THE UNIVERSITY OF ZAMBIA
School of Natural Sciences
Department of Computer Studies

2013 FIRST TERM
TEST ONE

COMPUTER PROGRAMMING
CSC 2000

Date: 19th DECEMBER 2013
Time: 14:00hrs – 16:00hrs
Duration: 2 Hour

Instructions

1. This test has three sections
2. Answer all questions in Sections A, B and C
3. Section A contains multiple choice question
4. Question B and C contains open ended questions

Philippians 4:13

"I am able to do all things through Christ who strengthens me!"

SECTION A [20 Marks]

There are 10 multiple choice questions in this section, answer all questions.

1. Which one below is not a java keyword? [2]
   A. default
   B. If
   C. for
   D. public

2. Which one below is not a java identifier? [2]
   A. SHIP_
   B. Key$Board
   C. Name2
   D. last-Number

3. Which of the following operator(s) is a java arithmetic operator? [2]
   A. +
   B. =
   C. >
   D. <

4. Mr. X wants to computerize the operations at his shop. He wants the software to be capable of accepting prices of goods and holds them accurately and correctly. Which data type(s) would you recommend to hold prices of goods accurately? [2]
   A. long
   B. String
   C. float
   D. double

5. A private instance variable or an attribute is visible in all the methods of the class. True or false? [2]
   A. True
   B. False
   C. It is only visible if it is public or default
   D. It is only visible if it is not hidden by local variables declared inside the methods

6. What java keyword creates an object? [2]
   A. The name of the class
   B. The word new
   C. The equal sign
   D. The main method

7. What effect(s) does the static keyword has on an instance variable? [2]
   A. It makes a variable been shared by all objects of the class
   B. It makes a variable hidden in the object
   C. It has no effect on the variable
   D. It makes a variable been called using a class name ✔

8. Analyze the piece of java code below;
   final int a = 3;
   a = 4;
   What is the value of a? [2]
   A. 3
   B. 4
   C. Compilation error
   D. Logic error

9. What is a java reference data type? [2]
   A. A data type built into java
   B. A class name
   C. An attribute
   D. int

10. Analyze the code below;
    int a = 3;.
    long b = a;
    What is the value of b?
    A. 3
    B. 0
    C. Compilation error
    D. 3.0

SECTION B [20 Marks]

Answer all questions in this section.

1. Analyze the java code given below;

```java
for(int i=0; i <= 10 i++){
    if(i == 10){
        continue;
    }
    System.out.print( i );
```

   a) What syntax errors will the above code generate when compiled? [2]
   b) Write the correct code.[2]
   c) Assuming you have corrected the error(s), what will be the output? [5]

2. Analyze the piece of code below;

```java
int[] numbers = {2,3,6,7};
numbers[0]=7;
numbers[1]=6;
numbers[3]=3;
numbers[3]=2;

for(int i=0; i<numbers.length; i++){
    break;
    System.out.println(numbers[i]);
}
```

   a) What errors will the above code generate? [2]
   b) What will be the output of the above code? [3]

3. What is the difference between a local variable and an instance variable? [2]

4. List down ten (10) java keywords and explain what they mean to java. [10]

   boolean   String
                   Static
   char
   long   if
   int
   double
   short
   float

SECTION C [60 Marks]

Answer the question below.

1. Kabundi High School wants to computerize their grading system. You have been hired to develop an application that will help them achieve their goal. The school wants your application to do the following tasks;

   ### Task one
   They want your application to allow the user to enter seventy (70) grades. Kabundi high school allows grades to be in decimal. E.g. a student can have 55.7%

   ### Task two
   They want your application to separate failed pupils from passed pupils. The pass mark at kabundi high school is 40%.

   ### Task three
   Your application should produce the following summary. It should print how many pupils have failed, the average mark of the failed pupils and display their grades. Your application should also print how many pupils have passed, the average mark of the passed pupils and display their grades.

   Write a java application to implement the three (3) tasks given above.

Hint: You can use arrays to help you design your logic!