# KABARAK UNIVERSITY

## UNIVERSITY EXAMINATIONS

## SECOND SEMESTER, 2018 /2019 ACADEMIC YEAR

**EXAMINATION FOR THE BACHELOR OF BUSINESS MANAGEMENT INFORMATION TECHNOLOGY/BACHELOR OF INFORMATION TECHNOLOGY**

**COMP 112/COMP 111/INTE 113: FUNDAMENTALS OF PROGRAMING**

**STREAM: [Y1S2]** **TIME: 2.00-4.00P M**

**EXAMINATION SESSION: JAN-APRIL** **DATE: 5/04/2019**

---

**INSTRUCTIONS**

**(i) Answer Question ONE (compulsory) and ANY OTHER TWO questions**
**(ii) Do not write on the question paper**
**(iii)Show your working clearly**

**QUESTION ONE (30 MARKS)**

a) Define an algorithm? **(2marks)**

b) Perform the following

i. Define a token as used in computer programming **(2marks)**

ii. Briefly explain two types of tokens giving examples in each case **(4marks)**

c) Most programs come with user documentation. List three advantages of proper documentation in a program. **(2marks)**

d) Draw a flowchart that will accept as input from the user, an answer to the following question: Is it raining? If it is raining, tell the user to get an umbrella and also bring a jacket, otherwise tell the user it is sunny. **(4marks)**

e) Write an algorithm that will compute the sum and average of **n** values and display the sum and average. **(4marks)**

f) Outline the four types of errors found in Any programming language **(4marks)**

g) Discuss the two major types of programming languages; low level languages and high level languages giving examples.

**(4marks)**

h) Explain the difference between testing and debugging in the context of programming

**(4marks)**

## QUESTION TWO (20 MARKS)

a) Outline the three constructs used in MODULAR programming

**(3marks)**

b) Why is structured programming so enormous even today?

**(4marks)**

c) Draw a flowchart to compute the solution of $x^2+5$ for all values of x between 2 and 5.

**(5marks)**

d) Write an algorithm which a given number **A** *increased* 100 *times* if **A** is less than 100, otherwise **A** is *decreased* by the 100. Print this result

**(4marks)**

e) With the help of a simple example briefly discuss the conditional operator

**(4marks)**

## QUESTION THREE (20 MARKS)

a) Draw flowcharts for the following programs:

i. Program to help you discuss for loop as used in programming languages.

**(4marks)**

ii. Program to accept the radius of a circle and calculate its area.

**(4marks)**

b) Draw a flowchart to display the sum of 20 natural numbers starting from 20.

**(4marks)**

c) Enumerate on the constructs of structured programming and outline why C programming is widely used today

**(4marks)**

d) Write an algorithm to display the largest of three numbers entered.

**(4marks)**

## QUESTION FOUR (20MARKS)

a) Woodwork supermarket gives discount according to the combination of products you purchase as follows:

If you purchase goods worth Kshs. 4000 and above discount 10%, goods worth Kshs. 2500 and above discount 5% and otherwise 2%.

i. Write an algorithm to compute the discount a customer will receive based on the purchase she makes.

**(3marks)**

ii. Draw a flowchart for the above algorithm **(3marks)**

b) Write an algorithm that will accept two numbers and find their sum and difference. If the sum is more than sum than the difference, display the sum otherwise display the difference

**(4marks)**

f) Discuss the advantages of using a flow chart

**(4marks**)

g) Perform the following

i. Define object oriented programming (2marks)

ii. Explain briefly any two concepts of object oriented programming

**(4marks)**

**QUESTION FIVE (20MARKS)**

c) Define a program. **(2marks)**

d) Discuss any four guideline for drawing flowcharts **(4marks)**

e) Define a token and give an example. **(2marks)**

f) Discuss the if…else statement

**(4marks)**

e) Discuss the advantages of using a flow chart

**(4marks)**

f) State the difference between:

i. Testing and debugging **(2marks)**

ii. Syntax error and logic error **(2marks)**

**********