

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

## JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

**UNIVERSITY EXAMINATIONS 2017/2018**

**EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRONIC AND COMPUTER ENGINEERING**

**ICS 2102: INTRODUCTION TO COMPUTER PROGRAMMING**

**DATE: JANUARY 2018 TIME: 2 HOURS**

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE

a) The “/n” character does what operations (1 mark)

b) Explain the following (5 marks)

1) Algorithm

2) Pseudo code

3) Arithmetic operations

4) Syntax errors

5) Semantic errors

c) Discuss four properties of a good algorithm (4 marks)

d) What is a variable? Which symbol separates variable names? (3 marks)

1) &

2) ;(period)

3) ‘ (apostrophe)

4) ,(comad)

5) ;(semicolon)

e) What is a keyword? State two keywords of C program (3 marks)

f) Write the syntax if the if-else statement (2 marks)

g) State and explain three logical operators (6 marks)

h) What is the purpose of break statement (2 marks)

i) What will be the output of the following program (4 marks)

Void main (){

int a=10;

Print f ( “”%d”, aJ;

{

int a=20;

Print f( “%d”, a J;

}

Print f ☹%d”, aJ;

}

QUESTION TWO

a) Explain the if-else statement execution with its flowchart (5 marks)

b) For the following program fragment, derive the output generated by print f statement (3 marks)

int val 2 =255;

float num=79.54123;

print f “%4d, %x, %7.3, %8.3e”, val 2, val2,

num, num;

c) Explain the concept of array of pointers with example (6 marks)

d) Explain the representation of two-dimensional array with example

(6 marks)

QUESTION THREE

a) Design an algorithm to add two numbers and display the results.

b) Describe the process of dedaring a function in C program.

c) Find out errors in the following program component and justify the same (5 marks)

float i ;

int P=0;

for (i=0; i=10; i+=2)

{

P=i\*2;

Printf ( “%d”, I, P);

d) Explain with example the array of structures (6 marks)

QUESTION FOUR

a) Write a program to find whether the given year is a leap or not (6 marks)

b) Explain a function of two parameters num 1 and num 2 and return the maximum value (4 marks)

c) Explain the concept pointer’s arithmetic operations (4 marks)

d) Explain the meaning of the following statements with reference to pointers (6 marks)

1) int\*ptr, m=8;

2) \*ptr =m;

3) ptr=$m;