



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2023/2024

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR THE DIPLOMA IN  
INFORMATION TECHNOLOGY

### CIT 2212: OBJECT ORIENTED PROGRAMMING

DATE: APRIL 2024

TIME: 1<sup>1</sup>/<sub>2</sub> HOURS

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#### INSTRUCTIONS:

1. Answer Question ONE, and any other TWO
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#### QUESTION ONE (30 MARKS)

- a) Discuss the for loop using an example (3 marks)
  - b) Write a Java program to print the area and perimeter of a triangle. (2 marks)
  - c) Write a Java program to print the even numbers from 1 to 99. Prints one number per line. (3 marks)
  - d) Print the following pattern using loop (3 marks).  

```
1
12
123
1234
```
  - e) discuss three types of variables you know in java (6 marks)
  - f) discuss two types of access modifiers giving examples in each category (4 marks)
  - g) what do you understand as a constructor in java. (2 marks)
  - f) what is your understanding of the concept of methods in java. (3 marks)
  - g) briefly show you understanding of the following in java (4 marks)
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Math.max(x,y)

Math.min(x,y)

math.sqrt(x)

Math. Random ()

### **QUESTION TWO (15 MARKS)**

- a) Discuss the five types of operators in java programming (5 marks)
- b) Write a java program to show understanding of the following concepts inheritance and polymorphism. (2 marks).
- c) Differentiate between overloading and overriding (4 marks)
- d) Differentiate between while and do while loop using an example (4 marks)

### **QUESTION THREE (15 MARKS)**

- a) Differentiate between type casting and widening casting in java (2 marks)
- b) Discuss the ternary operator in java (2 marks)
- c) What is the dot operator? (2 marks)
- d) Demonstrate your understanding of type casting in java (3 marks)
- e) What is correct syntax for main method of a java class? (3 marks)
- f) Show your understanding of class in java (3 marks)

#### QUESTION FOUR (15 MARKS)

- a) String txt=" qwqffgegbjk vhwjvhbj". Write a java program to evaluate the length of text (2 marks)
- b) What is the syntax of declaring an array by using an example (2 marks)
- c) Write a Java method to find the smallest number among three numbers. (2 marks)
- d) What is the function of the following java method *concat ()* (2 marks)
- e) Write a java program that accepts numbers from the user and calculate sum, product, division, modulus and difference. (7 marks)