(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS
2024/2025 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS

FOR DIPLOMA IN
(INFORMATION TECHNOLOGY)

COURSE CODE : DIT 0580/ITC 0250

COURSE TITLE : PROCEDURAL PROGRAMMING

DATE: 22/04/2025 **TIME:** 2.00 P.M. - 4.00P.M. 2HRS

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] (24 MARKS)

a. Define procedural programming **[2 marks]**

b. Describe the following concepts to the C++ programming language **[8 marks]**

i. Array

ii. Pointer

iii. Class

iv. Object

c. Discuss Procedural Programming languages **[4 marks]**

d. Write down:

i. an array that can store ten values of type int **[3 marks]**

ii. the syntax of a typical declaration for an array in C++ **[3 marks]**

e. Write code that generates the output that appears on a single line as, "Welcome to KIBU!" **[4 marks]**

QUESTION TWO (18 MARKS)

a. Differentiate between interpreting a program and compiling a program **[4 marks]**

b. Explain the main parts of a function. **[6 marks]**

c. Write a function that takes two integers a and b and returns the maximum. **[4 marks]**

d. Explain the concept of memory leak in C++. **[4 marks]**

QUESTION THREE (18 MARKS)

a. (i) Consider the following short program: **[8 marks]**

```
#include <iostream>
int main(void)
{
cout << "Welcome to the C++ World!";
return 0;
}
```

Explain each of the six lines in the program.

b. Write a program that produces the correct size of each of the following data types. **[8 marks]**

i. Character

ii. Short integer

iii. Long integer

iv. Float

v. Wide character

QUESTION FOUR (18 MARKS)

a. Give an four advantages of Procedural Programming **[4 marks]**

b. Compare procedural programming to Object-Oriented Programming in terms of Core Concepts, Data Handling, State management and Reusability **[4 marks]**

c. Code organization is a key concept in procedural programming. State and describe three strategies to ensure code organization. **[6 marks]**

d. How can a programmer use the Don't Repeat Yourself Concept (DRY) principle in programming? **[2 marks]**

e. What does the following control flow statements do? **[2 marks]**

   i. Break statement

   ii. Continue statement

QUESTION FIVE (18 MARKS)

a. Explain what a programming environment is. **[2 marks]**

b. **Explain the concept of "Pass by Reference"** **[2 marks]**

c. Why do we use Switch Statements? **[2 marks]**

d. If-Else Statements are used to make decisions in the program. For integer x= 5, write an if-else statement code that checks if integer x is greater than 10 and prints "x is greater than 10", otherwise prints "x is less than or equal to 10" **[8 marks]**

e. Explain the two looping structures. **[4 marks]**