



THE CO-OPERATIVE UNIVERSITY OF KENYA

SPECIAL/SUPPLEMENTARY EXAMINATION AUGUST -2023

EXAMINATION FOR THE DIPLOMA COURSES

UNIT CODE: DCSC 1102

UNIT TITLE: PROGRAMMING CONCEPTS

DATE: MONDAY 14TH AUGUST 2023

TIME: 11:00 AM – 1:00 PM

INSTRUCTIONS:

- Answer question ONE (compulsory) and any other TWO questions

QUESTION ONE

- a) Define the following terms. (3 marks)
- Structured programming
 - Program
 - Variable
- b) Describe the 3 types of programming languages. (6 marks)
- c) Give 3 advantages of using flowcharts. (3 marks)
- d) Write the code for a C program that prints out the following information to the terminal when run. (4 marks)

Do not be worried and upset, Jesus told them.

Believe in God and believe also in me..

In my father's house, there are many rooms and I am going to prepare a place for you.

- e) Write the code for a C program that accepts 2 integer values and prints out their sum and product. (4 marks)

QUESTION TWO

- a) What is the purpose of the main function in any C program? (2 marks)
- b) Write the pseudocode for a program that accepts the radius of a circle and then prints, the circumference area. (4 marks)
- c) For the pseudocode in Question 2(a) above, write the C program equivalent. (4 marks)
- d) Name and illustrate the 4 major symbols used in drawing a flowchart. (4 marks)
- e) What is a data type? (2 marks)
- f) Name and describe 3 basic data types used in C programming? (4 marks)

QUESTION THREE

- Describe the 3 main programming constructs. (3 marks)
- Differentiate scanf from printf. (2 marks)
- Name and describe the 3 types of variables in a C program. (6 marks)
- What is a constant. (1 mark)
- Name and describe 4 types of operators used in a C program. (8 marks)

QUESTION FOUR

- a) Using C program examples, differentiate a while loop from a do-while loop. (6 marks)

- b) Write the code for a C program that accepts an adult patient's temperature that is input and then prints out the appropriate message based on the table below: (7 marks)

TEMPERATURE	MESSAGE
Below 25	Very sick
Between 25 and 30	Sick
Between 30 and 35	Getting ill
Between 36 and 40	Healthy
Above 40	Critical

- c) Write the code for a program that gives the output below: (4 marks)

22
21
20

- d) Write the code for a program that would produce the output below: (3 marks)

9-1=8
9-2=7
9-3=6
9-4=5
9-5=4
9-6=3
9-7=2

QUESTION FIVE

- (a) What translate an assembly language program to a machine language program. (1mark)
- (b) Explain difference between Variables and Constants. (4marks)
- (c) Discuss increment and decrement operators with example. (5marks)
- (d) Write a C program, algorithm and flowchart for a program that accepts a number from user and prints the sum of square. (10 marks)