

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE (APPLIED COMPUTER SCIENCE)**

ACMP 122: PROGRAMMING PRINCIPLES 1 (JAVA)

STREAMS: BSC

TIME: 2 HOURS

DAY/DATE: TUESDAY 12/7/2016

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- **Answer QUESTION 1 and any other TWO QUESTIONS from section B.**
- **This is a CLOSED BOOK EXAM, No reference materials allowed.**
- **No use of mobile phones, no electronic calculators.**
- **Write your answers legibly and use your time wisely.**

SECTION A: COMPULSORY

QUESTION ONE: 30 MARKS

- (a) Explain the meaning and the use of the following object oriented programming concepts:
- (i) Object [2 marks]
 - (ii) Class [2 marks]
- (b) With use of sketches to illustrate your answer, explain the concept of inheritance as used in object oriented programming. [6 marks]
- (c) Make use of class examples to show the difference between local and global variables. [4 marks]
- (d) Explain the difference between a constructor and a method. [4 marks]
- (e) What is an infinite loop? [2 marks]
- (f) What is JDBC? Discuss different types of JDBC Drivers available in Java. [5 marks]
- (g) Explain the life cycle of an applet. [5 marks]

SECTION B: CHOOSE ONLY TWO QUESTIONS

QUESTION TWO (20 MARKS)

- (a) With use of illustrations, describe the concept of polymorphism. [10 marks]
- (b) What do you mean by exception handling? Explain the different use of keywords used for exception handling by taking suitable examples. [10 marks]

QUESTION THREE (20 MARKS)

Discuss what you understand by object oriented programming and the common characteristics found in object oriented programming. Use code samples to elaborate your answer. Your discussion should be based on the following:

- (i) Inheritance [5 marks]
- (ii) Polymorphism [5 marks]
- (iii) Encapsulation [5 marks]
- (iv) Instances [5 marks]

QUESTION FOUR (20 MARKS)

- (a) Define constructor and hence write a program to demonstrate the use of a constructor. [10 marks]
- (b) Discuss different control statements available in java. [5 marks]
- (c) Discuss the characteristics of JAVA in detail. [5 marks]

QUESTION FIVE (20 MARKS)

- (a) What is an access modifier? Discuss the various types of access modifiers. [8 marks]
- (b) An array is an example of data structures used with Java programming. Write a sample java program that demonstrate the use of array objects. [12 marks]