**CSC 456 Operating Systems Spring 2021**

**Instructor: Dr. Stephen Krebsbach Assignment #5**

**26 points Due: April 22nd 9:00 AM (CST)**

**Record You answers using the Quiz for Assignment 5**

Please do the following.

1. (5 pts) What is the TLB “Reach” if the Number of entries is 10 and the size of a page is 1024 1-byte words.
   1. 10240 bytes
   2. 10 bytes
   3. 102.4 bytes
   4. 1024 bytes
2. (5 pts) What is goal when setting the size of the “delta” ( /\_\ = ?) as part of the Working Set model?
   1. to encompass the entire locality (not too many or too small)
   2. use all free frames
   3. set the number of Page Faults
   4. To set the number of different windows used
3. (2 pts) Assuming a 1-KB (1024 bytes) page size, what is the page number (p) and offset(d) for the following address reference (values are in decimal) - Address : **1025**
   1. p = 1 d = 1

b) p = 10 d = 25

c) p = 102 d = 5

d) p = 2 d = 24

1. (2 pts) Assuming a 1-KB (1024 bytes) page size, what is the page number (p) and offset(d) for the following address reference (values are in decimal) - Address : **2450**

a) p = 2 d = 402

b) p = 1 d = 302

c) p = 102 d = 5

d) p = 2 d = 24

1. (2 pts) Consider the logical address space of 32 pages of 1024 words each, mapped into a Physical memory of 64 frames. How many **bits** are there in the **logical** address?
   1. 15
   2. 32

c) 32,768

d) 64

1. (2 pts) Consider the logical address space of 64 pages of 1024 words each, mapped into a Physical memory of 32 frames. How many **bits** are there in the **Physical** address?
   1. 15
   2. 32

c) 128

d) 65,536

1. (2 pts) Consider the following segment table

|  |  |  |
| --- | --- | --- |
| **Segment** | **Base** | **Length** |
| 0 | 200 | 350 |
| 1 | 2200 | 150 |
| 2 | 50 | 30 |

What is the physical address of the following logical address? Address : (**0 , 310)**

a) 510

b) 670

c) 201

d) Segmentation Fault

1. (2 pts) Consider the following segment table

|  |  |  |
| --- | --- | --- |
| **Segment** | **Base** | **Length** |
| 0 | 200 | 350 |
| 1 | 2200 | 150 |
| 2 | 50 | 30 |

What is the physical address of the following logical address? Address : (**1 , 205)**

* 1. Segmentation Fault

b) 2405

c) 2201

d) 405

1. (2 pts) Consider the following page reference string: **1,2,1,3,4,3,2,3,4,7,3,1** Assuming **pure** demand paging and **3 frames** allocation, how many page faults will the First-in-First-Out (**FIFO**) algorithm produce?
   1. 6
   2. 3
   3. 12
   4. 1
2. (2 pts) Consider the following page reference string: **1,2,1,3,4,3,2,3,4,7,3,1** Assuming **pure** demand paging and **3 frames** allocation, how many page faults will the Optimal (**OPT**) algorithm produce?
   1. 6
   2. 3
   3. 12
   4. 1