



**PAN AFRICA CHRISTIAN UNIVERSITY**

**(DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY)**

**END OF TERM EXAMINATION**

**DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY**

**COURSE CODE: DICT 0113**

**CAMPUS: ROYSAMBU**

**COURSE TITLE: PRINCIPLES OF PROGRAMMING AND ALGORITHMS**

**EXAM DATE: MONDAY, DATE (DD<sup>TH</sup> MONTH YEAR)**

**TIME: START HOUR – END 02:30-05 :30 HRS**

### **INSTRUCTIONS**

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other THREE questions in Section **B**.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

**SECTION A**

**(Answer ALL questions in this section)**

**SECTION A (10 Marks)**

**Question 1:**

- a. i. Define the term Algorithm as used in programming. **(2 Marks)**
- ii. Write an algorithm to calculate average of four numbers **(3 Marks)**
- b. Below is a C program to calculate sum of two numbers. The program contains errors. Re-write the program correcting the errors **(5 Marks)**

```
#include<stdio>
void mane()
{
char a,b,c;
print("Please enter any two numbers: \n");
scanf("%d %d", &a, &b);
c = a - b;
printf("The addition of two number is: %d", c);
```

**SECTION B**

**(Answer any THREE (3) questions in this section)**

**Question 2:**

Two programmers share the work of creating a program among themselves

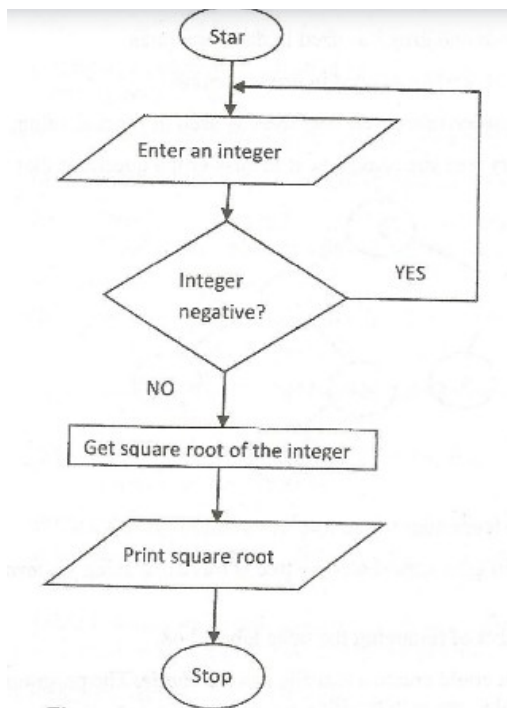
- i. Explain the programming approach that they are using **(4 Marks)**
- ii. Outline the advantages and disadvantages of this approach **(6 Marks)**

**Question 3:**

Write a C program code that would prompt a user to enter 5 integer numbers. The program should then sum up the numbers and display the results **(10 Marks)**

**Question 4:**

- a. The diagram below shows a flow chart used to solve a mathematical problem. Use it to answer the questions that follows



Write a C program to implement the program logic in the flow chart **(10 Marks)**

**Question 5:**

ABC company is involved in software development, they have identified the water fall model to implement their upcoming project. Advice on the various stages involved in this model **(10 marks)**

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**EXAMINATIONS PAPER**



**Question 6:**

The table shows the criteria used by a certain college to admit applicants to various course levels. Use it to answer the question that follows.

| KCSE GRADE | COURSE LEVEL       |
|------------|--------------------|
| B          | Degree course      |
| C          | Diploma Course     |
| D          | Certificate course |
| Any other  | Artisan Course     |

Write a C program that prompts a user to enter the grade obtained. The program should then output the course level the applicant is qualified to join. Use switch case control structure **(10 Marks)**

**THE END**