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: **TUESDAY, DATE (APRIL 2025)**

TIME: **START HOUR – END 1:30-3:30 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.**
- Write only your **student number** on the answer booklet provided.

SECTION A
(Answer ALL questions in this section)

Question 1

Study the code below and answer the questions

```
#include <stdio.h>

int main() {
    int x, y;
    printf("Enter two numbers: ");
    scanf("%d", x, y);

    sum = x + y;

    printf("The sum is: %d\n", sum);

    if (x > y);
        printf("x is greater than y\n");

    return 0;
}
```

i. Explain the issue with the scanf statement and provide a corrected version. **[4Marks]**

ii. Explain the mistake present in the if statement and describe its effect on program execution. **[2Marks]**

iii. Describe the behavior of the program when the user inputs two numbers, considering the existing errors. **[4Marks]**

SECTION B

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

Question 2

a) A school wants a grading system where a student's marks in 5 subjects are entered, and the program calculates the total, average, and grade. Implement this using functions in C. **[4Marks]**

b) A shopping cart system stores the prices of 10 items in an array. Write a C program that calculates and displays the total bill, including a 10% discount if the bill exceeds $100. **[6Marks]**

Question 3:

a) Study the code below and answer the questions

```
#include <stdio.h>

int main() {
    int num1, num2;
    printf("Enter two numbers: ");
    scanf("%d %d", num1, num2);

    int product;
    product = num1 *;

    printf("Product: %d\n", product);

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

    return 0;
}
```

i. Explore the reason why the line product = num1 *; results in an error and suggest a fix. **[4 Marks]**

ii. Describe what is missing in the for loop and its impact on execution. **[2 Marks]**

iii. Examine whether the program executes correctly when the user enters two numbers, and provide an explanation. **[4 Marks]**

Question 4:

a) A game developer wants to create a simple number-guessing game where the user keeps guessing until they find the correct number. Explain the type of loop

structure should be used, and provide reasons. **[4 Marks]**

b) You have advised James to use high level programming language to develop a system for their organization. Explain **THREE** reasons for this choice. **[6 Marks]**

Question 5:
Write a C program to simulate an ATM banking system using control structures (if-else, loops, and switch). The program should:
Questions

i. Use a predefined PIN (e.g., 1234) and verify user input.
ii. Lock the account after three incorrect PIN attempts.
iii. Provide a menu for the following operations:
    a. Check balance
    b. Deposit money
    c. Withdraw money
    d. Exit
iv. Ensure the withdrawal amount does not exceed the available balance.

Question 6:

a) A software developer is working on a C program that manages employee records for a company. The program requires variables to store employee names, salaries, and department IDs. Explain the **THREE** classifications of variables in C programming that the developer should use.

[4Marks]

b) A C programmer is developing a student management system but encounters multiple issues during compilation and execution. Describe three types of errors that may arise in the program, providing an example for each. **[6 Marks]**

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