakdown In Zener breakdown the electrostatic attraction between the negative electrons and a large positive voltage is so great that it pulls electrons out of their covalent bonds and away from their parent atoms. i.e Electrons are transferred from the valence to the conduction band. In this situation the current can still be limited by the limited number of free electrons produced by the applied voltage so it is possible to cause Zener breakdown without damaging the semiconductor.Avalanche breakdownAvalanche breakdown occurs when the applied voltage is so large that electrons that are pulled from their covalent bonds are accelerated to great velocities. These electrons collidewith the silicon atoms and knock off more electrons. These electrons are then also acceleratedand subsequently collide with other atoms. Each collision produces more electrons which leads to more collisions etc. The current in the semiconductor rapidly increases and thematerial can quickly be destroyed.

- What are the different types of filters?

low pass, high pass, band pass, band stop, resonant

- What is sampling theorem?

Sampling Theorem: A bandlimited signal can be reconstructed exactly if it is sampled at arate atleast twice the maximum frequency component in it.

- What is impulse response?

Impulse response is the response of a system to a unit impulse at its input. The impulseresponse function is the inverse Laplace transform of the system transfer function H(s).

- Explain the advantages and disadvantages of FIR filters compared to IIR counterparts.

IIR filters are recursive and FIR filters are non-recursive. Also FIR filters are linear phase andIIR filters are not. fir filter are highly stable.we can obtain linear phase in fir filter. roundingerror is abscent in fir filter.

- What is CMRR? Explain briefly.

The ratio of the gain of an amplifier for difference signals between the input terminals, to thegain for the average or common-mode signal component.

- What do you mean by half-duplex and full-duplex communication? Explain briefly.

half duplex - both sender & receiver can communicate with each other, but notsimultaneously...full duplex - same but simultaneous communication possible.

- What are the flags in 8086?

Carry flag, Parity flag, Auxiliary carry flag, Zero flag, Overflow flag, Trace flag, Interruptflag, Direction flag, and Sign flag.

- What are the various interrupts in 8086?

Maskable interrupts, Non-Maskable interrupts

- What is meant by Maskable interrupts?

An interrupt that can be turned off by the programmer is known as Maskable interrupt.

- Which interrupts are generally used for critical events?

Non-Maskable interrupts are used in critical events Such as Power failure, Emergency, Shutoff etc.

- What is the Maximum clock frequency in 8086?

5 Mhz is the Maximum clock frequency in 8086.

- What are the various segment registers in 8086?

Code, Data, Stack, Extra

- Which Stack is used in 8086?

FIFO (First In First Out) stack is used in 8086.In this type of Stack the first storedinformation is retrieved first.

- What are the various registers in 8085?

Accumulator register, Temporary register, Instruction register, Stack Pointer, Program Counter are the various registers in 8085 .

- What is Stack Pointer

Stack pointer is a special purpose 16-bit register in the Microprocessor, which holds the address of the top of the stack

- What is Program counter?

Program counter holds the address of either the first byte of the next instruction to be fetched for execution or the address of the next byte of a multi byte instruction, which has not been completely fetched. In both the cases it gets incremented automatically one by one as the instruction bytes get fetched. Also Program register keeps the address of the next instruction.

- Which Stack is used in 8085?

LIFO (Last In First Out) stack is used in 8085.In this type of Stack the last stored information can be retrieved first.

- What is meant by a bus?

A bus is a group of conducting lines that carriers data, address, & control signals.

- What is Tri-state logic?

Three Logic Levels are used and they are High, Low, High impedance state. The high andlow are normal logic levels & high impedance state is electrical open circuit conditions. Tri-state logic has a third line called enable line.

- Give an example of one address microprocessor?

8085 is a one address microprocessor.

- In what way interrupts are classified in 8085?

In 8085 the interrupts are classified as Hardware and Software interrupts.

- Examples of Software interrupts?

RST0, RST1, RST2, RST3, RST4, RST5, RST6, RST7.

- Examples of Hardware interrupts?

TRAP, RST7.5, RST6.5, RST5.5, INTR.

- Which interrupt has the highest priority?

TRAP has the highest priority.

- Name 5 different addressing modes?

Immediate, Direct, Register, Register indirect, Implied addressing modes.

- How many interrupts are there in 8085?

There are 12 interrupts in 8085.

- What is clock frequency for 8085?

3 MHz is the maximum clock frequency for 8085.

- In 8085 which is called as High order / Low order Register?

Flag is called as Low order register & Accumulator is called as High order Register.

- Why crystal is a preferred clock source?

Because of high stability, large Q (Quality Factor) & the frequency that doesn't drift withaging. Crystal is used as a clock source most of the times.

- What does Quality factor mean?

The Quality factor is also defined, as Q. So it is a number, which reflects the lossness of acircuit. Higher the Q, the lower are the losses.