

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

**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2014/2015**

YEAR 2 SEMESTER I EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY/BACHELOR OF BUSINESS INFORMATION TECHNOLOGY/BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE

**ICS 2104: OBJECT ORIENTED PROGRAMMING I**

**DATE: August 2015 TIME: 2 HOURS**

**INSTRUCTIONS:**

**Answer Question One and Any Other Two Questions**

**QUESTION ONE (30 MARKS)**

1. Name two major programming languages that support OOP. (2marks)
2. A central structure is a primary concept in most high level programming languages. List three examples of control structures used in programming and show how each can be used in a program by use of examples (6marks)
3. Explain any three major object oriented concepts (6marks)
4. Explain the purpose/implication of the following statements in C++
5. #include <10stream>
6. #include <string? (4marks)
7. State the benefits of using an object oriented language as opposed to other models of programming (4marks)
8. State what you understand by the term operators as used in C++ and give two categories of operators used in programming. (6marks)

**QUESTION TWO (20 MARKS)**

1. Write a C++ OOP code that outputs the word “Hello world”. (5marks)
2. Program comments are explanatory statements that can be included in a C++ code that helps in documentary the source code
3. Give an example of a C++ single line comment
4. Give an example of a C++ multi-line comment (4marks)
5. In programming, a datatype is a classification identifying one of various types of data, explain any five types of data types used in C++ (5marks)
6. State the rules used when naming variable identifiers in C++ (6marks)

**QUESTION THREE (20 MARKS)**

1. Below is a simple C++ code, explain its outcome

#include<10stream>

Using namespace std;

Int foo[]={16, 2, 77, 40, 12071}:

Int n, result=0;

Int main ()

{

For(n=0; n<5; n++)

{

Result +=foo[n];

}

Cout<<result;

Return 0;

} (4marks)

1. There are two approaches to defining methods in C++, using example codes and scenario of your own choice, demonstrate the two approaches. (6marks)
2. C++ provides a data structure, the array, which stores a fixed size sequential collection of elements of same type, explain by use of example how implement;
3. One dimension array
4. Two dimension array (6marks)
5. List any four areas where C++ is applicable (4marks)

**QUESTION FOUR (20 MARKS)**

1. Explain with aid of diagram example of the following categories of inheritance
2. Single inheritance
3. Multiple inheritance
4. Hierachical inheritance (6marks)
5. Write a C++ code that reads the score as an integer from the keyboard; and determines the grade using the following criteria (8marks)

SCORE GRADE

FROM 70 to 100 A

FROM 60 to 69 B

FROM 50 to 59 C

FROM 40 to 49 D

Below 40 E

1. Describe any three types of errors that can be encountered in programing (6marks)