**Name:**

Q1- Calculate the tag, word and block/set needed if the memory size is 512K. Assume that the each line of the memory contain 128 words and the cache size is 2K, for the following cases:

1. Direct mapping. 2- Associative mapping. 3- 4-ways set associative mapping.

Q2- Compare between the SRAM and the DRAM.

Q3 - A processor has an on-chip cash that runs in one cycle of 5 ns. This cash has a hit rate of 90%. A second-level cache runs in three cycles and has a hit rate of 80% of all accesses that are not found and on-chip cache all accesses that are not found in either cash are found in main memory with an excess time of 60 ns. Calculate the overall memory access time.

Q4 – A Processor has an on-chip cache that runs in one cycle with 5ns.This cache has a hit rate of 90%. A second-level [motherboard] cache runs in four cycles and has a hit of 60% of all accesses that are not found in the on-chip cache. All accesses that are not found in either cache are found in main memory, if overall memory access time 7.9ns calculate the memory access time.