CSSE 332 – Operating Systems
Rose-Hulman Institute of Technology
Computer Science and Software Engineering Department

Page Table Structure A

Name:_____ Box:_____

(12 points) Consider a single level paging system. Assume that frames are 1024 Bytes.

Virtual Address

Page #	Offset

Physical Address

Frame #	Offset

Page Table Ptr

256

Main Memory

Addresss	Valid bit	Frame Number
0	1	104
4	1	334
8	0	45
12	1	891
16	1	115
...		
256	0	333
260	0	228
264	0	610
268	0	200
272	1	324
276	1	900
280	1	1005
284	0	820
288	1	20
292	0	5
296	0	1005
300	0	220
304	1	4
308	1	303
312	1	689
316	0	446
320	1	848
324	0	666
328	1	111
332	1	229

For each of the following virtual addresses, determine whether or not a page fault occurs, and if a page fault does not occur, translate the virtual address to a physical address.

1. 2|105

2. 5|640

3. 12|320

Consider a 32-bit addressing scheme with 18 bits for the page number, 14 for the offset and 4 GB of physical memory.

4. How many entries are there in the page table?

5. What is the minimum size of each page table entry?

6. What is the size of each page?