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How DRAM memory works - Quiz

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How DRAM memory works - Quiz Ideas

1) What is the most common operation involving memory happening inside a computer when you load a program or video game?
   A. Calculating mathematical equations
   B. Copying data from SSD to DRAM
   C. Rendering graphics
   D. Sending data to the internet

2) How much faster is accessing data from DRAM compared to SSD?
   A. 30 times faster
   B. 300 times faster
   C. 3000 times faster
   D. 30,000 times faster

3) What is the capacity difference between a typical DRAM memory module (stick) and a solid-state drive (SSD)?
   A. DRAM holds more data than SSD
   B. SSD holds more data than DRAM
   C. Both hold the same amount of data
   D. DRAM holds data permanently, SSD does not

4) What is prefetching in the context of computer operations?
   A. Moving data before it's needed
   B. Deleting unnecessary files
   C. Compressing data to save space
   D. Encrypting data for security

5) Why do video games have DRAM capacity requirements?
   A. To store game data permanently
   B. To access game data quickly during gameplay
   C. To store leaderboard information permanently
   D. To reduce the size of the game files

6) What are the two main components of the DRAM memory cell?
   A. Capacitor and resistor
   B. Transistor and diode
   C. Capacitor and transistor
   D. Resistor and diode

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7) What does a capacitor in a DRAM 1T1C memory cell store?
   A. One bit (binary digit) of data
   B. Multiple bits (binary digits) of data
   C. Resistance state
   D. Magnetic fields

8) Why do DRAM capacitors need to be refreshed periodically?
   A. To increase storage capacity
   B. To improve read/write speed
   C. To reduce power consumption
   D. To restore data due to charge leakage

9) What is the role of the sense amplifier in a DRAM cell?
   A. To store data
   B. To isolate the capacitor
   C. To connect the wordline and bitline
   D. To amplify the voltage change on the bitline

10) True or False. In DRAM memory, rows, columns and banks are an addressing system used to select a specific set of bits to access.
   A. True
   B. False

11) In the video, to ensure data is not lost, how often does the refresh operation occur for each bank in the DRAM mentioned?
   A. DRAM does not need refresh
   B. Every 64 milliseconds
   C. Every 1 second
   D. Once a day

12) What is a row hit in DRAM? (Remember: row refers to a wordline)
   A. When a row is closed
   B. When a row is damaged
   C. When two rows are connected to each other
   D. When a row is already open and can be accessed again

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