CS350

– The Quiz –

What is the difference between preemptive and cooperative scheduling?

True or false?

Multi-level feedback queues cannot be used in conjunction with preemptive scheduling.

Name 2 page replacement policies that have the stack property.

Name 2 page replacement policies that do not have the stack property.

True or False?

In UNIX, a file can be opened in one of the following access modes (or a combination):

Read, Write, Execute

Name 2 similarities between sockets and named pipes that are not shared by ordinary files.

If the Nachos file header contains 10 direct and 20 single-indirect block pointers, what is the maximum size of a file?

A: 65,536 bytes
B: 76,400 bytes
C: 83,200 bytes
D: 83,208 bytes
E: 128,000 bytes
F: 128,016 bytes

A suitable protocol for reliable communication between two nodes in a network is:

A: HTTP

B: UDP

C: RSVP

D: SMTP

E: TCP

F: UDP

G: ASAP

Suppose the computer is switched off while the OS is deleting a file from the file system. List four possible outcomes of the delete operation.

With external chaining (e.g., FAT), accessing a single byte at position N in some large file requires

A: $\Theta(N)$
B: $\Theta(\log(N))$
C: $\Theta(N^2)$
D: $\Theta(\text{sqrt}(N))$
E: $\Theta(N * \log(N))$

disk operations.

True or False?

The maximum file size (in bytes) of a file in a file system with block size 4KB and triple indirection is larger than the number of neurons in the human brain.

When sorting an array that is too large to fit into RAM, which of the following algorithms is the best?

A: Heapsort
B: Bubblesort
C: Mergesort
D: Quicksort

What does the term "fragmentation" refer to when used in the context of file systems?

Is this internal or external fragmentation?

True or False?

Scheduling policies whose name starts with an "S" and ends with an "F" are usually starvation-free.

True or False?

Scheduling policies whose name starts with an "F" and ends with an "S" are usually starvation-free.

How is the Java programming language similar to a file system allowing cyclic hard links?

Two processes can communicate by mapping the same file into their respective address space.

What is the disadvantage of shared file mappings compared to shared memory segments?

Suppose a process creates a bunch of child processes by using fork. None of the children calls exec.

Name three resources that the parent shares with its children.

True or False?

A micro-kernel is especially suited for use in embedded systems, because it is so small.

What are the three main components in hard drive latency?

What is the connection between asynchronous page cleaning and direct memory access (DMA).
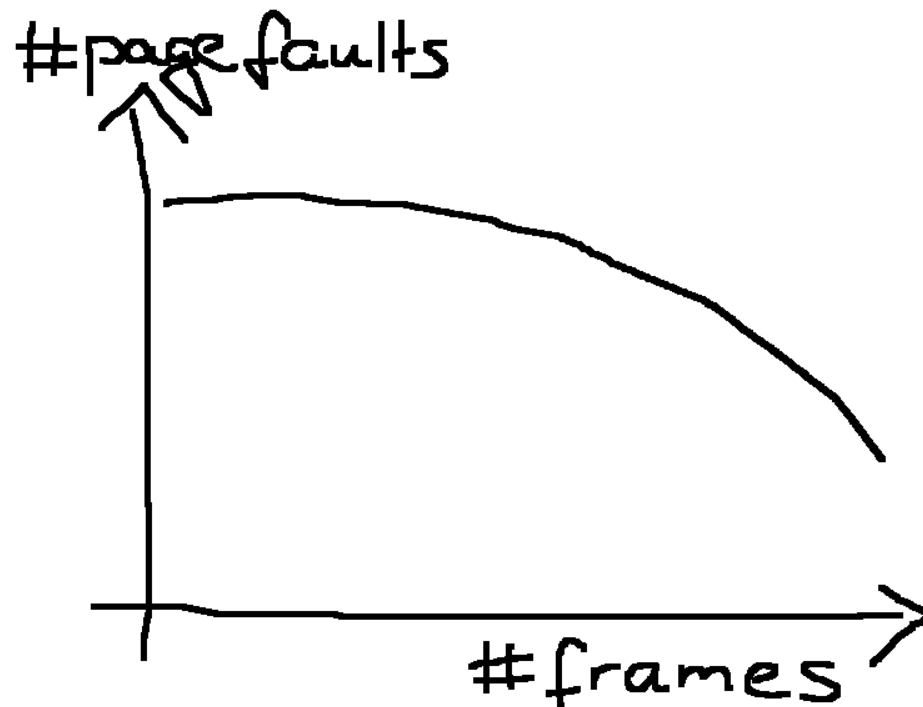
Despite its name, RAM cannot always be considered a true random access storage medium. What two common techniques make sequential memory access faster than random access?

What does it mean that the TLB is a "fully associative" cache?

True or False?

Referential integrity is a property of soft links, but not of hard links.

Assuming that LRU is used as the page replacement policy, is it possible to write a program that has the following page fault characteristic?

Who is going on vacation as soon as this class is over?