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University Examinations 2021/2022

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

CIT 2112: FUNDAMENTALS OF COMPUTER PROGRAMMING

DATE: MAY 2022   **TIME: 1 HR 30 MINS**

INSTRUCTIONS: *Answer question **one** and any other **two** questions*

QUESTION ONE (30 MARKS)

a) List four rules for naming identifiers in C   4 marks

b) State two examples of each of the following as used in C programming: 4 marks

      i. Logical operators

     ii. Relational operators

c) Outline four characteristics of assembly language   4 marks

d) List three properties of array data structure   3 marks

e) Differentiate between runtime and logical errors   4 marks

f) Define the following programming terms: 5 marks

      i. Control structure

     ii. String

    iii. Runtime error

    iv. Syntax

     v. Array

g) List three examples of structured programming languages   3 marks

h) Name three parts of a loop   3 marks

QUESTION TWO (15 MARKS)

a) Write a C program code that prompts a user to enter an integer value. The program should then determine whether the value entered is even or odd   5 marks

b) With the aid of a diagram in each case, describe the following as used in flowcharts:6 marks

      i. Inputs/Outputs

      ii. Processes

      iii. Decisions

c) Differentiate between *scanf()* and *printf()* functions as used in C programming   4 marks

QUESTION THREE (15 MARKS)

a) Describe three types of control structures used in C programming   6 marks

b) The following is a C program that has errors. Use it to answer the questions that follow:

#include<stdio.h>

int main()

{

    int x,y;

    printf("enter the value of x\n")

    scanf("%d",x);

    if(x>20)

    printf("the value is greater than 20 and it is:",x);

    return 0;

}

Identify the errors and rewrite the correct program code   5 marks

c) Explain the difference between logical errors and syntax errors as used in programming   4 marks

QUESTION FOUR (15 MARKS)

a) Brenda intends to buy 4 loaves of bread and 5 packets of milk. If each loaf of bread cost KShs 50 and a packet of milk costs KShs 45, write a C program that could be used to calculate and display the amount of money she will spend.   6 marks

b) Explain the term function stating its syntax   4 marks

c) Describe the bottom-up approach to system design   5 marks