**16) Write a program to illustrate types of constructors and constructor overloading?**

*class* q3

{

    q3()

    {

        System.out.println("Class a default constructor");

    }

    q3(int x)

    {

        System.out.println("class a parametric constructor with x value "+x);

    }

}

*class* Main

{

*public* *static* void main(String[] args)

    {

        q3 ob = new q3();

        q3 ob1 = new q3(5);

    }

}

**OUTPUT:**

Class q3 default constructor

class q3 parametric constructor with x value 5

**17A)WAP on method overloading?**

*class* Main

{

*static* void fun()

    {

        System.out.println("class Main method fun");

    }

*static* void fun(int x)

    {

        System.out.println("class Main method fun with x value="+x);

    }

*public* *static* void main(String[] args)

    {

        fun();

        fun(9);

    }

}

**OUTPUT:**

class Main method fun

class Main method fun with x value=9

**17B)WAP on run time polymorphism?**

*class* a

{

*public* void fun1()

    {

        System.out.println("class a method fun1");

    }

*public* void fun2()

    {

        System.out.println("class a method fun2");

    }

}

*class* b *extends* a

{

*public* void fun1()

    {

        System.out.println("class b method fun1");

    }

*public* void fun3()

    {

        System.out.println("class b method fun3");

    }

}

*class* Main

{

*public* *static* void main(String[] args)

    {

        a ob = new b();

        ob.fun1();

        ob.fun2();

    }

}

**OUTPUT:**

class b method fun1

class a method fun2

**18)WAP on static and this keyword?**

*class* a

{

*static* int n;

    a(int n)

    {

        this.n=n;

        System.out.println("n="+this.n);

    }

}

*class* Main

{

*public* *static* void main(String[] args)

    {

        new a(5);

    }

}

**OUTPUT:**

n=5

**19)WAP on class and object?**

*class* stu

{

    String name;

    int roll;

    String phone;

    stu(String name,int roll,String phone)

    {

        this.name=name;

        this.roll=roll;

        this.phone=phone;

    }

*public* void display()

    {

        System.out.println("name="+name);

        System.out.println("roll="+roll);

        System.out.println("phone="+phone);

    }

}

*class* Main

{

*public* *static* void main(String[] args)

    {

        stu ob = new stu("subbu",9,"8801640040");

        ob.display();

    }

}

**OUTPUT:**

name=subbu

roll=9

phone=8801640040

**20) Write a Java program to demonstrate the use of String class and its methods?**

*class* q4

{

    String s;

}

*class* Main

{

*public* *static* void main(String[] args)

    {

        q4 ob = new q4();

        ob.s="HelloWorld";

        System.out.println(ob.s.charAt(0));

        System.out.println(ob.s.length());

        System.out.println(ob.s.substring(0, 5));

        System.out.println(ob.s.indexOf("World"));

    }

}

**OUTPUT:**

H

10

Hello

5

**21) Write a program to illustrate String Tokenizer, Date, Random and Scanner classes?**

import *java.util.\**;

import *java.time.\**;

*public* *class* Main

{

*public* *static* void main(String args[])

    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a line:");

        StringTokenizer st1 = new StringTokenizer(sc.nextLine());

        System.out.println("StringTokenizer:");

        while (st1.hasMoreTokens())

        {

            System.out.println(st1.nextToken());

        }

        System.out.println("Date:");

        LocalDate ob = LocalDate.now();

        System.out.println(ob);

        System.out.println("Random:");

        Random r = new Random();

        System.out.println("Enter range of the random number:");

        System.out.println("Random number:"+r.nextInt(sc.nextInt()));

    }

}

**OUTPUT:**

Enter a line:

subbu from IT-A

StringTokenizer:

subbu

from

IT-A

Date:

2023-04-30

Random:

Enter range of the random number:

9

Random number:4