The topic for the next 3055 section A weekly quiz is I/O devices and busses.

Here are some sample questions from an old test:

3. *(5%)* What is the average time to read or write a sector on a 15,000RPM disk drive with an average seek time of 8ms, a transfer rate of 10.0 MB/sec, and 1024-byte sectors. Assume the disk is idle and there is a 0.25 ms controller overhead per sector.

$$8 \text{ ms} + \frac{0.5 \text{ RPM}}{1500 \text{ RPM}/600 \text{ RPM}/sec} + \frac{1024 \text{ bytes}}{10 \text{ MB}/sec} + .25 \text{ MS} =$$

$$8 + 2 + .1 + .25 = 10.35 \text{ ms}$$

Average R/W time per sector = __10.35__ (in ms)

4. *(5%)* Which type of bus (synchronous or asynchronous) would work best in a system where the bus length and loading did not vary? (explain).

synchronous – since loading and length are fixed it would be faster

5. *(5%)* The new USB 2.0 standard is a 1-bit serial bus with a 480Mhz clock. What is that bandwidth in megabytes per second?

$$\frac{480 \text{ MHz}}{8 \text{ bits}/\text{byte}}$$

Bandwidth = __60__ (in Mbytes/second)