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.
3. How many blocks and sets does the cache have?
4. How many tag entries are required?
5. How many bits are required to represent a tag field?
6. How many address bits are required to find the byte offset within a cache block?
7. 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?
8. How many RAM chips of size (512 K x 1 bit) are required to build 2kB memory? Draw the block diagram.