

ASSIGNMENT 3 (5%)

CS330 - 001 INTRODUCTION TO OPERATING SYSTEMS • WINTER SEMESTER 2020

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AVAILABLE ON: January 16th, 2020

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Please answer the following questions in complete sentences. Your answer to each question should be about 150 words. (120 marks)

1. What are the advantages of using dynamic loading? **(6 marks)**
 2. Explain the basic method for implementing paging. **(8 marks)**
 3. Briefly describe the segmentation memory management scheme. How does it differ from the paging memory management scheme in terms of the user's view of memory? **(8 marks)**
 4. Explain the distinction between a demand-paging system and a paging system with swapping. **(8 marks)**
 5. How does the second-chance algorithm for page replacement differ from the FIFO page replacement algorithm? **(8 marks)**
 6. Explain how copy-on-write operates. **(8 marks)**
 7. If you were creating an operating system to handle files, what are the six basic file operations that you should implement? **(8 marks)**
 8. To create a new file, an application program calls on the logical file system. Describe the steps the logical file system takes to create a file. **(8 marks)**
 9. How is a hash table superior to a simple linear list structure? What issue must be handled by hash table implementation? **(8 marks)**
 10. What are the factors influencing the selection of a disk-scheduling algorithm? **(8 marks)**
 11. Explain the disadvantage(s) of the SSTF scheduling algorithm. **(8 marks)**
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12. Explain the concepts of a *bus* and a *daisy chain*. Indicate how these concepts are related. **(8 marks)**
 13. What are the three reasons that buffering is performed? **(6 marks)**
 14. Why is it important to distinguish between mechanisms of protection and policies of protection? **(4 marks)**
 15. What is an *access matrix*, and how can it be implemented? **(4 marks)**
 16. How does a *virus* differ from a *worm*? **(4 marks)**
 17. What is the difference between *symmetric encryption* and *asymmetric encryption*? **(4 marks)**
 18. What are the two main varieties of authentication algorithms? **(4 marks)**
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