



PAN AFRICA CHRISTIAN UNIVERSITY

(DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY)

END OF TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: CICT 0113

CAMPUS: ROYSAMBU

COURSE TITLE: INTRODUCTION TO PROGRAMMING CONCEPTS

EXAM DATE: MONDAY, DATE (DDTH 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. The following is a program written in one of the programming languages

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- i. Identify the generation of programming language **(1 Mark)**
- ii. Explain two disadvantages of using the language **(4 Marks)**

- b. Below is a C program to calculate sum of two numbers. The program contains errors. Identify 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:

Write a C program code that would prompt a user to enter two integer values. The program should then compute the product of the two numbers and display the output

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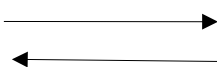
Marks)

Question 3:

- a. Below are some of the components that can be used in the construction of a DFD diagram. Briefly explain the function of each component **(6 Marks)**

i) 

ii) 

iii) 

- b. Below is a C program, give the expected output when the program executes **(4**

Marks)

```
#include <stdio.h>
```

```
int main() {
```

```
    int a = 20;
```

```
    int b = 10;
```

```
int c = 15;

int d = 5;

int e;

e = (a + b) * c / d;

printf("Value of (a + b) * c / d is : %d\n", e );

e = a + (b * c) / d;

printf("Value of a + (b * c) / d is : %d\n" , e );

return 0;

}
```

Question 4:

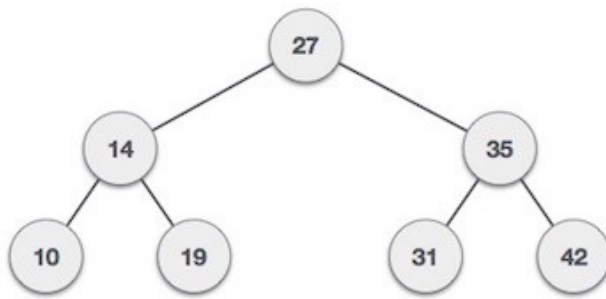
John is a student at PAC university. He intends to utilize a queue or a stack data structure in writing a program. Advise him on the differences in the operations between the two data structures **(10 Marks)**

Question 5:

a Below are operators used in C programming. Giving an example describe each of the operator **(6 Marks)**

- i. Arithmetic Operators
- ii. Assignment Operators
- iii. Logical Operators

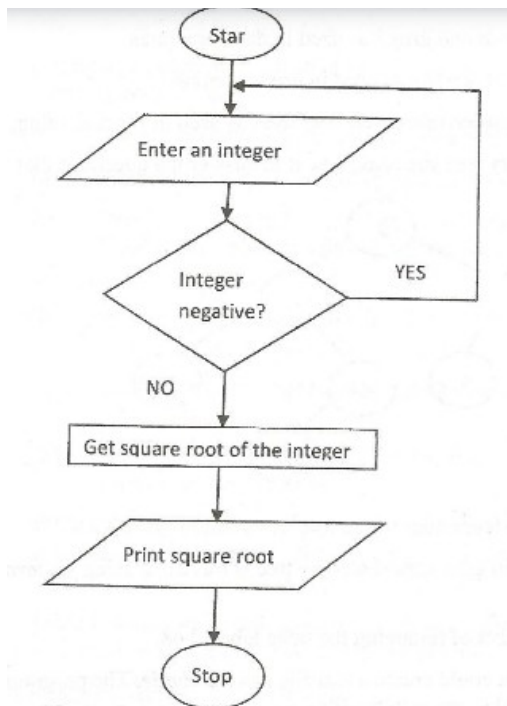
b The figure below shows a binary tree structure, use it to answer the questions that follows **(4 Marks)**



- i. Identify all the leaf nodes in the tree
- ii. Show how you would traverse the tree using pre-order traversal

Question 6:

The diagram below shows a flow chart used to solve a mathematical problem. Explain the flow of the flow chart **(10 Marks)**



THE END