

EGERTON



UNIVERSITY

UNIVERSITY EXAMINATIONS

NJORO CAMPUS
SECOND SEMESTER 2011/2012

**SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF COMPUTER
SCIENCE**

COMP 200: INTRODUCTION TO STRUCTURAL PROGRAMMING

STREAM: Y2S2 BSC (COMP SCI)

TIME: 2 HRS

DAY: WEDNESDAY 12.00 – 2.00PM

DATE: 25/04/2012

SECTION A. (Compulsory)

Answer all questions in section A.

QUESTION ONE (30 MARKS)

- 1) Define structured programming (2 marks)
- 2) Write a program that will print your mailing address in the following form.
First line: Name
Second line: Door No, street
Third line: City, pin code (4 marks)
- 3) Highlight four disadvantages of machine language (2 marks)
- 4) Explain four types of constants used in C language citing examples of each (4 marks)
- 5) Explain the rules for defining variables. (2 marks)
- 6) Write a program in C language to read two numbers and print the sum of given two numbers (4 marks)
- 7) Given the radius of a circle, write a program to compute and display its area. Use a symbolic constant to define pi value and assume a suitable value for radius.

- 8) Given the values of three variables a, b and c, write a program to compute and display the value of x where

$$x=(ac + b)/(c - a)$$

Execute your program for the following values and comment on the output in each case.

(a) a=250, b=85, c=25

(b) a=300, b=70, c=70

(6 marks)

- 9) In formulating a program different kinds of data processing are involved. Explain the following as used giving example of each in a program

a. Constant

b. Keywords

c. Identifiers

(6 marks)

SECTION B (40 marks)

Answer any TWO questions. Each question carries equal marks.

QUESTION TWO (20 MARKS)

- 1) Explain 3 data types citing example of each as used in program formulation
- (6 marks)
- 2) Identify syntax errors in the following program. After the correction, what output would you expect when you execute it?

```
#define PI=3.14159
Main()
{
Int R,C;
Float perimeter;
Float area;
C=PI
R=5;
Perimeter=2.0*C*R;
Area=C*R*R;
Printf(“%f”, “%d”, &perimeter,&area)
}
```

(4 marks)

- 3) Explain how to declare and initialize pointers in C

(4 marks)

- 4) Write a structure in C with the name student, declare the appropriate variables, then define it. (2 marks)
- 5) Explain how you can declare a variable as a constant with example (1 marks)
- 6) Write a program in C to display the largest number (3 marks)

QUESTION THREE (20 MARKS)

- 1) What is an array? (1 marks)
- 2) Assuming that X=2, Y=1 and Z=0 initially what will be their values after executing the following code segments.

(a)

```
Switch(x)
{
Case2:
X=1;
y=x+1;
case1:
x=0;
break;
default:
x=1;
y=0;
}
```

(3 marks)

- 3) Define a function and distinguish between pre- defined and user defined functions (4 marks)
- 4) Using a simple program explain the following
 - a. Call by value
 - b. Call by reference (6 marks)
- 5) Explain the different kinds of data types in C language giving an example of each with a program (6 marks)

QUESTION FOUR (20 MARKS)

- 1) Explain the use of switch statement in a C program with its syntax (4 marks)
- 2) Admission to a professional course is subject to the following conditions:

Marks in mathematics ≥ 60

COMP 200

Marks in physics ≥ 50
Marks in chemistry ≥ 40
Total in all three subjects ≥ 200
Or
Total in mathematics and physics ≥ 150

Required:

Given the marks in the three subjects, write a program to access the applications to list the eligible candidates. **(6 marks)**

- 3) Write a program using in C the switch statement to display months of the year **(6 marks)**
- 4) Define a variable with example **(2 marks)**
- 5) Explain how to declare and initialize pointers in C **(2 marks)**

QUESTION FIVE (20 MARKS)

1. Explain array initialization and array declaration **(4 marks)**

2. Write a For statement to print the following.

a. 1, 2, 4, 8, 16, 32

b. 1, 3, 9, 27, 81, 243

c.

*

**

(6 marks)

3. Write a program that requests two float type numbers from the user and then divides the first number by the second and display the result along with other numbers. **(4 marks)**

4. Given the radius of a circle, write a program to compute and display its area. Use a symbolic constant to define pi value and assume a suitable value for radius.

(4 marks)

5. Write a program that prints even numbers from 1 to 100. **(2 marks)**