



MAASAI MARA UNIVERSITY

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

**SCHOOL OF SCIENCE AND INFORMATION
SCIENCE
B SC. IN COMPUTER SCIENCE**

**COURSE CODE: COM 1202
COURSE TITLE: INTRODUCTION TO
PROGRAMMING**

DATE: 10TH DECEMBER , 2018

TIME: 11:00AM -1:00 P.M

INSTRUCTIONS

- Answer Question ONE and any other TWO Questions From Section II
- Question 1 is compulsory.
- Time 2HRS.
- ***SWITCH OFF*** your mobile phone.

Section I, Compulsory (30 marks)

- (a) Explain what you understand by the following terms **(10 marks)**
- i. Programming.
 - ii. Machine language
 - iii. A variable
 - iv. An algorithm.
 - v. Compilers
- (b) Good programmers write programs in three steps. Explain the steps **(3 marks)**
- (c) The factorial of a number X is given by $X * X - 1 * X - 2 * X - 3 * \dots * 1$. The factorial of 0 and factorial of 1 are both 1. Write an algorithm for computing the factorial of a number between 0 and 10. **(6 marks)**
- (d) Explain any two methods you would use to insert comments in your C program **(3 marks)**
- (e) Give any three basic data types **(3 marks)**
- (f) Using an appropriate diagram represent an array with five data elements **(2 marks)**
- (g) Explain each of the following **(3 marks)**
- i. *strset*
 - ii. *strspn*
 - iii. *strrev*

Section II, Answer any two Questions Maximum (40 marks)

Question 2 (20 marks)

- (a) Describe the general structure of a C program **(5 marks)**
- (b) Write a C program with the following output **(5 marks)**
- (c) By declaring any three appropriate variables, write a program to compute the sum of two integers. Your program should prompt a user to enter any two integers, compute the sum and output the results **(10marks)**

Question 3(20 marks)

- (a) Declare an array large enough to take 0-79 characters. Use it in a simple C program that would prompt a user to type his name in small letters and reproduce the name in capital letters **(5 marks)**
- (b) Using strcpy, write a simple C program that reproduce/display the words
"Welcome to Maasai Mara university
where programmers are made"
(5 marks)
- (c) Using C programming Language, perform the following; **(10 marks)**
- i. Define an array of size 5 **(2 marks)**
 - ii. Assign any five elements to the array **(4 marks)**
 - iii. Determine the largest of the elements assigned. **(4 marks)**

Question 4 (20 marks)

- (a) Write a program to compute the surface area and volume of a cylinder. Your code should prompt the user to enter the radius of a cylinder, and then prompt the user to enter the height of a cylinder after which your code calculates and outputs the surface area and volume of the cylinder. **HINT:** mathematically, the volume of a cylinder is calculated by the formula; $V = \pi r^2 h$ while surface area is $A = 2 \pi r h + 2 \pi r^2$ (10 marks)

- (b) Using the switch statement, rewrite the following code (10marks)

```
#include<stdio.h>
main(){
int a;

if(a>=0){
printf("a is greater than zero\n");

    if(a>5){
printf("a>5\n");
    if(a>10){

printf("a>10");
    }

}

}
else{

printf("a is less than zero");

}

}
```