above package and the number of terms has to be specified by the user.

6. (a) Write an applet that places a rectangle, a rounded rectangle, a 3D rectangle and a fill rectangle of random sizes and colors inside the applet's visible area. [4]

   (b) Discuss the life cycle of applet. [4]

7. (a) Write a java program containing an abstract class Shape with a method called volume(). The Shape class will have child classes as Sphere and Cube which will override the methods and display the area accordingly. [4]

   (b) How multiple inheritance is achieved in java? Explain with suitable example. [4]

8. Write Short notes (any two): [4 × 2]

   (a) Style sheet Types

   (b) In-Text Link

   (c) Delegation Event Model

   (d) Inner Class & Nested Class

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AUTUMN END SEMESTER EXAMINATION-2017

3rd Semester B.Tech & B.Tech Dual Degree

WEB TECHNOLOGY

IT-2002

(Regular-2016 & Back-2015 Admitted Batch)

Time: 3 Hours Full Marks: 60

Answer any SIX questions including question 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 in brief: [2 × 10]

   (a) Explain the functionality of alink and vlink attributes of <body> tag with suitable example.

   (b) Write down the HTML code for the following table and each cell of the table contains link.

CSE
IT
CS&CE
CS&SE

   (c) Explain the functionality of <textarea> and <select> tags with examples.

   (d) What is the output of the code snippet:

```
class B{
        public static void main (String args[])
        {
        String[] argh={"x", "y", "z"};
        args=argh;
        for (int i=0;i<=args.length; i++){
                System.out.println(args[i]);
}
}}
```

(e) Differentiate between instance variables and class variables.

(f) What is the output? If error comes, write down the reasons.

```
class Base{
    void Base(){
        System.out.println("In Base");
        }
          public static void main(String a[ ]){
              Base b=new Base();
    }
}
```

(g) What makes Java a platform-independent language?

(h) Explain the importance of JVM and JRE.

(i) Differentiate between 'throw' and 'throws' keywords in java.

(j) Differentiate between Vector and ArrayList.

2. (a) Create a specimen of a corporate web page. Divide the browser window into two frames. The left frame will contain three hyperlinks: Log In, About Us and Contact Us. Clicking on any of these links will lead to the appropriate page which must be open in the target frame, which is on the right hand side. [4]

(b) Discuss any four OOP principles in java. [4]

3. (a) Write a java program which will accept a String from the keyboard and the program will do the following operations: [4]

i. Check whether the string is palindrome or not.

ii. Arrange all alphabets of it in descending order.

(b) Explain any four methods of StringBuffer class with suitable example. [4]

4. (a) Write a java program that does binary to decimal and decimal to binary conversions. [4]

(b) Create an abstract class Account with the following details: [4]

Data Members: balance, accountNumber, accountHolderName, address

Methods: withdraw() - abstract, deposit() - abstract, display() to show the balance of the account number

Create subclass of this SavingAccount and add the following details:

Data Members: rateOfInterest

Methods: calculateAmount(), display() to display rate of interest with new balance and full account holder details

Create another subclass of the Account class, i.e. CurrentAccount with the following:

Data Members: overdraftLimit

Methods: display() to show overdraft limit along with the full account holder details

Create objects of these two classes and call their methods. Use appropriate constructors.

5. (a) Create a user-defined exception named CheckArgument to check the number of arguments passed through command line. If the number of arguments is less than four, throw the Check Argument exception, else print the addition of squares of all the four elements. [4]

(b) Implement a package Calculator which contains a class Number having data member value. Include appropriate constrcutors and a find_square() method which returns the squre of the value. Write an application class to evaluate an expression $1/1^2 + 1/2^2 + 1/3^2 + \text{--------} + 1/n^2$ by importing the [4]