

RAM Job Interview Questions And Answers



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RAM Interview Questions And Answers Guide.

Question - 1:

What is Static RAM?

Ans:

No refreshing, 6 to 8 MOS transistors are required to form one memory cell, Information stored as voltage level in a flip flop. Dynamic RAM: Refreshed periodically, 3 to 4 transistors are required to form one memory cell, Information is stored as a charge in the gate to substrate capacitance.

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Question - 2:

Explain what is Virtual Memory?

Ans:

This is a method of extending the available physical memory on a computer. In a virtual memory system, the operating system creates a pagefile, or swapfile, and divides memory into units called pages. Recently referenced pages are located in physical memory, or RAM. If a page of memory is not referenced for a while, it is written to the pagefile. This is called "swapping" or "paging out" memory. If that piece of memory is then later referenced by a program, the operating system reads the memory page back from the pagefile into physical memory, also called "swapping" or "paging in" memory. The total amount of memory that is available to programs is the amount of physical memory in the computer in addition to the size of the pagefile.

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Question - 3:

Can you please explain the difference between RDRAM and SDRAM?

Ans:

RDRAM stands for Rambus Dynamic Random Access Memory. SDRAM stands for Synchronous Dynamic Random Access Memory. The two memories are completely different memory technologies and are not compatible with each other. RDRAM is a unique design developed by a company called Rambus, Inc. RDRAM is extremely fast and uses a narrow, high-bandwidth "channel" to transmit data at speeds much faster than SDRAM.

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Question - 4:

List the benefits of upgrading computers memory?

Ans:

Upgrading your memory is typically the easiest and least expensive way to upgrade your computer for a significant boost in performance. The computer's RAM memory is its workspace, or where all of the instructions it needs to act on are stored temporarily. Think of the RAM as the desk you use to sort through your work. If the size of that desk is small, your efficiency is limited in comparison to a larger desk that allows you to work more effectively and efficiently. Similarly, a computer with more RAM can work more efficiently because it does not need to retrieve information from the hard disk drive as often. A memory upgrade is particularly helpful for users who work with large files, have more than one program open at one time, or use memory-intensive applications such as games or graphics and video editing software.

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Question - 5:

How to know it's time for a memory upgrade?

Ans:

There are several signs indicating it may be time to upgrade your memory. If you see your mouse pointer turn into an hourglass for significant periods of time, if you hear your hard drive working, or if your computer seems to work more slowly than you expect, the reason is probably insufficient memory. When physical memory is insufficient, the system uses Hard Disk Space as memory. This is called "Virtual Memory". Since access time of Physical memory is in tens of NanoSeconds and Access time of Hard Disk is in MilliSeconds, the system slows down considerably.

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Question - 6:

Explain on what does microprocessor speed depend?

**Ans:**

The processing speed depends on DATA BUS WIDTH.

Factors on which the Processor speed depends:

- 1) Processor clock speed
- 2) Processor pipelining
- 3) Width of the data and address bus, i.e. Max Data that can be fetched at one stretch.
- 4) Support for floating point operations for faster floating point operations.

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Question - 7:

Explain why 8085 processor is called an 8 bit processor?

Ans:

Because 8085 processor has 8 bit ALU (Arithmetic Logic Review). Similarly 8086 processor has 16 bit ALU.

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Question - 8:

Can adding more RAM make Internet browsing faster?

Ans:

Maybe. Internet browsing speed depends on a huge number of factors, including your connection speed, traffic on the site you're visiting, and the other components in your system. You will probably notice the biggest improvement from additional RAM if are viewing or working with large files (such as photos and digital audio and video) or if you switch between your browser and other applications often.

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Question - 9:

Can you please explain the difference between 72 bit and 64 bit memory?

Ans:

72 bit memory is commonly known as ECC memory. It has an additional 8 bits for Error Correction Check 64 bit memory is non-ECC. 72 bit or 64 bit configuration are typically found in 168 pin DIMMs.

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Question - 10:

Random Access Memory interview questions part 5:

Ans:

41. What is shadow ram?
42. Explain what is the memory wall problem?
43. Explain the dual channel architecture?
44. Explain the triple channel architecture?
45. What is RAM parity?
46. What is the Unified memory architecture? Explain.
47. What is virtual memory?
48. What is a phase change memory?
49. Explain the refresh operation in a dynamic RAM?
50. Can two different RAM speed modules be used together?

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Question - 11:

Random Access Memory interview questions part 4:

Ans:

31. What is tCL timing?
32. What is tRCD timing?
33. What is tRP timing?
34. What is tRAS timing?
35. In a Ram description DDR 2 1066mhz "2.5-3-3-8" what do the numbers in quotes signify?
36. Explain the command rate in reference to RAM?
37. What is the tRC timing?
38. What is the tRTW/tRWT timing?
39. Explain the tRDA?
40. What is the limit of RAM capacity in a 32bit OS?

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Question - 12:

Random Access Memory interview questions part 3:

Ans:

21. What are the various capacities in which a RAM is available?
22. How can a DDR1 ram be identified from a DDR2 ram module physically?
23. Explain the basic concepts and hierarchy of memory?
24. Why is RAM also known as volatile memory?
25. State the differences between DDR1, 2 and 3.



26. What is SDRAM?
27. What is RDRAM?
28. What is feRAM?
29. What is ECC in reference to ram?
30. How does ECC works?

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Question - 13:

Random Access Memory interview questions part 2:

Ans:

11. What is bursting?
12. What is buffered RAM?
13. What is pipelining in reference to RAM?
14. What is SO-DIMM in reference to RAM?
15. Why are Wait states used?
16. What are banks in reference to RAM?
17. What are the functions of the RAM IC`s?
18. What is the difference between RAM and cache memory?
19. How is the maximum addressable memory calculated?
20. What does the 400 Mhz signify in a ram specification?

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Question - 14:

Random Access Memory interview questions part 1:

Ans:

1. How does a RAM function?
2. What are differences between RAM and ROM?
3. What is a flash memory?
4. What are the different RAM standards/versions?
5. What is the purpose of RAM in a computer?
6. What kind of memory is a RAM categorized as?
7. How does the CPU and the RAM communicate?
8. What is the function of the control lines in RAM?
9. What are the different types package forms?
10. How is the total memory on a ram stick calculated?

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Question - 15:

Explain the virtual memory?

Ans:

In computing, virtual memory is a memory management technique developed for multitasking kernels. This technique virtualizes a computer architecture's various forms of computer data storage such as random-access memory and disk storage, allowing a program to be designed as though there is only one kind of memory, "virtual" memory, which behaves like directly and contiguous addressable read/write memory.

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Question - 16:

Random Access Memory(RAM) Interview Questions:

Ans:

- How does a RAM function?
- What are differences between RAM and ROM?
- What is a flash memory?
- What are the different RAM standards/versions?
- What is the purpose of RAM in a computer?
- What kind of memory is a RAM categorized as?
- How does the CPU and the RAM communicate?

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Question - 17:

What is RAM parity?

Ans:

RAM parity checking is the storing of a redundant parity bit representing the parity odd or even of a small amount of computer data typically one byte stored in random access memory, and the subsequent comparison of the stored and the computed parity to detect whether a data error has occurred. The parity bit was originally stored in additional individual memory chips; with the introduction of plug-in DIMM, SIMM, etc. modules, they became available in non-parity and parity (with an extra bit per byte, storing 9 bits for every 8 bits of actual data) versions.

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Question - 18:

What is shadow ram?

Ans:



Shadow RAM is a copy of Basic Input/Output Operating System (BIOS) routines from read-only memory (ROM) into a special area of random access memory (RAM) so that they can be accessed more quickly. Access in shadow RAM is typically in the 60-100 nanosecond range whereas ROM access is in the 125-250 ns range. In some operating systems such as DOS, certain BIOS routines are not only used during the boot or startup of the system, but also during normal operation, especially to drive the video display terminal. In Windows and OS/2, however, these routines are not used and the use of shadow RAM is not necessary. In some systems, the user can turn the use of shadow RAM off or on.

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Question - 19:

What is tRAS?

Ans:

tRAS is the minimum number of clock cycles needed to access a certain row of data in RAM between the data request and the precharge command. It's known as active to precharge delay. According to Mushkin.com, in practice for DDR SDRAM, this should be set to at least tRCD + tCAS + 2 to allow enough time for data to be streamed out. [1]. It stands for row address strobe time.

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Question - 20:

What is tRP?

Ans:

tRP is the number of clock cycles needed to terminate access to an open row of memory, and open access to the next row. It stands for row precharge time.

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Question - 21:

What is tCAS?

Ans:

tCAS is the number of clock cycles needed to access a certain column of data in SDRAM. CAS latency is the column address strobe time, sometimes referred to as tCL.

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Question - 22:

What is tRCD timing?

Ans:

tRCD is the number of clock cycles delay required between an active command row address strobe (RAS) and a CAS. It is the time required between the memory controller asserting a row address, and then asserting a column address during the subsequent read or write command. tRCD stands for row address to column address delay time.

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Question - 23:

What is ECC memory?

Ans:

Error-correcting code memory (ECC memory) is a type of computer data storage that can detect and correct the more common kinds of internal data corruption. ECC memory is used in most computers where data corruption cannot be tolerated under any circumstances, such as for scientific or financial computing. ECC memory maintains a memory system effectively free from single-bit errors: the data that is read from each word is always the same as the data that had been written to it, even if a single bit actually stored, or more in some cases, has been flipped to the wrong state. Some non-ECC memory with parity support allows errors to be detected, but not corrected; otherwise errors that may occur are not detected.

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Question - 24:

What is feRAM?

Ans:

Ferroelectric RAM is a random-access memory similar in construction to DRAM but uses a ferroelectric layer instead of a dielectric layer to achieve non-volatility. FeRAM is one of a growing number of alternative non-volatile random-access memory technologies that offer the same functionality as flash memory. FeRAM advantages over flash include: lower power usage, faster write performance and a much greater maximum number of write-erase cycles. Disadvantages of FeRAM are much lower storage densities than flash devices, storage capacity limitations, and higher cost.

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Question - 25:

What is RDRAM?

Ans:

Direct Rambus DRAM or DRDRAM (sometimes just called Rambus DRAM or RDRAM) is a type of synchronous dynamic RAM. RDRAM was developed by Rambus inc., in the mid-1990s as a replacement for then-prevalent DIMM SDRAM memory architecture.

RDRAM was initially expected to become the standard in PC memory, especially after Intel agreed to license the Rambus technology for use with its future chipsets. Further, RDRAM was expected to become a standard for VRAM. However, RDRAM got embroiled in a standards war with an alternative technology - DDR SDRAM, quickly losing out on grounds of price, and, later on, performance. By the early 2000s, RDRAM was no longer supported by any mainstream computing architecture.

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Question - 26:

What is SDRAM?

Ans:

Synchronous dynamic random access memory (SDRAM) is dynamic random access memory (DRAM) that is synchronized with the system bus. Classic DRAM has an asynchronous interface, which means that it responds as quickly as possible to changes in control inputs. SDRAM has a synchronous interface, meaning that it waits for a clock signal before responding to control inputs and is therefore synchronized with the computer's system bus. The clock is used to drive an internal finite state machine that pipelines incoming commands. The data storage area is divided into several banks, allowing the chip to work on several memory access commands at a time, interleaved among the separate banks. This allows higher data access rates than an asynchronous DRAM.

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