PAN AFRICA CHRISTIAN UNIVERSITY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY AND BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

END OF TERM EXAMINATION

DEPARTMENT: **COMPUTING & INFORMATION TECHNOLOGY**

COURSE CODE: **BSIT 104/BIT 104**

CAMPUS: **ROYSAMBU**

COURSE TITLE: **INTRODUCTION TO COMPUTER PROGRAMMING**

EXAM DATE: **WEDNESDAY,XXXX,DECEMBER ,2025**

TIME: **8:00AM -11:00AM**

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.**
- Write only your **student number** on the answer booklet provided.

SECTION A
(Answer ALL questions in this section)
Question 1

a) Study the code below and answer the questions:

```
#include <stdio.h>


int main() {
    int a, b;
    printf("Enter two integers: ");
    scanf("%d %d", &a, &b);

    int result = a + b;
    printf("Sum = %d\n", result);

    if (a = b)
        printf("a is equal to b\n");
    else
        printf("a is not equal to b\n");

    return 0;
}
```

i. Explain the issue in the if statement. **[2 Marks]**

ii. How does it affect the program's output **[2 Marks]**

iii. Explain why the scanf statement includes ampersands (&) before the variables. **[2 Marks]**

iv. What happens if they are omitted **[2 Marks]**

v. Explain the role of the return 0; statement in the main function **[2 Marks]**

SECTION B

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

Question 2

a) James is learning about different ways of writing computer programs. His teacher mentions that programming paradigms help guide how programs are written and structured.

i. Describe the term programming paradigms **[2 Marks]**

ii. Describe **TWO** common programming paradigms used today**.** **[4 Marks]**

b) Write a C program snippet that demonstrates the use of arithmetic operators only in an if statement to check if a number x is between 10 and 20 (inclusive).

[4 Marks]

Question 3

a) Lucy is learning how computer programs run. Help her understand the difference between a compiler and an interpreter, and give **ONE** advantage of each.

[4 Marks]

b) Discuss the importance of structured programming in software development**.**

[2 Marks]

c) During a class, Paul was asked to use control structures in his code. Describe **TWO** control structures he can use and explain how each one helps in structured programming. **[4 Marks]**

Question 4

a) Consider the following loop:

```
for (int i = 0; i < 5; i++) {
    printf("%d\n", i);
```


}

i. Explain the components of the for loop and describe how many times the loop will execute. **[4 Marks]**

b) Describe how a pointer can be used to access elements of an array in C. Provide a code example demonstrating this. **[6 Marks]**

Question 5

Write a C program segment that performs the following tasks:

a) Declare an array to store 5 integer values. **[2 marks]**

b) Initialize the array with any 5 integer values of your choice. **[2 marks]**

c) Use a loop to calculate the total (sum) of the array values. **[3 marks]**

d) Calculate the average of the values. **[1 mark]**

e) Print the average to the screen. **[2 marks]**

Question 6

a) Alex is learning how to write computer programs, but his code isn't working as expected. Explain the difference between syntax errors, semantic errors, and runtime errors to help Alex understand what might be going wrong. **[6 Marks]**

b) Explain the significance of operator precedence in expressions. Give an example where incorrect understanding of operator precedence can cause a logic error. **[4 Marks]**

EOF

