

COSC 251 Study Guide
Exam #1
Spring 2008

- 1.) Define procedural language, functional language and imperative language.
- 2.) Name the 8 basic structures of a programming language.
- 3.) What does it mean if a language is weakly typed?
- 4.) Give the basic format for a function in lambda-calculus. Define a lambda calculus function for add 3 and 2.
- 5.) What is the first major procedural language and who created it?
- 6.) Give two major properties of a procedural language.
- 7.) What is the basis of functional languages and who developed it?
- 8.) What is the first major functional language and who created it?
- 9.) Give an example of a declarative language.
- 10.) Give the code for a recursive factorial in OZ.
- 11.) Who was the primarily person responsible for C?
- 12.) Why was C named C?
- 13.) What is K&R C?
- 14.) What is the difference between a long and an int?
- 15.) Name three properties that C has due to C++.
- 16.) What is the standard main signature in C?
- 17.) Give an example of an if statement.
- 18.) Define what each of these operators are: *, &, ++
- 19.) Given the following code, what will be printed out and what will the memory diagram look like:

```
int *a = NULL;  
a = new int;
```

```
a = 25;  
printf("%i", *a);
```

- 20.) Give the code to create a Fibonacci sequence recursively. Your function should take in an integer that represents where we should stop the sequence and your output should be every number in the Fibonacci sequence to that point.
- 21.) Create a class circle. Be sure to include all assessors and mutators necessary. All of your functions must make sense and be complete. You will need to create both the header file information and the class definition file information.