41 Lecture - CS501

Important Mcqs

1. **What is the hit rate of a cache with 2000 cache lines, where 1500 references were made and 300 misses occurred?**
   a. 85%
   b. 80%
   c. 75%
   d. 70%
   Answer: a

   What is the miss rate of a cache with 512 cache lines, where 1000 references were made and 50 misses occurred?
   a. 5%
   b. 10%
   c. 15%
   d. 20%
   Answer: a

   If a cache access takes 5 ns and a DRAM access takes 50 ns, and the hit rate of the cache is 90%, what is the average memory access time?
   a. 5.5 ns
   b. 6.5 ns
   c. 7.5 ns
   d. 8.5 ns
   Answer: b

   A program has a total of 10,000 memory references, of which 1000 are cache misses. What is the hit rate of the cache?
   a. 90%
   b. 85%
   c. 80%
   d. 75%
   Answer: a

   A cache has 512 lines, each of which can hold 32 bytes. How many bits are required to address a byte in this cache?
   a. 7 bits
   b. 8 bits
   c. 9 bits
   d. 10 bits
   Answer: c

   If a cache has a hit rate of 95%, what is the miss rate?
   a. 5%
   b. 10%

c. 15%
d. 20%
Answer: a

If a cache has a hit rate of 80% and an access time of 5 ns, and a DRAM has an access time of 50 ns, what is the average memory access time?
a. 9 ns
b. 10 ns
c. 11 ns
d. 12 ns
Answer: c

A cache has a hit rate of 90% and an access time of 5 ns. What is the effective access time if the cache is split into two levels, where the L1 cache has a hit rate of 95% and an access time of 2 ns, and the L2 cache has a hit rate of 80% and an access time of 10 ns?
a. 4.1 ns
b. 4.5 ns
c. 5.0 ns
d. 5.5 ns
Answer: b

A cache has 256 lines, each of which can hold 64 bytes. What is the total capacity of the cache in bytes?
a. 16384 bytes
b. 32768 bytes
c. 65536 bytes
d. 131072 bytes
Answer: b

If a cache has a hit rate of 80% and an access time of 5 ns, and a DRAM has an access time of 50 ns, what is the speedup achieved by the cache?
a. 4x
b. 5x
c. 6x
d. 7x
Answer: c