



**TECHNICAL UNIVERSITY OF MOMBASA**

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**INSTITUTE OF COMPUTING AND INFORMATICS  
DEPARTMENT OF BUSINESS ADMINISTRATION  
UNIVERSITY EXAMINATION FOR:  
BBIT Y1S2  
EIT 4102: FUNDAMENTALS OF PROGRAMMING  
END OF SEMESTER EXAMINATION  
SERIES: APRIL 2016  
TIME: 2 HOURS  
DATE: Pick Date May 2016**

**Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. Attempt Choose instruction.

**Do not write on the question paper.**

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**Question ONE**

a) Provide definitions for the following terms/phrase.

- i. System program
- ii. Application program
- iii. Programming
- iv. Algorithm [4 marks]

b) Identify three programming constructs [3 marks]

c) Write a C program to check if a number is odd or even and print the number [5 marks]

d) Name and describe four data types in C [6 marks]

e) Outline the computer problem solving steps [6 marks]

f) Write a C Program that prompts a user for a radius and calculates area and circumference of circle [6 marks]

## **Question TWO**

- a) What is a storage class? Outline four storage classes used in C [5 marks]
- b) Write a C program to perform basic arithmetic operations which are addition, subtraction, multiplication and division of two numbers. Numbers are assumed to be integers and will be entered by the user. [5 marks]
- c) Write a C program to print a pyramid pattern as shown [10 marks]

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## **Question THREE**

- a) List four types of operators in C [4 marks]
- b) Identify the key elements of a program development environment (PDE) [4 marks]
- c) Write a program that stores a sentence entered by a user into a data file [6 marks]
- d) Write a C program that prompts a user for marks and prints A if mark is  $\geq 70$ , B if marks is  $\geq 60$  and  $\leq 69$ , C if mark is  $\geq 50$  and  $\leq 59$ , D if mark is  $\geq 40$  and  $\leq 49$  and F if mark is  $< 40$  [6 marks]

## **Question FOUR**

- a) Write an algorithm that reads in, displays and exchanges integer values of two variables [4 marks]
- b) Draw a flow chart and write the pseudo code for the algorithm in part a [8 marks]
- c) Implement the algorithm using C programming language. [12 marks]

## **Question FIVE**

- a) Describe three variable scopes in C [6 marks]
- b) Write a C program that illustrates the use of the variables in part a [6 marks]
- c) Write a C program that calculates the factorial of any positive number n. [8 marks]

