

Time = 30 minutes

### Quiz#2/Marks- 5

Consider a machine with a byte addressable main memory of 64K bytes and block size of 8 bytes. Assume that a direct mapped cache consisting of 64 lines is used with this machine.

a. Show the memory address format.

b. Into what line would bytes with each of the following addresses be stored?

0001 0001 0001 1011

0000 0001 0001 1000

1001 0001 0000 1011

1001 0000 0001 1011

0001 0001 0001 1011

0001 0000 0001 1011

c. How many addresses can be found in cache assuming the cache is initially empty.

### Quiz#3/Marks-5

Assume a Computer design problem having following parameters:

Main memory: 4KB, Direct mapped cache, Cache size: 32 lines, Block size: 8

Bytes. Computer program accesses (in order) memory locations: 7, 8, 24, 25, 256, 260, 280, 520, 524, 1024

(i) What is the hit ratio?

(ii) What are the final cache contents?

Assume that the first three blocks of RAM are already copied into cache.