

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2014/2015

**SECOND YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

**ICS 2201 : OBJECT ORIENTED PROGRAMMING II IN JAVA**

**DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND**

**ANY OTHER TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Define the following terms: [5 marks]

1. Program.
2. Polymorphism.
3. Inheritance.
4. Encapsulation.
5. Find reserved word.

(b) Java being object-oriented, it has a number of advantages. Give four of them. [4 marks]

(c) Give an example of the following: [5 marks]

1. Relational operator.
2. Primitive data type.
3. Logical operator.
4. Conditional statement.
5. Arithmetic operator.

(d) What is a compiler? [1 mark]

(e) Which java reserved word is used to declare constant variables?

[1 mark]

(f) Java programming language defines some kinds of variables. Briefly name and explain. [8 marks]

(g) Consider the following loop:

for (incount=0; count<7; count++)

{

System.out.println(2\*count+1);

1. List the four parts of the loop (initialization, loop test, loop update, loop body) in the above code. [4 marks]
2. What is printed to the console during execution of above code?

[2 marks]

**QUESTION TWO (20 MARKS)**

(a) The switch statement observes certain rules. Explain them.

[4 marks]

(b) Write a simple java program to output temperature in Celsius. Given Fahrenheit temperature = 100 and

Celsius = \* (Fahrenheit – 32) [6 marks]

(c) Write a simple java program to output simple interest. Given,

SI =  [6 marks]

(d) Consider the following code fragment:

int sum = 0;

int i = 0;

while (i<5)

{

Sum t = i;

i ++;

}

System.out.print(sum;

Replace while loop in the fragment above with a for loop that prints the same value of sum variable. [4 marks]

**QUESTION THREE (20 MARKS)**

(a) Complete the following class called MyClass. This class consists of a single main method that asks the user to input an integer. The main method tells whether the number is even or odd. [6 marks]

(b) If the variable number is not equal to 7, display “The variable number is not equal to 7”. [2 marks]

(c) Print “This is a Java program” on two lines in the command window. The first line should end with Java. [2 marks]

(d) Write a complete Java program that calculates and prints the product of three integers. [10 marks]

**QUESTION FOUR (20 MARKS)**

(a) Write four different Java statements that each add 1 to integer variable x. [4 marks]

(b) What is an access modifier? Discuss the various types of access modifiers. [12 marks]

(c) Give at least four of the commonly used functional packages of the java standard library. [4 marks]

**QUESTION FIVE (20 MARKS)**

(a) What is a variable? [1 mark]

(b) Use an example to show how comments are implemented in java.

[2 marks]

(c) Give at least two situations that may require you to use comments in programming. [2 marks]

(d) ---------------

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char g;

int marks;

if (marks>69)

g = ‘A’;

else if (if(marks>59)

g = ‘B’;

else if (if(marks>49)

g = ‘C’;

else if (marks>39)

g = ‘D’;

else

g = ‘E’;

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Show how the same piece of program can be implemented using the switch statement. [7 marks]

(e) Explain the difference between simple if and if else statements.

[2 marks]

(f) Explain the different forms of inheritance supported by java.

[6 marks]