My SUTD   **Courses**   Services   Copyright   Sim Jia Ren   **6**   Student Corner

🏠   Week 2   **Review Test Submission: Quiz 1**

Review Test Submission: Quiz 1

User	Sim Jia Ren .
Course	2110 ISTD - 50.005 : Computer System Engineering
Test	Quiz 1
Started	2/4/21 9:00 AM
Submitted	2/4/21 9:14 AM
Due Date	2/4/21 9:15 AM
Status	Completed
Attempt Score	9 out of 15 points
Time Elapsed	14 minutes
Results Displayed	All Answers, Submitted Answers, Correct Answers

Question 1

Consider data accesses under caching. The cache has an access time of 30ns and a hit rate of α. In the case of a cache miss, the data will be accessed from main memory, which has an access time of 70ns. What is the minimum value of α such that the effective access time is at most 51ns?

Write your answer as numbers only. Your answer should range between 0 to 1.

Selected Answer: ❌ 0.475
Correct Answer: ✅ 0.7
Answer range +/- 0 (0.7 - 0.7)

Question 2

Which of the following statement(s) characterize multiprogramming system? Selecting an incorrect answer results in penalty. The minimum score for this question is 0.

Selected
Answers: ❌
                  If a running process has to wait for I/O, the OS will wait and stall execution until I/O arrives for this process.

                  ✅ Jobs are organized such that CPU always has one to execute

Answers: ✅ Single user cannot keep I/O devices busy at all times

                  Interrupt line must be disabled so context switch cannot happen

                  If a running process has to wait for I/O, the OS will wait and stall execution until I/O arrives for this process.   ← **OK**

✅ Jobs are organized such that CPU always has one to execute

Question 3

What are the benefits of microkernel system structure? Select all that apply. Selecting an incorrect answer will result in penalty. The minimum score for this question is 0.

Selected Answers: ✅ Better reliability and modularity

❌ Each uses functions and services provided by the layer immediately beneath it

✅ Easier to extend since user-space code is easier to debug

Answers: ✅ Better reliability and modularity

Each uses functions and services provided by the layer immediately beneath it

✅ Easier to extend since user-space code is easier to debug

Fast since there's no dual mode operation

Question 4

After a computer is powered up, its CPU starts execution in _____ mode.

Type a 1-word answer to the above.

Selected Answer: ✅ kernel

Correct Answer:

Evaluation Method	Correct Answer	Case Sensitivity
✅ Exact Match	kernel	
✅ Exact Match	supervisor	

Question 5

Application programs typically runs mostly in _____ mode.

Selected Answer: ✅ user

Correct Answer:

Evaluation Method	Correct Answer	Case Sensitivity
✅ Exact Match	user	

Question 6

New input to the system from mouse click or keyboard press is a _____ interrupt.

Type a 1-word answer to the above.

Selected Answer: ✅ hardware
Correct Answer:

Evaluation Method	Correct Answer	Case Sensitivity
✅ *Exact Match*	hardware	

Question 7

Consider an example where we want to allow modules to be loaded into the kernel. We can work on the details about how they are linked and inserted into the kernel. We can also decide who is allowed to load a module into the kernel and which modules can be loaded. The former is called the _____ while latter concerns policy.

Type a 1-word answer to the above

Selected Answer: ✅ mechanism
Correct Answer:

Evaluation Method	Correct Answer	Case Sensitivity
✅ *Exact Match*	mechanism	

Question 8

A program is a process in execution.

Selected Answer: ✅ False
Answers: True
      ✅ False

Question 9

A cache miss is handled by the OS kernel.

Selected Answer: ✅ False
Answers: True
      ✅ False

Question 10

I/O devices and the CPU can execute concurrently.

Selected Answer: ✅ True
Answers: ✅ True
      False

Question 11

Cache generally holds much more data than main memory (RAM).

Selected Answer: ✅ False
Answers: 			True
			✅ False

Question 12

Consider a process that has been running a program in user mode. To swap the contents of two registers, the process need to switch execution to kernel mode.

Selected Answer: ❌ True
Answers: 			True
			✅ False

Monday, February 8, 2021 8:16:27 PM SGT