Iterative Constructs in Java

Subject -Computer Application

Class -X

Q1. What ia an infinite loop? Write an infinite loop statement.

Ans:- A loop that never ends its iterations is said to be an infinite loop or endless loop. Example

```
for(int I = 1; I > 0; i++)
{
    System.out.println(i);
}
```

Q2. Rewrite the following program segment using while instead of for statement.

```
int f = 1, i;
for ( i= 1 ; i <=6 ; i++)
{
        f *=i;
}
System.out.println(f);
```

Ans-

```
int f = 1, i;
i = 1;
while( i <=6 )
{
        f *=i;
        i++;
}
System.out.println(f);
```

Q3. Write the output of the following program code:

```
char ch;
int x=97;
do
{
ch = (char) x;
System.out.println(ch + "  ");
if( x % 10 == 0)
```

```
 break;
}
while(x <=100);
```

Ans-

a

b

c

d

Q4. Write a program in java to input a number and check whether it is a twisted prime or not.

(Twisted prime is a number which is prime and also the reverse of the number is prime)

Sample input:13

Sample output: 13, 31 both are prime

Thus 13 is a twisted prime.

Ans-

```
import java.util.*;
class Twistprime
{
   public static void main()
   {
      Scanner in=new Scanner(System.in);
      System.out.println("enter a numbere");
      int n,s,d,p,f=0,r=0,f1=0;
      n=in.nextInt();
     p=n;
     while(p>0)
     {
        d=p%10;
        r=r*10+d;
        p=p/10;
      }
      for(int i=2;i<n;i++)
        {
           if(n%i==0)
```

```
            {  f=1;
               break;
             }

          }
       for(int i=2;i<r;i++)
         {
            if(r%i==0)
            {  f1=1;
               break;
             }

          }
       if((f==0) && (f1==0))
       System.out.println("twisted prime no");
       else
       System.out.println("not a twisted prime no");
   }
}
```

Q5. Write a program in java to enter a number and check whether the nuber is special number or not.

(A number is said to be special , if the sum of the factorial of the digits is equal to the original number)

Sample input:145

Sample output: 1! + 4! + 5! = 145

Thus 145 is a special number.

Note:- Also known as smith number.

Ans:-

```
import java.util.*;
class Specialno
{
   public static void main()
   {
      Scanner in=new Scanner(System.in);
      System.out.println("enter a numbere");
```

```
    int n,s,d,p,f=1;
    n=in.nextInt();
    p=n;
    s=0;
    while(n>0)
      {
        d=n%10;
        while(d>0)
        {
           f=f*d;
           d=d-1;
         }
        s=s+f;
        f=1;
        n=n/10;
       }
    if(s==p)
    System.out.println("Specail no");
    else
    System.out.println("not a Special no");
  }
}
```

Notes: As I had discussed the different topics of class x in my uploaded videos. So you have to write notes Chapter wise and solve the given assignments in your Notebook.