MACHAKOS UNIVERSITY

University Examinations for 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 103: OBJECT ORIENTED PROGRAMMING 1

DATE: 7/5/2019 **TIME: 8.30-10.30 AM**

INSTRUCTIONS

Answer **question ONE and any other TWO questions.**

QUESTION ONE (30 MARKS) (COMPULSORY)

a) Explain what is meant by the following terms:

i. Class;

ii. Object ;

iii. Inheritance;

iv. Polymorphism;

v. Encapsulation; (15 marks)

b) Name and explain the five major features of object- based programming languages. (15 marks)

QUESTION TWO (20 MARKS)

a) Outline the structure of C++ and provide a code fragment to support your answer (10 marks)

b) Define the following terms as used in in C++ Language.

i. Keyword

ii. Constant

iii. Identifier

iv. Variable

v. Token (10 marks)

QUESTION THREE (20 MARKS)

a) Define an *array* as used in object oriented programming? (2 marks)

b) Name and explain two applications of C++ programming language (4 marks)

c) Write a code program to calculate student average mark in C++ language (10 marks)

d) Explain two data types in C++ and show how they are declared (4 marks)

QUESTION FOUR (20 MARKS)

a) Outline two rules that must be considered when declaring a member function outside the class (4 marks)

b) Write a code fragment using "if statement" to show how control occurs in C++ language (6 marks)

c) Explain the meaning of single inheritance and give a code fragment to support your answer. (10 marks)

QUESTION FIVE (20 MARKS)

a) Differentiate between multiple inheritance and hierarchical inheritance (10 marks)

b) Explain the meaning and the work of a constructor in C++ language (6 marks)

c) Write a program to demonstrate the execution of constructor and destructors. (4 marks)