Approx time duration: 120 minutes

1 Study the following code and analyse which of the following statements are valid.

```
1. byte b1=12;
2. int x=b1;
3. b1=x;
4. byte b2=23;
5. byte b3=250;
6. float f1=3.14;
7. float f3=x;
8. float f4=b1;
9. char ch=49;
10. int x1=ch;
11.boolean bl1=12>3;
12. boolean bl2=x;
```

2
```
int x=-12;
System.out.println(Integer.toBinaryString(x));
int y=x>>2;
System.out.println(Integer.toBinaryString(y));
int z=x>>>2;
System.out.println(Integer.toBinaryString(z));
int p=x<<2;
System.out.println(Integer.toBinaryString(p));
System.out.println(x+" "+y+" "+z+" "+p);
/*output :
11111111111111111111111111110100
11111111111111111111111111111101
11111111111111111111111111111101
11111111111111111111111111010000
-12 -3 1073741821 -48*/
```

3 Understand the following code: guess the output.

a)
```
int x=10,y=5;
boolean z1=x++ > 12 && y-- < 10;
System.out.println(x+" "+y+" "+z1);
boolean z2=x++ > 12 & y-- < 10;
System.out.println(x+" "+y+" "+z2);
```

b)

```
for(int i=1;i<=5;i++)
 System.out.println(i);
 System.out.println(i);
```

c)

```
int x=12,y=25;
if(x>y)
        if(x>20)
        System.out.println("one");
else
System.out.println("two");
```

d)

```
        int x=13;
        if(x)
        System.out.println(x);
```

4 Write a java program that reads a series of names from the command line and prints them one by one.

5 Write a java program to read n numbers from the command line and prints the sum and average on the console, validate that the number of arguments should be minimum 2.

6 Write a java program by defining a method static Boolean isPrime(int n) that checks for a prime no and returns true or false. b using the above method complete the program to generate prime numbers from m to n where m and n are limits entered from command line

7 Write a java program to store 10 numbers , write a method findMax(int array[]) that returns the position of the maximum element.

8 Write a Program that reads total marks and names of n students from keyboard and prints the following:

a. A Topper's name and marks
b. B All students who have secured 1st class.

9

Complete the following program, resolve errors if any.

```
public class SearchDemo {

        public static void linearSearch(int a[],int n,int key)
        {
                for(int i=0;i<n;i++)
                {
                        if(a[i]==key)
                        {
                                System.out.println("key element found at position"+i);
                                System.exit(1);
                        }
                }
                System.out.println("element not found");
        }
        public static void main(String[] args) throws IOException {


                //……complete the code

}
}
```