

CECS 326-01 Chapter Exam 1 Study Guide

Exam 1 is scheduled on 9/7/2021. Exam questions are mostly objective that include multiple choice, and true or false. The exam covers Chapter 1: Overview. It is important to understand, for each of the following terms, what it is, what does it do, what is it for, how is it relevant in a computer system, and how is it relevant to our use of the computer.

- Components in a typical computer: users, application programs, operating system, computer hardware
- Bootstrap program
- Computer system organization: CPU, memory, peripheral devices, device controllers, DMA
- CPU: instruction execution cycle, control data movement between main memory and local buffers in device controllers
- Device controller: control data movement between device and local buffer of controller
- Storage hierarchy, performance characteristics of various levels of storage (registers, cache memory, main memory, solid-state disk, magnetic disk), storage units (bit, byte, word, block, KB, MB, GB, TB, PB)
- Computer system architecture: single-processor system, multiprocessor system, clustered system
- Interrupt: hardware and software, interrupt vector, interrupt service routines (aka interrupt handlers), what happens when interrupt occurs
- System calls
- Mode of operations: user mode, kernel mode, and their transition
- Timer, timer interrupt, time slice
- Major components in OS for resource management, what each does, and their primary activities: process management, memory management, file system management, mass storage management, I/O system management
- Commonly used data structures in kernel