

1.

Configuration		1 way	2 way	4 way	8 way	16 way
MM = 512 bytes, Cache = 128 bytes, Block = 16 bytes	Number of sets in cache	8	4	2	1	
	Number of banks in MM	64	128	256	512	
	Number of bits for memory address	9	9	9	9	
	Number of bits for tag	2	3	4	5	
	Number of bits for index	3	2	1	0	
	Number of bits for offset	4	4	4	4	
	Number of comparisons for tag	1	2	4	8	
MM = 1024 bytes, Cache = 128 bytes, Block = 16 bytes	Number of sets in cache	8	4	2	1	
	Number of banks in MM	128	256	512	1024	
	Number of bits for memory address	10	10	10	10	
	Number of bits for tag	3	4	5	6	
	Number of bits for index	3	2	1	0	
	Number of bits for offset	4	4	4	4	
	Number of comparisons for tag	1	2	4	8	
MM = m bytes, Cache = c bytes,	Number of sets in cache	$c/(b*1)$	$c/(b*2)$	$c/(b*4)$	$c/(b*8)$	$c/(b*16)$

Block = b bytes	Number of banks in MM	m/s	m/s	m/s	m/s	m/s
	Number of bits for memory address	Log base 2(m)	Log base 2(m)	Log base 2(m)	Log base 2(m)	Log base 2(m)
	Number of bits for tag	m-(b+s)	m-(b+s)	m-(b+s)	m-(b+s)	m-(b+s)
	Number of bits for index	Log base 2(m)	Log base 2(m)	Log base 2(m)	Log base 2(m)	Log base 2(m)
	Number of bits for offset	Log base 2(m)	Log base 2(m)	Log base 2(m)	Log base 2(m)	Log base 2(m)
	Number of comparisons for tag	1	2	4	8	

2. 6.30

12	11	10	9	8	7	6	5	4	3	2	1	0
CT	CT	CT	CT	CT	CT	CT	CT	CI	CI	CI	CO	CO

6.31

12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	1	1	1	0	0	0	1	1	0	1	0

Param	Value
CO	0x02
CI	0x06
CT	0x38
Cache hit?	Y
Cache by returned	0xEB

6.32

12	11	10	9	8	7	6	5	4	3	2	1	0
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1	0	1	1	0	1	1	1	0	1	0	0	0
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Param	Value
CO	0x00
CI	0x02
CT	0xB7
Cache hit?	N
Cache by returned	

6.33

0x1788, 0x1789, 0x178A, 0x178B, 0x16C8, 0x16C9, 0x16CA, 0x16CB

3. P1. To determine ca
  - p2. block size: 16
  - Set size: 16
  - Cache bank size: 256
  - Cache size: 1024
  - Main memory size: 4096
  - P4.?
  - p5. Find the number of blocks to be replaced for the above mapping scheme: 6?
  - p6. Find the number of cache misses including compulsory misses: 14
  - p7. Find the number of cache hits: 6