CSE 3313, Section-C

Assignment

Marks: 20

Q1. Consider, you have decided to design a 1 KB cache and your block size is 2 words. Consider that your main memory is byte-addressable and each memory address consists of 16 bits.

(a) How many blocks are there in your cache?

(b) Find the hit rate if you access the following memory addresses in the given order. Assume that the cache is initially empty.

6, 11, 31, 1027, 5, 1032, 12, 4

(c) Find the number of offset and tag bits.

(d) "If you expand your block size to 8 words, you will have a reduced miss rate than that obtained in part (b)"- justify the statement

Q2. The address field of a direct-mapped cache is given below

Tag	Offset	Index
63-50	49-32	31-0

(a) Calculate the number of blocks and bytes/blocks.

(b) Calculate the actual size of the cache.