

Distinguish, differentiate, compare and explain what is the main difference between Static and Dynamic RAM. Comparison and Differences.

Difference between Static and Dynamic RAM

1. SRAM stores bits in memory cells composed of flip-flops. DRAM Memory cells are composed of capacitors and transistors.
2. In Static RAM, each cell which can store a single bit requires six transistors. In Dynamic RAM, each cell requires a capacitor (which stores a bit as charge) & a transistor.
3. SRAM does not need to be refreshed periodically as flip-flops retain the data. DRAM needs to be refreshed every few milliseconds to retain data because the charge of the capacitor leaks.
4. SRAM has faster access time compared to DRAM, therefore used as caches mostly. DRAM has slower access time compared to SRAM as it cannot be read while being refreshed.
5. Static RAM has low density/less memory per chip due to more circuitry required for a single cell. Dynamic RAM has high chip density/more memory per chip compared to SRAM due to less circuitry for a single cell.
6. SRAM consume more power than DRAM because of low chip density. DRAM has a simple circuitry.
7. Static RAM is more costly in terms of cost per bit compared to DRAM due to low chip density.