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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR
FIRST YEAR, SECOND SEMESTER EXAMINATION
FOR THE DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
DIT 1006 – OBJECT ORIENTED PROGRAMMING

Date: 09TH DECEMBER 2022
Time: 8:30AM – 10:30AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Explain advantages of object-oriented programming over procedural programming (4 Marks)
- b) List other object-oriented programming languages apart from C++ (4 Marks)
- c) Describe three underlying concepts of object-oriented programming (3 Marks)
- d) State reasons why programmers might decide to use C++ over other programming languages (6 Marks)
- e) By use of examples, explain two ways of using comments in C++ (4 Marks)
- f) In the following program the variable was assigned two different variables. Explain the output of the program (4 Marks)

```
#include <iostream>
using namespace std;
```

```
main() {
    int myAge = 15;
    myAge=24;

    cout << "I am " << myAge << " years old.";
    return 0;
}
```

- g) Define the following terms the object, attribute and methods and in the list below indicate the object, attribute and methods: weight, color, car, drive, brake (5 Marks)

QUESTION TWO (20 MARKS)

- a) Write a simple C++ program to output "Hello World!" and explain the program step by step (10 Marks)
- b) Write a C++ program that demonstrates introduction of a new line by use of an escape sequence (10 Marks)

QUESTION THREE (20 MARKS)

- a) Explain the different data types and demonstrate how to declare each (10 Marks)
- b) A high school student is unable to calculate the area of a cylinder, write a program that allows the student to enter the values and calculates the area (10 Marks)

QUESTION FOUR (20 MARKS)

- a) Distinguish between the two categories of inheritance concept in C++ (4 Marks)
- b) Describe the different arithmetic operators used to perform common mathematical operations by use of examples (8 Marks)
- c) Create a simple calculator that allows user to input two numbers and prints the sum of the two numbers (8 Marks)

QUESTION FIVE (20 MARKS)

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|----|--|-----------|
| a) | Identify and discuss the two types of polymorphism | (4 Marks) |
| b) | Distinguish between constructors and destructors | (4 Marks) |
| c) | Explain the three-access specifier used in C++ | (6 Marks) |
| d) | Describe the classes included in the fstream library | (6 Marks) |