CSC110AB Test1

Some notes for the first test –

The test will be closed book, closed notes. However, you can prepare a "study sheet" to use during the test. It should be a single 8.5x11 sheet of paper with as much on it as you can fit. Each one must be individually prepared – do not photocopy or use the same notes printout as someone else. I will briefly look them over during the test to make sure that they are individually prepared.

What will be covered –

Variables
- Primitive Types (int, double, long, byte, short, float, char), which holds more
- What is an illegal variable?
- They are case sensitive
- Strings (how to define and use)
- Typecasting – how and when
- Initializing variables
- Constants
- Scope – where are variables visible?

Java programming
- What files are created – start with a .java, create a .class
- How files have to be named (same as the class)
- Structure of programs – class, then main inside it
- Possible errors – the difference between syntax, logic, and run-time errors ("exceptions")
- Defining a Scanner and telling it to nextInt(), nextDouble(), next(), or nextLine().
- import statements – when did we have to use them?

Software engineering life cycle
- What are the 5 phases?
- Which is most important?

Operators
- when and how to use
- Arithmetic → +, -, *, /, %
- Relational → ==, !=, >, <, >=, <=
- Logical → && , ||, !
- Concatenation → + (how does Java know when it means concatenation?)
- Using ++ and -- (know the difference between x++ and ++x)

Control flow
- if statements
- if-else statements
- Nested if statements

Loops

- while loops – how to set up and use
- for loops – how to set up and use – know what each part does
- do-while – what is the difference between it and the while
- When to use each kind of loop
- Counters – how to use
- Accumulators – how to use
- What will make each type of loop never execute? Run infinitely?

Other stuff

- Escape characters – putting in a newline, tab, \, or "
- A few String methods: charAt, length

"Tricky" things to know for this test

- int x = 4;
  int y = 7;
  System.out.println(y/x);
  System.out.println((double)y/x);
- int x = 4;
  int y = 7;
  System.out.println(x++);
  System.out.println(++y);
- System.out.println(2 + 3 * 4);
- System.out.println("this won't add: " + 3 + 6);

What will not be on the test –

- Object-Oriented Programming – classes, methods, constructors
- arrays
- Random number generator
- How to set up the NumberFormat or CurrencyFormat
- Switch (unless you want to use it)
- Break and continue statements
- The tricky part of using Scanner where you have to "flush" the ENTER from the input stream.

Format of the test

The test will have a working program listed. You should be able to identify parts (like comments, constant declarations, etc.) and also trace through it by hand. You will also have to write programs or parts of programs.

If you have done the first 3 programs and the minilabs and understand what you have done, then that is a good start. I will try not to be "tricky" (except for the examples above), but just test use of the basic things we have covered.