TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:

DICT Y2S1

ECS 2201: OBJECT ORIENTED PROGRAMMING

END OF SEMESTER EXAMINATION 1

SERIES:AUGUST2019

TIME:2HOURS

DATE: Pick DateApr2019

Instructions to Candidates
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of **FIVE** questions. Attemptany THREE questions.
Do not write on the question paper.

QUESTION ONE [20 Marks]

a. List four variable types used in C++ programming.   [4 marks]

b. Write a C++ program that declares , initializes and computes the sum of three variables of integer.[6 marks]

c. Define the following terms.

   i.   Object
  ii.   Classs
 iii.   Polymorphism
  iv.   Inheritance
   v.   Data Abstraction.   [10 marks]

QUESTION 2

a. Provide the syntax of a C ++ Class. [4 marks]

b. Declare a class called Box with two properties and two methods stating the access specifier foe each member. [6 marks]

c. Explain and demonstrate the use of the scope resolution operator (::) with a class method. [4 marks]

d. Demonstrate using code how the class Box can be instantiated and how the object can access class members. [6 marks]

QUESTION 3

a. Explain using code how encapsulation is achieved in Object Oriented programming. [4 marks]

b. Explain using code how data abstraction is achieved in Object Oriented programming. [4 marks]

c. Describe three types of access specifies used in Object Oriented Programming. [6 marks]

d. Differentiate between method overloading and method overriding as used OOP. [4 marks]

e. State how method overloading and method overriding can be achieved. [2 marks]

QUESTION 4

a. Explain the work of a class constructor. [2 marks]
b. Differentiate between a default and a parametrized constructor. [4 marks]
c. Outline three properties of a constructor that makes it to be a special method. [6 marks]
d. Write a C++ program that demonstrates the use of a Class constructor. [8 marks]

QUESTION 5

a. Explain what you understand by inheritance as used in Object oriented programing. [2 marks]
b. Differentiate between single inheritance and multiple inheritance. Give the syntax for each. [6 marks]
c. Write a C++ program that demonstrates the use of inheritance. [8 marks]
d. State four advantages brought about by inheritance in OOP [4 marks]