

Score: _____

Name: _____

ECE 3055 Quiz 7 - July 10, 2002

Assume a 16-entry direct-mapped TLB is used in a system with 32-bit virtual byte addresses, 24-bit physical memory byte addresses, and 4096 byte pages. For the sequence of virtual addresses shown below in hex, state whether each address causes a TLB hit or miss and show the physical address generated. Portions of the initial contents of the TLB and the page table are given. Assume all listed page table entries are valid. Show the final contents of the TLB after this sequence of addresses is accessed.

Virtual address sequence

Address	Hit/Miss	Physical Address
00000171	H 1	200 171
00022CE2	H 2	A00 CE2
00023AE3	M 3	E20 AE3
00001012	M 4	F00 012
00000EE1	H 5	200 EE1
00020153	M 6	720 153

TLB Initial Contents

Block	Tag	Data
0	0000	200
1	0002	C00
2	0002	A00
3	0020	E20

Handwritten notes: 0002, 0000, 720, F00, E20, 0002, E20

TLB Final Contents

Block	Tag	Data
0	7	720
1	8	F00
2	9	A00
3	10	E20

Page Table Initial Contents

Virtual Page #	Data
00000	200
00001	F00
00002	550
00003	300
...	
00020	720
00021	C00
00022	A00
00023	E20