

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

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2014/2015

**YEAR I SEMESTER I EXAMINATION FOR THE DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY**

**BIT 2104: INTRODUCTION TO PROGRAMMING AND ALGORITHMS**

**DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND**

**ANY OTHER TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Describe the following steps in writing a program:

i) Write a program

ii) Compile a program

iii) Debug the program (10 marks)

(b) Using specific examples, distinguish between:

i) High level language

ii) Machine language (10 marks)

(c) Give three differences between traditional languages C/C+++ and

java (5 marks)

(d) Explain the following rates of a programming language.

i) Syntax

ii) Semantics (5 marks)

**QUESTION TWO (20 MARKS)**

(a) Using java language example describe the following:

i) A class

ii) Objects

iii) Installation

iv) Constructors (10 marks)

(b) i) Describe a padcage in programming. (5 marks)

ii) Explain the steps in using a java package. (5 marks)

**QUESTION THREE (20 MARKS)**

(a) Describe the following data types:

i) Primitive data types

ii) Strings

iii) Boolean (10 marks)

(b) Distinguish between single dimension and multi dimension and arrays be sure to use a diagram. (10 marks)

**QUESTION FOUR (20 MARKS)**

(a) Distinguish between methods of overloading and method of overiding in java. (10 marks)

(b) Using examples explain the following programs concepts:

i) Parameter passing

ii) Functions

iii) Static method (10 marks)

**QUESTION FIVE (20 MARKS)**

(a) Explain inheritance as used in programming. (3 marks)

(b) Describe five advantages of inheritance. (10 marks)

(c) Explain the following inheritance terms:

i) Public

ii) Private

iii) Protected (7 marks)