Q. Find out the values of
1) left shift operator
2) Right shift operator
3) Bitwise complement operator
for the value of the last 4 digits of your roll number in 16 bit representation.

Sol:- Last 4 digits = 3028

In 16 bit representation =

"3028" = 0000101111010100

1) L.S.O

⇒ 0000101111010100

2) Right shift

⇒ 0000010111101010

3) Bit wise compliment operator

⇒ 1111010000101011

Q) Use oop concept to explain what is System.out.println() by reffering the most widely used console display stmt.

Sol:- The most widely used console statement in java for displaying a message/args/strings is
"System.out.println("...");

* In "System" is a class {pascal case} which

include many standard methods like, out, in.

* Out is an object of the 'print stream' class.
* Out has the println() and println() methods.
* Use '.' to access print()/println() methods.
* Out is inside system field.
* Use '.' to access out from system.

∴ System.out.println();

Q) Develop a complete program by implementing method recursion for printing numbers from n to 1 with step size 1; where n >2 and input is provided by user

```
import java.util.Scanner;
public class numprinting {
    public static int printing (int x) {
        if (x!=0){
            System.out.println(x);
            return printing (x-1);
        }
    else
    return 0;
    }
public static void main (String[] args){
    Scanner sc=new Scanner(System.in);
```

```
System.out.println("Enter num n(n>2)");
int n=Sc.nextInt();
while (n<=2) {
        System.out.println("Enter valid num");
        n=Sc.nextInt();
    }
printing(n);
Sc.close();
}
}
```

a) Using a.loop, draw shape of rectangle of size l & w. D is fance between each successive '*' can be assumed as a unit length.

Sol:

```
import java.util.Scanner;
public class Draw_rectangle{
    public static void main(String[] args){
        Scanner Sc=new Scanner(System.in);
        System.out.println("Enter 'l' length");
        int l= Sc.nextInt();
        System.out.println("Enter (w) width");
        int w = Sc.nextInt();
        int i,j;
        for (j=0; j<=w; j++){
            System.out.print("*");
```

```
for (i=0; i<l-1;i++){
    if(j==0){
        System.out.print("*");}
    else if(j==w){
        System.out.print("*");}
    else{
        System.out.print(" ");}
    }
    System.out.println("*");
  }
}
```

3) Prepare a program to determine the "length" of a given T-shirt size using switch case

A:

```
import java.util.Scanner;
public class t-shirt_size{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter size");
        String size=sc.nextLine();
```

```
Switch (size) {
    case "S": {
        System.out.println("length is 19 inches");
        break;
        }
    case "M": {
        System.out.println ("length is 20 inches");
        break;
        }
    case "L": {
        System.out.println("length is 21 inches");
        break;
        }
    case "XL": {
        System.out.println("length is 22 inches");
        break;
        }
    case "XXL": {
        System.out.println("length is 23 inches");
        break;
        }
    default:
        System.out.println("Enter valid size");
    }
    sc.close();
}
}
```