SPRING MAKEUP MID SEMESTER EXAMINATION-2023

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**

All Questions are 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) Pick the correct alternative as the output of the following code snippet with proper justification.

```
import java.io.*;
public class TestException {
    public static void main(String[] args) {
        try {   go(1 == 0);
                go(1 == 1);
        } catch (FileNotFoundException e) {   System.out.println(e);   }
        catch (IOException e)             {   System.out.println(e);   }
        catch (Exception e)               {   System.out.println(e);   }
    }
    public static void go (boolean b) throws IOException, FileNotFoundException {
        if (!b) throw new IOException();
        throw new FileNotFoundException();
    }
}
```

i. Compilation Time Error
ii. Execution Time Error
iii. Display: "java.io.IOException"
iv. Display: "java.io.FileNotFoundException"

b) Pick the correct alternative as the output of the following code snippet with proper justification.

```
class Outer {
    int x = 10;
    class Inner {
        int x = 100;
        void show(int x){       System.out.println(x);   }
    }
    class InnerSub extends Inner {
        int x = 1000;
        void show(int x){       super.show(this.x);      }
    }
    public static void main(String[] args) {
        int x =  10000;
        new Outer().new InnerSub().show(x);
    }
}
```

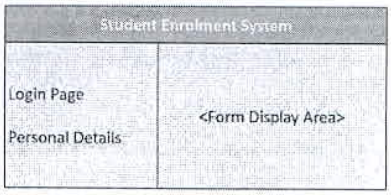
i. 10 ii. 100 iii. 1000 iv. 10000

c) Which one(s) of the following statements is/are not True?
   i. A final method can be overridden in the subclass.
   ii. A final class can be instantiated at runtime.
   iii. Final keyword is one of the access modifiers in Java.
   iv. A final variable is treated as constant.

d) What is the difference between <link> tag and <a> tag in HTML? Explain with suitable examples.

e) Which one(s) of the following statements is/are True?
   i. An abstract class can have full definitions of all its methods.
   ii. If a derived class does not override the methods of an abstract super class then it itself becomes an abstract class.
   iii. A class may be derived from any number of classes in Java.
   iv. A top class (outer class) can be declared as public, private, and protected.

2. Write an HTML code to create an web page as per the following style and specifications. On clicking the Login Page link, a login page containing User Id and Password should be displayed on the form display area. On clicking the Personal Details link, a form containing Name (Textbox), Roll No (Textbox), Gender (Radio Button), Hobbies (Checkbox) and Nationality (Drop-down List) followed by Submit and Reset Buttons below the page should be displayed on the same area. [5 Marks]



3. (a) Write a program in Java having an interface called *Address* with two methods called *getAddress()* and *setAddress()*. The *Address* interface is implemented by three concrete classes named *HomeAddress*, *OfficeAddress* and *SchoolAddress*. Use dynamic method dispatch concept to override the above mentioned methods and display the address of home, office and school accordingly.

(b) What will happen if we define a Java abstract class as final? What will happen if we define a static method inside a Java abstract class? Justify your answers in both the cases. [3 + 2 = 5 Marks]

4. (a) Implement a class *CPU* having private data members *manufacturer* (String) and *price* (double), and two inner classes *Processor* and *RAM*. *Processor* class has private data members *numcores* (int) and *manufacturer* (String), and private methods *getCache()* and *setCache()*. *RAM* class has private data members *memory* (double) and *manufacturer* (String), and private methods *getClockSpeed()* and *setClockSpeed()*. Finally, implement a driver class *Main* to create a *CPU* object and display all the details of that object in user console.

(b) What is Anonymous Inner class in Java? Explain with suitable example. [3 + 2 = 5 Marks]

*** Best of Luck ***