

1. Consider a direct-mapped cache with 64 blocks and a block size of 16 bytes. Find out cache block number which will contain the main memory address 1204.
2. Consider a 4 way set associative cache with 64 KB capacity and 128 byte lines. The system containing the cache uses 32 bit addresses.
 - i) How many blocks and sets does the cache have?
 - ii) How many tag entries are required?
 - iii) How many bits are required to represent a tag field?
 - iv) How many address bits are required to find the byte offset within a cache block?
3. A processor has 36 bit virtual addresses, 30 bit physical addresses and 2 KB pages. How many bits are required for the virtual and physical page number?
4. How many RAM chips of size (512 K x 1 bit) are required to build 2kB memory? Draw the block diagram.