Q5

Due Sep 23 at 11:59pm   **Points** 90   **Questions** 4
Available Sep 22 at 12pm - Sep 23 at 11:59pm 1 day   **Time Limit** 20 Minutes

This quiz was locked Sep 23 at 11:59pm.

Attempt History

	Attempt	**Time**	**Score**
LATEST	**Attempt 1**	8 minutes	12.5 out of 90 *

* Some questions not yet graded

Score for this quiz: **12.5** out of 90 *
Submitted Sep 23 at 11:24pm
This attempt took 8 minutes.

Question 1	**Not yet graded / 25 pts**

Suppose a cache with hit time = 1ns, miss time = 5ns. CPU sends a sequence of memory addresses: A1, A2, A3 such that A1 misses, but both A2 and A3 hit. For blocking and non-blocking caches, find total time to serve those three memory accesses.

Your Answer:

1. blocking takes 8ns

2. non-blocking takes 6ns

> blocking: 8ns
> non-blocking: 6ns

Question 2

Not yet graded / 20 pts

Briefly and accurately describe the purpose of TLB.

Your Answer:

Translation Lookaside Buffer is a memory cache that is used to reduce the time taken to access a memory location. Maps va to page number (page table basically).

> TLB can be viewed as a cache to page tables for fast address translation.
>
> It maps a virtual page number to a physical page number.

Question 3

Not yet graded / 20 pts

Indicate two roles of virtual memory system.

Your Answer:

1. Used for memory management (usually by the OS), is basically cache for main memory and allows it to run stuff with mem reqs larger than system mem.

2. Increases security, if done right, to keep users/system memory properly separated.

any two of: memory management, sharing, protection.

Also OK: provide an illusion of arbitrarily large physical memory for programs, support multiprogramming where multiple programs share the same physical memory.

Question 4   12.5 / 25 pts

Fill in the blanks of the sentence below.

In virtual memory, a [virtual address] from CPU is divided into [virtual page] and page offset. Next, the [virtual page] is used to index the [page table] to find the [physical page], which is then combined with the [page offset] for the physical address.

*** Note: write all your answers in LOWER CASE only. ***

Answer 1:

Correct!   virtual address

Answer 2:

You Answered   virtual page

Correct Answer   virtual page number

Answer 3:

You Answered

> virtual page

Correct Answer

> virtual page number

Answer 4:

Correct!

> page table

Answer 5:

You Answered

> physical page

Correct Answer

> physical page number

Answer 6:

Correct!

> page offset

Quiz Score: **12.5** out of 90