KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, SECOND SEMESTER EXAMINATION
FOR THE DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
DIT 1006 – OBJECT ORIENTED PROGRAMMING

Date: 11TH AUGUST 2023
Time: 8:30AM – 10:30AM

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS
QUESTION ONE (30 MARKS)

a)   Comments can be used to explain C++ code, and to make it more readable. Describe using examples the two ways to include comments in C++   (4 Marks)

b)   Object-Oriented Programming has advantages over conventional approaches. Explain   (4 Marks)

c)   Define the term escape sequence and identify the various escape sequence with their descriptions   (5 Marks)

d)   A programming paradigm is a fundamental style of computer programming, a way of building the structure and elements of computer programs. Discuss the main programming paradigms.   (5 Marks)

e)   Explain the following simple program in C++ program language   (6 Marks)

```cpp
// My first simple C++ program
#include<iostream>
using namespace std;
int main() {
cout << "Hello World!";
return 0; }
```

f)   Write a C++ program that outputs your first name, omitting namespace   (6 Marks)

QUESTION TWO (20 MARKS)

a)   Variables are containers for storing data values. Explain the different **types** of variables with their keywords in C++, give example in each   (10 Marks)

b)   Write a C++ program that declares five main data types and displays their values on the screen   (10 Marks)

QUESTION THREE (20 MARKS)

a)   Operators are used to perform operations on variables and values. Arithmetic operator is one of the operators in C++. Explain the different arithmetic operators their descriptions and example of

each (10 Marks)

b) As a programmer, write a simple C++ program that adds two values, one of the values is integer and the other value is floating-point (10 Marks)

QUESTION FOUR (20 MARKS)

a) Classes and objects are the two main aspects of object-oriented programming. Define the term class and object and give example of each (5 Marks)

b) Methods are **functions** that belongs to the class. Discuss ways to define functions that belongs to a class (5 Marks)

c) Write a C++ program that creates a class as Shapes, object as rectangle and square, attributes as length and width and displays the area of both objects (10 Marks)

QUESTION FIVE (20 MARKS)

a) Access specifiers define how the members (attributes and methods) of a class can be accessed. Discuss the main access specifiers (6 Marks)

b) Inheritance is the mechanism which allow a class A to inherit properties of a class B. explain the main types of inheritance (4 Marks)

c) A constructor in C++ is a **special method** that is automatically called when an object of a class is created. Highlight the characteristics of a constructor (5 Marks)

d) Define the term polymorphism and state the main types of polymorphism (5 Marks)