CS 314 Operating Systems, Spring 2016
Quiz #2 on January 26, 2016
List of the possible questions

#1: What is “process”?  

#2: Describe how processes differ from programs by mentioning at least three differences between them. 

#3: What does “PCB” stand for? Why does OS needs PCB? 

#4: Mention at least three different information contained in a PCB about human users. Briefly mention why it is needed for each information. 

#5: Mention at least two different information contained in a PCB about processor. Briefly mention why it is needed for each information. 

#6: Mention at least two different information contained in a PCB about memory. Briefly mention why it is needed for each information. 

#7: Mention at least two different information contained in a PCB about I/O resources. Briefly mention why it is needed for each information. 

#8: What is “monolithic structure OS” (define the one)? Mention at least one primary advantage and disadvantage. 

#9: What is “Virtual Machine” (define the concept)? 

#10: What is the primary motivation(s) to use VM’s? 

#11: Sketch how VM is implemented in memory. 

#12: Look up the meaning of the following word using your textbook: “OS kernel”. 

#13: Many operating systems use “external commands”. What are they? What is the primary reason to adopt them? What is the primary difference between “external commands” and “micro-kernel architecture”? 

#14: Describe how “micro-kernel architecture” and “non micro-kernel architecture” are different in how system calls issued by user applications will be executed. 

#15: What are the advantages in using “micro-kernel architecture”? What is the primary disadvantage in “micro-kernel architecture”?
#16: What is “process scheduling”?  

#17: What are the three different levels of “process scheduling” (just name the three)?  

#18: What is “the long-term process scheduling”?  

#19: What are the two major reasons the long-term scheduling rejects starting a new process?  

#20: What is “thrashing”?  

#21: Technically explain how “multi-tasking” can improve the processor utilization.  

#22: In the following sentence: “The long-term scheduler is the main component that controls __________ in multitasking operating systems”, fill out the blank by a word that best fits to the blank.  

#23: What are the two states in “the long-term process scheduling”?  

#24: What is “Blocked” state in “the long-term process scheduling”?  

#25: What is “the short-term process scheduling”?  

#26: What are the three states in “the short-term process scheduling”?  

#27: What is “Ready” state in “the short-term process scheduling”?  

#28: What is “Running” state in “the short-term process scheduling”?  

#29: What is “Blocked” state in “the short-term process scheduling”?  

#30: What is “the medium-term process scheduling”?  

#31: Show a sketch of the integration of the short-term, medium-term, and long-term process scheduling as a directed state-transition diagram.  

#32: What is “throughput” (in the context of process scheduling)?  

#33: What is “response time” (in the context of process scheduling)?  

#34: What is “turnaround time” (in the context of process scheduling)?

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