MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
ACADEMIC YEAR 2018/2019
FIRST YEAR FIRST SEMESTER

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION SCIENCES

COURSE CODE: INS 1204
COURSE TITLE: PROCEDURAL PROGRAMMING

DATE: 10TH DECEMBER, 2018 **TIME: 1100 - 1300 HRS**

INSTRUCTIONS: SECTION A IS COMPULSORY ATTEMPT TWO QUESTIONS IN SECTION B

QUESTION ONE **(30 MARKS)**

A) State the meaning of the following escape sequences (5marks)

i. \b

ii. \n

iii. \?

iv. \t

v. \v

B) Write a program in c language that counts the input lines (4marks)

C) Consider the following program, which compiles without warning, but crashes when run: Looking at the source code, why does the program crash? (3 marks)

```
int factorial(int x) {
    if(x==1)
        return 1;
    return x * factorial(x-1);
}
int main(int argc, char**argv) {
    int n = factorial(0);
    return 0;

}
```

D) What is the output of the following code (5marks)

```
float a,b,c;
int x,y,z;

a=10;

b=a*2-1;

c=a*2+b/2+3*a-1;
```

```
x= 10+5*5-50/10*2;

y=100*4/10/5/2-(1+2)*2;

z=x+y+c;

printf(" a = %.2f \n b = %.2f \n c = %.2f \n",a,b,c); printf(" x
= %d \n y = %d \n z = %d \n",x,y,z);
```

E) Consider the C program below and explain its components. State the output also (6marks)

```
/* hello.c hellow world first program*/

#include <stdio.h>

void main(){

int i,x,sum;

printf("enter two integer to get sum:");

scanf("%d%d",di,dx);

sum=i+x;

printf("sum is %d",sum);

}
```

F) What features of C-language that could be termed as having made it popular (3 marks)

G) Define computer programming (2marks)

H) What is the output of the following? (2 marks)

```
for (i=0;i<4;i++)
{ for (j=2;j<5;j++)
 {if (j==2)
 break;
 if (i==1)
 continue;
 printf("i=%d j=%d",I,j);
```

```
    }
}
```

QUESTION TWO **(20 MARKS)**

a) State six advantages of assembly language over machine language (6marks)

b) Discuss the advantages and disadvantages of high level language and state four high level languages (8marks)

c) Write a program to find the largest of three numbers (6marks)

QUESTION THREE **(20 MARKS)**

a) Define an interpreter and explain the difference between a compiler and an interpreter.
(4 marks)

b) Using qualifiers write a program to show the sizeof
   i. Short int
   ii. Int
   iii. Long int (4 marks)

c) Define an operator and using examples explain the following operators. (5 marks)
   i. Bitwise operator
   ii. Comma operator
   iii. Logical operator
   iv. Relational operator

d) State the use of scanf function (4 marks)

e) Explain the importance of the following in a program. (3 marks)
   i. Whitespace character
   ii. Ordinary character
   iii. Format character

QUESTION FOUR **(20 MARKS)**

a. Write a program that generates PASCAL'S triangle. (6 marks)
b. Write a program to display the first 10 multiples of 5 on a single line (5 marks)
c. Write a program to calculate the area of a triangle given the base and the height
(5 marks)
d. Define a function and state the importance of the main function (2 marks)

e. Define the following terms as used in programming (2 marks)
   i. Function definition
   ii. Prototype

//END