LO

(*University of Choice*)

MASINDE MULIRO UNIVERSITY OF

SCIENCE AND TECHNOLOGY

(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

MAIN EXAM

2022/2023 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATION

FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

COURSE CODE: DIT 077

COURSE TITLE: OBJECT ORIENTED PROGRAMMING

DATE:14/04/2023   **TIME: 8:00-10:00am**

INSTRUCTIONS TO CANDIDATES:
Answer Question **ONE** and any Other **TWO** questions

   Answer -------------
TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

Paper Consists of 3 Printed Pages. Please Turn Over   .

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Question one (24 marks).

a. Explain Five java programming paradigm   10mks
b. Write a java code that will prompt the user to enter two integer values, computer the sum and return the results.   5mks
c. A programming student wanted to write a java code that prints numbers 1,2,3,4,5,6,7,8,9 and 10 on a screen in descending order using a **for...loop.** Identify the type of errors the student made and correct the code.   5mks

```
Public class descendingNumbers{
Public static void main(String[]orgs){
Int I =1;
While(i<=10)
{
System.out.println(i);
I++
}
```

d. Write a java code that takes three integers from the user, compares them and returns the smallest and the largest numbers   4mks

Question two (18mks).

a. Differentiate between a variable and a constant   2mks
b. Java programming language is preferred over other programming languages. Discuss.   5mks
c. Amani has developed immense interest in java programming, explain to him how he can set the development environment on windows operating system   4mks
d. Using appropriate example explain the structure of a java program   3mks
e. Discuss the history of java programming language   4mks

Question three (18mks)

a. Define the term array and give the types of arrays you know   3mks

b. Kimana wrote the java code below,
   i.   identify the types of errors in the code   3mks

```
public class Test  Array
{
{
double[] myList = {1.9, 2.9, 3.4, 3.5};
for ( i = 0; i < myList.length; i++) {
```

```java
            printf(myList[i] + " ");
            }
            double total = 0;
            for ( i = 0; i < myList.length; i++) {
             total += myList[i];
            }
            printf ("Total is " + total);
            double max = myList[0];
            for ( i = 1; i < myList.length; i++) { if (myList[i] > max) max = myList[i];
            }
            printf("Max is " + max);
            }
            }
```

      ii.   Correct the errors and give the intended output of the code   3mks

c. Using a control structure of your own, write a java program that prompts user to enter marks of at least 5 students, give grading and a comment based on the following convention.   9mks

Marks range	grade	comment
Above 100%	invalid	Marks cannot be above 100
100% to 70%	A	excellent
69% to 60%	B	Good
59% to 50%	C	average
49% to 40%	D	pass
39% to 0%	E	failed
Below 0%	invalid	Marks cannot be below 0

Question four(18mks).

a. Discuss the various kind of relationships in UML   6mks

b. Masinde Muliro University has both staffs and students, both have a name, year of birth and a unique identification number. The staffs have the following attributes; year of employment, specialization and salary while students have year of study and course.

      i.   Write a class diagram to represent the above information   5mks

      ii.   Write a java program using setters and getters that will capture the above details.

                7mks

Question five(18mks).

a. Define the term identifier and state rules governing identifiers naming   4mks

b. Write a java code that compute the factorial of a number entered by the user   5mks

c. Different types of variables are declared in java programming. Discuss   4mks

d. Explain the major types of comments in java.   4mks