



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

SCO 103 OBJECT ORIENTED PROGRAMMING I

DATE: WEDNESDAY, 11TH APRIL 2012

TIME: 2.00P.M – 4.00P.M

INSTRUCTIONS: Answer question ONE and any other TWO.

QUESTION ONE (30 marks)

(a) Explain what you understand by object oriented programming.

(2 marks)

(b) Java's bytecodes are portable. Explain.

(2 marks)

(c) Assuming that $x = 2$ and $y = 3$, what does the following statement display:

System.out.printf("%d = %d\n", (x + y), (y + x));

(4 marks)

(d) Given the following code extract.

```
public static void main (String args[ ]){  
    |  
    |  
}
```

What is the significance of the following words?

- (i) public
- (ii) static
- (iii) void
- (iv) main
- (v) args[]

(5 marks)

(e) With the use of one (1) example for each, explain the following three main principals/paradigms of object oriented programming. Also provide an advantage of each.

i. Encapsulation

(4 marks)

ii. Inheritance

(4 marks)

iii. Polymorphism

(4 marks)

(f) Describe the process of handling exception in Java.

(5 marks)

Question Two

(a) Distinguish between the following access specifies in Java:

- i. Protected
- ii. Private
- iii. Public
- iv. No keyword coded

(8 marks)

(b) Comment on the result of the following programme:

(3 marks)

```
public class Test
{
    public static void main(String [] args)
    {
        int x = 3;
        int y = 1;
        if (x = y)
            System.out.println ("Not equal");
        else
            System.out.println("Equal");
    }
}
```

(c) Explain the role of the following packages in Java programming language.

- (i) java.io
- (ii) java.awt
- (iii) java. applet
- (iv) javax.swing

(4marks)

Question Three

(a) Evaluate the following statement: **(6 marks)**

$$X=2\%2+2*2-2/3$$

(b) Write a Java program that creates a two dimensional array with four rows and five columns and fills it with the sum of the row and column indexes. **(9 marks)**

Question four

(a) Write a simple Java program with one class that can be used to display all the integers between 1 and 100 that are divisible by both 3 and 5. **(8 marks)**

(b) Differentiate between primitive and non-primitive data types. **(4 marks)**

(c) Give three primitive data types used in Java. **(3 marks)**

Question five

A certain college uses the following grading system to award grades to their students.

Mark= 75-100 A

Mark= 60-74 B

Mark=50-59 C

Less than 50 Fail

Write an appropriate object oriented program using Java that can be used to read in a mark and award the grade.

(15 marks)

