TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MATHS AND PHYSICS

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN MATHEMATICS & COMPUTER SCIENCE

BACHELOR OF SCIENCE IN STATISTICS & COMPUTER SCIENCE

EIT 4153: **OBJECT ORIENTED PROGRAMMING I**

END OF SEMESTER EXAMINATION

SERIES:APRIL2016

TIME:2HOURS

DATE:Pick DateSelect Month2016

Instructions to Candidates
You should have the following for this examination
-*Answer Booklet, examination pass and student ID*
This paper consists of **FIVE** questions. Attemptquestion ONE (Compulsory) and any other TWO questions.
Do not write on the question paper.

Question 1

a) Briefly explain the following terms as used in Object Oriented Programming
   i. Object
   ii. Class

   [4marks]

b) Using an appropriate example explain the following concepts as used in Object Oriented Programming
   i. Polymorphism
   ii. Inheritance

   [6marks]

c) Briefly state the two forms of putting comments in C++ programming

   [4marks]

d) Write a short statement in C++ to distinguish the following concepts as used in C++
   i. Declaration
   ii. Initialization

iii. Assignment

[6marks]

e) Distinguish between the following types of operators as used C++ programming
   i. Arithmetic operators and increment/decrement operators
   ii. Logical and relational operators

[4marks]

f) State any THREE advantages of Object Oriented Programming

[6marks]

Question 2

a) Write an Object Oriented program that :
   i. Has three integer variables(a,b,c)
   ii. Initializes them to 10,20, and 30 respectively
   iii. Finds the average of the 3 numbers
   iv. Stores the average in the first variable(a)

   Note: your program must contain class declaration , functions definitions and a constructor

[10marks]

b) Briefly explain the meaning of the following objects in C++
   i. Cin
   ii. Cout
   iii. Private
   iv. Public
   v. Protected

[10marks]

Question 3

a) Write the output of the following statements
   i. Cout<<"hellow"<<"world"<<"again";
   ii. Cout<<"hellow"<<"world"<<"again\n\n";
   iii. Cout<<a<<b<<c;
   iv. Cout<<a<<""<<b<<""<<c;
   v. Cout<<"*\n**\n***\n****\n*****\n";

[10marks]

b) Write an Object Oriented program that inputs three different integers and does the following:
   i. Displays the 3 integers
   ii. Displays the sum
   iii. Displays the average
   iv. Displays the product

   Note: your program must contain class declaration, functions definitions and a constructor

[10marks]

Question 4

a) Write the names and meaning of the following symbols in C++
   i. ::

ii. >>

iii. &&

iv. <<

v. ==

[10marks]

b) Write an Object Oriented program that:

     i. Accepts a number between 1 and 12 as input

     ii. Displays the name of the Month corresponding to the number

Note: your program must contain class declaration, functions definitions and a constructor

[10marks]

Question 5

Write an Object Oriented program that :

     i. Has a class called rectangle whose data members are width and height, method members are setsize() and calculatearea()

     ii. Accepts height and width of a rectangle as input

     iii. Displays the area of the rectangle

[20marks]