CISC 3320 Final Review Sheet

The final is open notes like the midterm – you are allowed to bring one sheet of notes in letter-size with double-side. The format will include True-or-False and multiple-choice (50%), as well as short questions and answers (50%). The scope will be cumulative, but majority of questions (80%) will be drawn from the second half of the semester (chapters 7-11, 13, 18).

Please note that this list is not meant to be exhaustive due to the nature of T/F and multiple-choice questions, but it should cover the vast majority of topics to be tested.

Ch1-6 (Short Q/As only)

Interpreted vs compiled languages; OS structures and their properties; process exit status; models of interprocess communications and their relative advantages; what are parallelism and concurrency; what are data parallelism and task parallelism; progress vs bounded-waiting in CS solutions

Ch7n8

Readers-writers problem; implementation of bounded-buffer problem; mutex vs semaphore; POSIX's synchronization API; conditions for deadlock and relation to the resource allocation graph; deadlock handling methods

Ch9

Logical vs physical address; time of address binding; memory protection; frames; shared pages; swapping; page table structure; TLB; measures for reducing page table size; sequence of page fault handling; page size

Ch10

Virtual memory and its key techniques; demand paging implementation and its performance; copy-on-write; Common page replacement algorithms; thrashing, its problems and indicator

Ch11

Disk's transfer rate, seek time and latency; HDD vs NVM; forms of NVM; unique properties of NVM; RAM drives; error detection vs correction; translation of logical block # to physical block #; disk scheduling algorithms; swap-space in Linux

Ch13

Common file attributes; directory structure; common file operations vs directory operations; concept of open file tables; file locking properties; access modes; disk configuration in a volume; concept of special-purpose file systems; Why file systems allow links; looping in directory; benefit of memory-mapped file

Ch18

Nature of virtual machines; function, components and types of VMMs; different modes VMM must manage; benefit of virtualization; VWware workstation and JVM