Intel Microprocessor Job Interview Questions And Answers

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Intel Microprocessor Interview Questions And Answers Guide.

Question - 1:

Intel Microprocessor Interview Questions Part Five!

Ans:

What is the difference between microcontrollers and microprocessor?
What is the function of bit slice processor?
How intel microprocessor different from other microprocessors?
What is the difference between core 2 duos and core 2 quads?
What is Microprocessor logic?
What are the basic functionalities that are being performed by microprocessor?
What are the components present in a microprocessor?
What are the different control lines that are present?
What is the use of control lines?
What is the process of communicating Memory with the Microprocessor?

View All Answers

Question - 2:

Intel Microprocessor Interview Questions Part Four!

Ans:

What are the different types of instructions that are present in microprocessor?
What is the function of LOADA mem and LOADB mem?
Which language is used to write microprocessor instructions?
What are the steps that are taken to decode an instruction code?
What is the difference between pipelined architecture and non-pipelined architecture?
How the address space is defined for different processors?
What are the features provided by intel microprocessors?
What are the different types of cache that is used by intel microprocessor?
How hyper-threading technology is provided with intel microprocessor?
What are the different types of processors used in intel microprocessor?

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Question - 3:

Intel Microprocessor Interview Questions Part Three!

Ans:

What is the difference between CISC and RISC processor?
What are the different types of flag registers used in intel microprocessor?
Explain the architecture of intel microprocessor?
What is the difference between 32 bit or 64 bit microprocessor?
What are the different addressing modes that are used in intel microprocessor?
What are the different types of instructions that are present in microprocessor?
What is the difference between SIM and RIM?
How to measure the quality factor of the microprocessor?
What are the different triggers present?
What is the difference between edge trigger and level trigger?

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Question - 4:

Intel Microprocessor Interview Questions Part Two!

Ans:

How to measure the clock frequency for 8086 intel microprocessor?

How tri-state logic defined?
What the difference is between stack and program counter?
What are the different functional units that are present in microprocessor?
What is the difference between Maskable and non-maskable interrupt?
What are the different types of flags that are available in microprocessor?
What is the difference between AMD processors and Intel microprocessors?
What are the steps involved in 5-stage pipelining?
What is the difference between stack and subroutine?
How to define the physical address of the microprocessor?

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Question - 5:

Intel Microprocessor Interview Questions Part One!

Ans:

What is the function of linker and loader?
What is the function of control unit?
How to find out the architecture of microprocessor?
What is the difference between direct and indirect addressing mode?
How 8086 is different from 80386 microprocessor?
What is the difference between high order and low order registers?
How many types of buses that are required to transfer the data in the system?
What are the devices that directly communicate with the microprocessor?
What is the term MESI signifies?
What is the difference between parallel and direct microprocessor?

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Question - 6:

Briefly explain following instructions in 8086 family:
a) CWD
b) LOOP
c) IMUL
d) SAR

Ans:

- CWD also known as the Convert signed Word to signed Double word instruction, it is used to extend the sign bit of a word in AX register to all the bits of the DX register. Generally used before a signed word in AX. Then it is divided by another signed word using IDIV instruction. It does not affect any flag.
- LOOP: (Jump to specified label until CX = 0): As the name suggests the loop instruction is used to repeat a sequence of instructions for a specified number of time. It does not affect any flag and the number of times the loop is to be repeated is stored in the CX register.
- IMUL: This instruction is used for the multiplication of two signed numbers.The result of imul between two signed numbers is signed as well. The OF (Over flow) and CF (Carry flag) flags get affected by this instruction.
- SAR: Also known as Shift each bit of operand right, this instruction shifts each bit of the operand in a register or memory location, right by the number of bits specified. The carry flag is affected by this operation.

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Question - 7:

What are the various types of addressing modes for microprocessors?

Ans:

The various types of addressing modes for microprocessors are as follows:
- Direct Mode: In this mode of addressing the instruction in itself includes memory access. This can be accessed by the CPU directly.
- Indirect Mode: In this type of addressing the address which has been specified within the instruction contains the address of the operands.
- Register direct and indirect modes: In this mode as the name suggests no addresses are specified in this mode instead registers are specified.
- Immediate Mode: In this type of addressing mode the operand itself is the data.
- Relative Mode: In this mode the operand specified in the instruction is an offset address and not the actual address.

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Question - 8:

Explain the characteristics of the RS232C and RS422A standards?

Ans:

The characteristics of RS232C are as follows:
- This standard has been defined for communication that is asynchronous. The timing between data bits are specified whereas the timing between two characters is not fixed.
- This standard guarantees 50 ft coverage and 25 signal lines are defined by it.
- For each direction only a single wire is defined.
The characteristics of the RS422A standard are as follows:
- The data rate of this standard is 10Mbits/sec.
- In this standard every signal is considered to be a pair of wires and the voltage difference between them is sensed by the receiver.

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Question - 9:

Write a program in assembly language to find out one`s and two`s complement for an 8 bit number?

Ans:

- The program to find the one`s complement of an eight bit number is as follows:

LDA 2501H
CMA
STA 2502H
HLT
- The program to find the two`s complement is as follows:
LDA 2501H
CMA
INR A
STA 2502H
HLT
View All Answers

Question - 10:

Briefly explain any 4 modes of operation of the 8254 interval timer?

Ans:

The following are the modes of operation of the programmable timer 8254:
- Mode 0: Also known as the interrupt on terminal count. In this mode the output is initially low. Once the count of terminal is reached the output becomes high.
- Mode 1: Programmable one shot is also known as the hardware triggered one-shot. For it to happen, the count registers must be loaded and the A 0-1 pulse has to be sent to the Gate input in order to trigger the counter.
- Mode 2: Rate generator, this process is repeated indefinitely.
- Mode 3: Square wave generator, when gate=1, The out is a square wave where the high pulse is equal to the low pulse of N is an even number. In case the N is an odd number the high pulse is longer. The mode-3 is commonly used for as frequency divider.

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Question - 11:

In assembly language, write the program to search for the largest number among n numbers which are stored in the memory?

Ans:

The program to detect the largest number among n numbers stored in the memory are as follows:
Step 1>>MOV AX, 0000
Step 2>>MOV SI, 0200
Step 3>>MOV CX, [SI]
Step 4>>BACK : INC SI
Step 5>>INC SI
Step 6>>CMP AX, [SI]
Step 7>>JAE GO
Step 8>>MOV AX, [SI]
Step 9>>GO: LOOP BACK
Step 10>>MOV [0251], AX
Step 11>>INT 3

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Question - 12:

Briefly explain the functions of Debugger, Assembler and the Linker?

Ans:

- Debugger: As its name suggests the debugger is used to test and debug programs. The debugger allows a user to test a program step by step, so that the problem points or steps can be identified and rectified. It allows the user to inspect the registers and the memory locations after a program has executed.
- Assembler: The assembler is used to convert assembly language written by a user or a program into a machine recognizable format.
- Linker: There are certain programs which are large in size and cannot be executed at one go simultaneously. Such programs are divided into subprograms also known as modules. The linker is used to link such small programs to form one large program.

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Question - 13:

Briefly explain DMA and its various addressing modes?

Ans:

- The DMA or the direct memory access is a type of process in which the System bus control is accessed and controlled by an external device in place of the CPU.
- It is primarily used for the high speed transfer of data from mass storage devices.
- The DMA functions by directly transferring data to and from from the memory to the devices.
- The various modes of operation of the DMA are as follows: Demand mode, Single mode, Block mode and Cascade mode.
- The characteristic of the demand mode is that it can transfer data until the Dreq input becomes inactive.

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Question - 14:

How can a Microprocessor based computer system be developed?

Ans:

In developing a Microprocessor based computer system the following steps are involved:
- The first step is to develop the CPU module.By doing so the basic system timing, sequential startup order is established.
- After that memory needs to be added: The primary memory is essential for the programs that are stored on the computer. There can be several forms of memories with different hierarchies. The CPU loads and fetches instruction from the memory.
- The third step is adding input/output: There are basically two hardware techniques for getting data into and out of a computer.
i. The parallel interface is the most common and natural form.
ii. The serial interface is the second technique

Question - 15:

What do you understand by MACRO? Explain the various conditional constructs used while programming a macro?

Ans:

- Macro can be considered to be a sequence of instructions to which a name is assigned.
- For short sequence of instructions which are of fixed nature Macros are used.
- They can execute faster as compared to subroutines.
- The MACRO directives are used to inform the assembler the starting of a macro.
- In order to enclose a macro the ENDM directive is used.
- The general format of the MACRO directive is :
Macro Name MACRO ARG1, ARG2 , ...,ARG N.
- To create macro sequences conditional assembly language statements are used. Theses statements control the flow of the program and are variations of the IF-THEN, IF-THEN-ELSE, DO-WHILE, and REPEAT-UNTIL constructs used in high-level language programming languages.

Question - 16:

Explain in Pentium processors how memory management has been improved?

Ans:

- By adding a paging unit and a new system in the memory system the management of it has been improved upon.
- Paging Unit: The paging mechanism works on 4KB memory pages or with a
new extension available to the Pentium with 4MB memory pages.
- Memory-management mode: The system memory-management mode (SMM) is on
the equal levels such as the protected mode, real mode, and virtual mode. Still the memory management mode function as a manager. High-level system functions such as power management and security are taken care of by it.

Question - 17:

Explain segments their pro`s and a method for their implementation?

Ans:

- The division of address space into logical sections is known as segmentation and each such space is known as a segment.
- In order to access a specific memory location, a program must specify both the segment number and the offset contained in that segment. Segment memory addressing divides the memory into many segments.
- One of the advantages of memory segmentation is that only 16 bit registers are
required to both store segment base address as well as offset address. Due to this the designing of the memory is simple.
- By using segmentation there is the advantage of relocability as well.

Question - 18:

Mention a few facts and properties of ENIAC?

Ans:

- ENIAC is also known as Electronic Numerical Integrator And Computer.
- It is considered to be the first general-purpose electronic computer.
- It was completely capable computer which can be reprogrammed to solve computing related problems.
- The ENIAC was used by the Americans for the first time to calculate the trajectories of artillery shells.
- ENIAC was designed and created by John Mauchly and J. Presper Eckert of the University of Pennsylvania.

Question - 19:

What do you understand by VESA local bus? Mention the cons of using it?

Ans:

VESA stands for Video Electronics Standards Association. It is used for the transmission of high speed input-output operations as well as to directly access the memory.
- It comprises of a various videos card and monitor manufacturers , they creates standards to define the resolution, number of colors, and other display properties.
- In this way graphics cards have direct access to the processor and system memory. It does not suffer from limitations of the ISA bus.
Some of the cons of using VESA are as follows:
- VESA suffers from interoperability issues.
- VESA Standard is also unreliable as there are multiple cases in which the hardware such as the monitor or the card to display are unstable and buggy.
- Highly dependent on the hardware configuration, getting the right combination is generally difficult.
- VLB cards are not easy to install / service.

Question - 20:

Explain briefly the role of the 8284 processor?

Ans:

- The 8284 is considered to be a supporting part for microprocessors. It is responsible for the generation of clock signals.
- The clock generator forms an intrinsic part of a circuit as without it every component in the system would have to create a signal for it independently.
- When F/C' is at logic, the oscillator output is steered through to the divide-by-3 counter.

Intel Microprocessor Interview Questions And Answers

Question - 21:

Describe briefly the external and internal bus of the 8088 processor?

Ans:

- Internal Data Bus: As its name suggests the internal data bus only works inside a CPU that is internally. It is able to communicate with the internal cache memories of
the CPU. Since they are internally placed they are relatively quick and are now affected by the rest of the computer.
- External Data bus: This type of bus is used to connect and interface the computer to its connected peripheral devices. Since they are external and do not lie within the
circuitry of the cpu they are relatively slower.
- The 8088 processor in itself contains a 16-bit internal data bus coupled with a 20-bit address register. This allows the processor to address to a maximum of 1 MB memory.

Question - 22:

Briefly mention the differences between VGA and CGA graphics?

Ans:

The characteristics of CGA are as follows:
- The CGA or the Color/Graphics adapter was the first color graphics card for IBM pc`s.
- It contain 16KB of video memory and used an Rca jack to connect to a Tv or monitor (NTSC compatible).
- It could also be connected to a RBGI interface CRT monitor (4-bit).
The characteristics of VGA graphics are as follows:
- The VGA or the video graphics array was a hardware introduced with the IMB PS/2 computers.
- It has been widely adopted world over and now actually implies the analog computer display standard.
- Eventually after much modifications by other manufacturers the VGA was superseded by SVGA.

Question - 23:

Describe briefly any three types of transmission?

Ans:

The various types of commonly used transmissions are as follows:
- Simplex Transmission: This type of data transmission involves data to be moved only in one direction. In this no data can be sent back using the same channel. A
good example of this form of transmission can be found in a keyboard.
- Half Duplex Transmission: This type of transmission allows data to be transferred in both directions but not at the same time. One end transmits while the other
receives.
- Full Duplex Transmission: In this type of transmission data can be sent and received at the same time. There are no two different modes such as transmit and
receive.

Question - 24:

Explain the 8279 operation?

Ans:

- The 8279 is basically a programmable keyboard and a component for display interfacing.
- The 8279 can scan and also encode a 64 key keyboard as well as a numerical display of 16 digits.
- The keyboard has a buffer based on FIFO to store up to 8 keys after which the processor must retrieve a character.
- It contains 8 lines that can be used to connect to 8 columns of a keyboard. There are two additional lines for STB keys.
- Once a key is pressed they are automatically debounced and it can function using two modes -key lockout and n-key roller.
- On simultaneous presses only the first key is detected. In case of n-key rollover mode all simultaneous presses are detected and stored in the internal buffer.

Question - 25:

Explain briefly the characteristics of the program invisible registers?

Ans:

- The program invisible registers are used to access and specify the address tables of global and local descriptor tables.
- Since these types of register cannot be accessed directly by a program they are called invisible registers.
- The Global Descriptor table register contains the limit and the base addresses for the descriptor table. The same applies for the Interrupt descriptor table register.
- Since the maximum length is limited to 64 Kbytes the limit of each descriptor table is limited to 16 bits.
- The GTDR is loaded with the address of the global descriptor table whenever a protected mode operation is required.

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