



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: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date Select Month 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question 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]