



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**SECOND YEAR FIRST SEMESTER EXAMINATION  
FOR THE DIPLOMA IN IT**

**COURSE CODE: DIT 066**

**COURSE TITLE: PROCEDURAL PROGRAMMING**

**DATE: 26/04/2022**

**TIME: 3:00 - 4:30PM**

**INSTRUCTIONS TO CANDIDATES**

- Answer Questions **ONE** and **ANY OTHER TWO**.

**TIME: 1 Hour 30 Mins**

**MMUST observes ZERO tolerance to examination cheating**

**This Paper Consists of 3 Printed Pages. Please Turn Over. ▲**

## SECTION ONE (COMPULSORY)

Question #1 [24 Marks]

- What is a constant in C++? [2Marks]
- Explain two ways how constants are written in C++. Give examples [2Marks]
- List TWO advantages of C++ programming [2Marks]
- Write a program that prompts for two integers and displays the greater integer. [4Marks]
- Explain any TWO types of errors you get in a C++ program [4Marks]
- With examples, describe any TWO types of comments used in C++. [4Marks]
- What does *using namespace std* do? [2Marks]
- List FOUR conditions you consider when naming a variable. [4Marks]

## SECTION TWO (ANSWER ANY TWO QUESTIONS)

Question #3 [18 marks]

- Distinguish between `x++` and `++x` as used in C++ programming [2Marks]
- Write a program that prints ODD numbers between 0 and 40 to the screen. [5Marks]
- With a flow chart, explain how do while loops works [5Marks]
- What would be the correct variable type in which to store the following information? [4Marks]
  - Names of people
  - The area of a plot.
  - The number of chicks.
  - Yes/No values.
- What effect do tabs, spaces, and new lines have on the program? Why do programmers use them? [2Marks]

Question #3 [18 marks]

- What is the difference between `++` and `--` Unary operators? [2Marks]
- Why are the above operators referred to us unary operators? [1 Mark]
- Describe step by step how the following program executes [5Marks]

```
#include<iostream>
using namespace std;
int main()
{
    int x;
    cout<<"Enter an integer "<<endl;
    cin>>x;
    switch (x) {
    case 1:
        if(x==1)
            cout << "x is 1";
        break;
    case 2:
        if(x==2)
```

```

cout << "x is 2";
break;
case 3:
    if(x==3)
        cout << "x is 3";
        break;

```

```

default:
    cout << "value of x unknown";
    break;
}
return 0;
}

```

- d) If a user runs the above program and inputs 49, what will be the output of the program [4 Marks]
- e) Explain what the break statement does [1Mark]
- f) With a flow chart, explain how While loops works [5Marks]

#### Question #4 [18 Marks]

- a) Using a **for statement**, write a program print numbers from 30 to 0. [5 Marks]
- b) What is a null statement? [1Marks]
- c) Write a program that prompts for radius and computes the area of a circle [4Marks]
- d) Explain the difference between **if/else** and **switch case** with an example? [2Marks]
- e) Using if/else statement write a program that prompts for score and returns pass if score is above 40 else returns fail [6Marks]

#### Question #5[18 marks]

- a) Explain the difference between while and do...while loops? [2Marks]
- b) How do you declare an array? [2Marks]
- c) Write a nested for loop that prints a pyramid of six (\*) [7Marks]
- d) Write a program that prompts for THREE integers and sorts them in a descending order [7Marks]