

CSCE 312: Computer Organization Fall 2021

Exam 1 review

This is a list of topics that may be included in Exam 1. **This list is not exhaustive and is only intended to help you review.**

Instructions:

1. This is an open book exam
2. The exam is online
3. Make sure to prepare your computer accordingly

Preparing for the exam:

- Study examples and activities. Make sure you understand every example and the in-class activities.
- Review your quizzes
- Study the lab problems. Make sure you understand the lab problems and your solutions to the problems.

A Tour of Computer Systems

Components of a computer system

Memory storage devices

Processor: execution flow

The compilation system: Preprocessor, Compiler, Assembler, Linker, Loader

Memory hierarchy

Digital Logic Design (Combinational)

Bitwise vs logical operators

Truth tables

Bit shifting

Boolean expression minimization using K-maps

Full-adder, multiplexer, demultiplexer, decoder etc.

Digital Logic Design (Sequential)

Storage Elements

DFF vs. register

Synchronous vs Asynchronous inputs

Examples: 1-bit register, 8-bit register

Finite state machines

Representing and Manipulating Data *

Analog vs. Digital systems

Number systems

Conversions

Signed vs unsigned integers

One's complement

Two's complement