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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, SECOND SEMESTER EXAMINATION
FOR THE DIPLOMA IN BUSINESS INFORMATION 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)

- 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)
- Object-Oriented Programming has advantages over conventional approaches. Explain (4 Marks)
- Define the term escape sequence and identify the various escape sequence with their descriptions (5 Marks)
- 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)
- Explain the following simple program in C++ program language (6 Marks)

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

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

QUESTION TWO (20 MARKS)

- Variables are containers for storing data values. Explain the different **types** of variables with their keywords in C++, give example in each (10 Marks)
- Write a C++ program that declares five main data types and displays their values on the screen (10 Marks)

QUESTION THREE (20 MARKS)

- 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)