



Spring  
AUTUMN

## MID SEMESTER EXAMINATION-2022-23

Semester: 4<sup>th</sup> (Regular)  
Subject Name:- WT & Code:- IT 2004  
Branch (s): - B.Tech.[CSE/IT/CSCE/CSSE]

School of Computer Engineering  
Kalinga Institute of Industrial Technology, Deemed to be University  
Subject Name: Web Technology  
[Subject Code: IT 2004]

Time: 1 1/2 Hours

Full Mark: 20

*Answer any four Questions including Q.No.1 which is Compulsory.  
The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.*

1. Answer all the questions.

[ 1 x 5 ]

a) Consider the following html and css code snippets and find in what color will it display the text "MIDSEM" that is written in <h1>...</h1> tag :

**a.html:**

```
<html><head><style> h1 {color:black;} </style>
<link rel="stylesheet" href="a.css"> </head>
<body>
<h1 style=" color:blue;"> MIDSEM</h1>
</body>
</html>
```

**a.css:**

```
h1 {color:red;}
```

b) Predict the output of the following Java program snippet:

```
class MainClass {
    public static void main (String[] args) {
        int x = 64;
        int y;
        x = x << 2;
        y = x >> 3;
        System.out.print(x + " " + y);
    }
}
```

c) Which of the following statement(s) is/are not valid syntax for the declaration of a Two-Dimensional Array in Java?

- int [] array1[] = new int [2][3];
- int [] array2[] = new int [2][];
- int [] array3[] = new int [][][2];
- int [] array4[] = new int [][] {{1,2,3},{4,5,6}};

- d) Will the following code snippet compile successfully? If yes, what is the output of the following program?

```
public class MyClass {  
    private int x = 10;  
    static int m1() {  
        int y = x;  
        return y;  
    }  
    public static void main (String[] args) {  
        m1();  
    }  
}
```

- e) What is the correct output of the following program snippet?

```
class TestClass {  
    TestClass get() {  
        return this;  
    }  
    public static void main(String[] args) {  
        TestClass a = new TestClass();  
        TestClass b = a.get();  
        System.out.println(a.equals(b));  
    }  
}
```

- i. false
- ii. true
- iii. 1
- iv. 0

2. (a) Write a java program that reads an unspecified number of non-zero integers, determines how many positive and negative values have been read so far, and computes the total and the average of the input values read so far (not counting the zero input value, if any). Your program ends with an input of zero (0) from the user. Display the average as a floating-point number.

(b) What is garbage collection in JAVA? How does one call it explicitly? [ 4 + 1 = 5 Marks ]

3. (a) Can you overload the main() method in Java? Justify your answer.

(b) Draw the following HTML table using Rowspan and Colspan for proper divisions and fill in the colour mentioned. Each division should also display the name of the colour as displayed in the table below. (Note:- All colors mentioned are recognized by HTML) [ 1 + 4 = 5 Marks ]



BLUE		PINK	YELLOW	
YELLOW	RED	GREY		
GREEN	WHITE	MAROON	LIME	
	GREY	ORANGE		
		PINK	LIME	BLUE
MAROON	GREY	YELLOW	RED	GREY

4. (a) Write a class in Java with a suitable method in it to find the Greatest Common Divisor (GCD) of three numbers. Also write another class (the driver class) to take three input numbers from user: two of these inputs to be taken from command prompt and the remaining one to be taken using the Scanner class. Pass these three numbers to the GCD method of the previous class through an object and print the result.
- (b) It is said that the inner class can access the private instance variables of the outer class. Explain with suitable example(s). [ 3 + 2 = 5 Marks ]
5. (a) Can we have this and super in the same constructor in Java? Justify your answer.
- (b) Assume that a bank offers two types of accounts: standard and premium, from which a customer can select one while opening a bank account. An account holder can deposit any amount of money into his or her account, but when withdrawing, a premium account holder can withdraw up to Rs 10 lakh in a day, whilst a regular account holder can withdraw up to Rs 1 lakh free of charge and up to Rs 5 lakh with a .05% penalty. In this regard write a java program with the following specifications:
- Create a super class Account that contains various information of a account holder like account number, account type, name, current balance etc. along with day, month and year of last deposit. Account class also contains three methods: one for checking current balance, one for depositing money and the third for withdrawing money. New account is created with the personal information in the constructor of the class and the account number is generated by auto-increment.
  - Create two subclasses: StandardAccount and PremiumAccount, both inherit the members of the Account class and override the withdrawal() method as per above mentioned specifications.
  - In main() method, create some account instances for both the account types and demonstrate the execution of the methods. Suitable transaction messages need to be displayed. [ 1 + 4 = 5 Marks ]

