

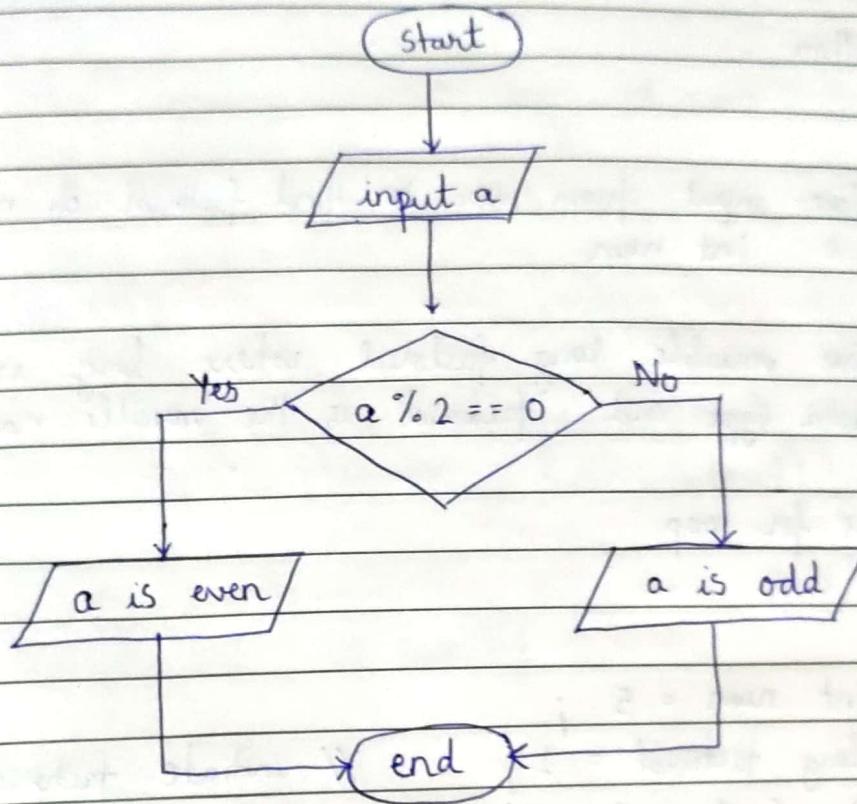
Assignment 1

Name : Rahul Mankar - KH

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Q.1. Check if the given number is EVEN or ODD.

Ans:



Flow chart

Q.2 Write a Java Program to find the Factorial of a given number.

Ans. Algorithm :

- 1) Take input from user to find factorial of number
i.e int num
- 2) Take variable long factorial where long is the data type and factorial is the variable name
- 3) Use for loop

```
int num = 5 ;
long factorial = 1; // initiate factorial with value
for (int i=1; i<=num; ++i)
{
    factorial = factorial * i;
}
System.out.println (" factorial is %.d", factorial);
```

Q.3 Find the Factorial of a number using Recursion.

Ans. Algorithm :

- 1) Take input from user say int num.
- 2) Take variable long factorial.
- 3) Using recursion.

```
main {  
    int num = 5;  
    long factorial = multiplynumb (num);  
    printf ("Factorial is %.d", factorial);  
}
```

```
multiplynumb (int num) {
```

```
    if (num >= 1)  
        return num * multiplynumb (num - 1);  
    else  
        return 1;  
}
```

Q.4 Swap two numbers without using the third variable

Ans. Algorithm :

- 1) Start
- 2) Take two variables a and b
- 3) Take input value from user and store them in a and b.
- 4) Add a and b and store the value in a.
i.e $a = a + b$
- 5) Now take the following step.
 $b = a - b$
- 6) $a = a - b$
- 7) Now print a and b
- 8) End

Q.5 How to check whether a given number is positive or Negative in JAVA.

Ans. Algorithm :

```

1) Start
2) Take variable a
3) Use if condition
   if (a > 0) {
      printf (" Number is positive");
   }
   else
      printf (" Number is negative");
4) end

```

Q.6 Write a Java program to find whether a given number is leap year or not.

Ans. Algorithm :

```

1) Start
2) Take input from user of integer data type
   i.e int year
3) Use if condition
   if (year % 4 && year % 100) {
      printf (" Year is a leap year");
   }
   else
      printf (" Year is not a leap year");
4) end

```

Q. 7 write a Java program to print 1 to 10 without using loop.

Ans. Code:

```
public class noloop1 {  
    public static void noloop (int n) {  
        if (n <= 10) {  
            sout (n);  
            noloop (n+1);  
        }  
    }  
    public static void main (String [] args) {  
        noloop1. noloop (1);  
    }  
}
```

Q. 8 Write a Java program to print the digits of a given number.

Ans. Code:

```
import java.util.Scanner;
public class Pprintdigit {
    psum (String [ ] args) {
        int n, temp, digit, count = 0;
        Scanner sc = new Scanner (System.in);
        Sout ("Enter any number :");
        n = sc.nextInt();
        temp = n;
        while (n > 0) {
            n = n/10;
            count++;
        }
        while (temp > 0)
        {
            digit = temp%10;
            Sout ("Digit at place " + count + " is : " + digit);
            temp = temp/10;
            count--;
        }
    }
}
```

Q. 9 Write a Java program to print all the factors of a given number.

Ans. Code :

```
public class Factors {  
    public static void main (String [] args) {  
        int number = 10;  
        System.out.print ("Factors of " + number + " are : ");  
        for (int i = 1 ; (i <= number) ; ++i) {  
            if (number % i == 0) {  
                System.out.print (i + " ");  
            }  
        }  
    }  
}
```

Q. 10

Ans.

Q.10 Write a Java program to print off the sum of the digits of a given number.

Ans. Code :

```
import java.util.Scanner;  
class digitsum {  
    public static void main (String [ ] args) {  
        int n, temp, digit, sum = 0;  
        Scanner sc = new Scanner (System.in);  
        n = sc.nextInt();  
        temp = n;  
        while (temp > 0) {  
            digit = temp % 10;  
            sum = sum + digit;  
            temp = temp / 10;  
        }  
        System.out.println ("The sum is " + " " + sum);  
    }  
}
```

B-11 Write a Java program to find the smallest of 3 numbers.

Ans. import java.util.Scanner;

```

class greatestnum {
    public static void main (String [ ] args) {
        System.out.println ("Enter the three numbers to be compared");
        Scanner sc = new Scanner (System.in);
        int a = sc.nextInt();
        int b = sc.nextInt();
        int c = sc.nextInt();

        if ((a > b) && (a > c))
            System.out.println ("a+ " is the greatest");
        else if ((b > a) && (b > c))
            System.out.println ("b+ " is the greatest");
        else
            System.out.println ("c+ " is the greatest");
    }
}

```

Q.12 How to add two numbers without using the arithmetic operators in Java?

Ans. Code :

```
class Add {
```

```
    static int add (int a, int b)
```

```
{
```

```
    for (int i = 1; i <= b; i++)
```

```
        a++;
```

```
    return a;
```

```
}
```

```
public static void main (String [ ] args) {
```

```
    int a = add (10, 20);
```

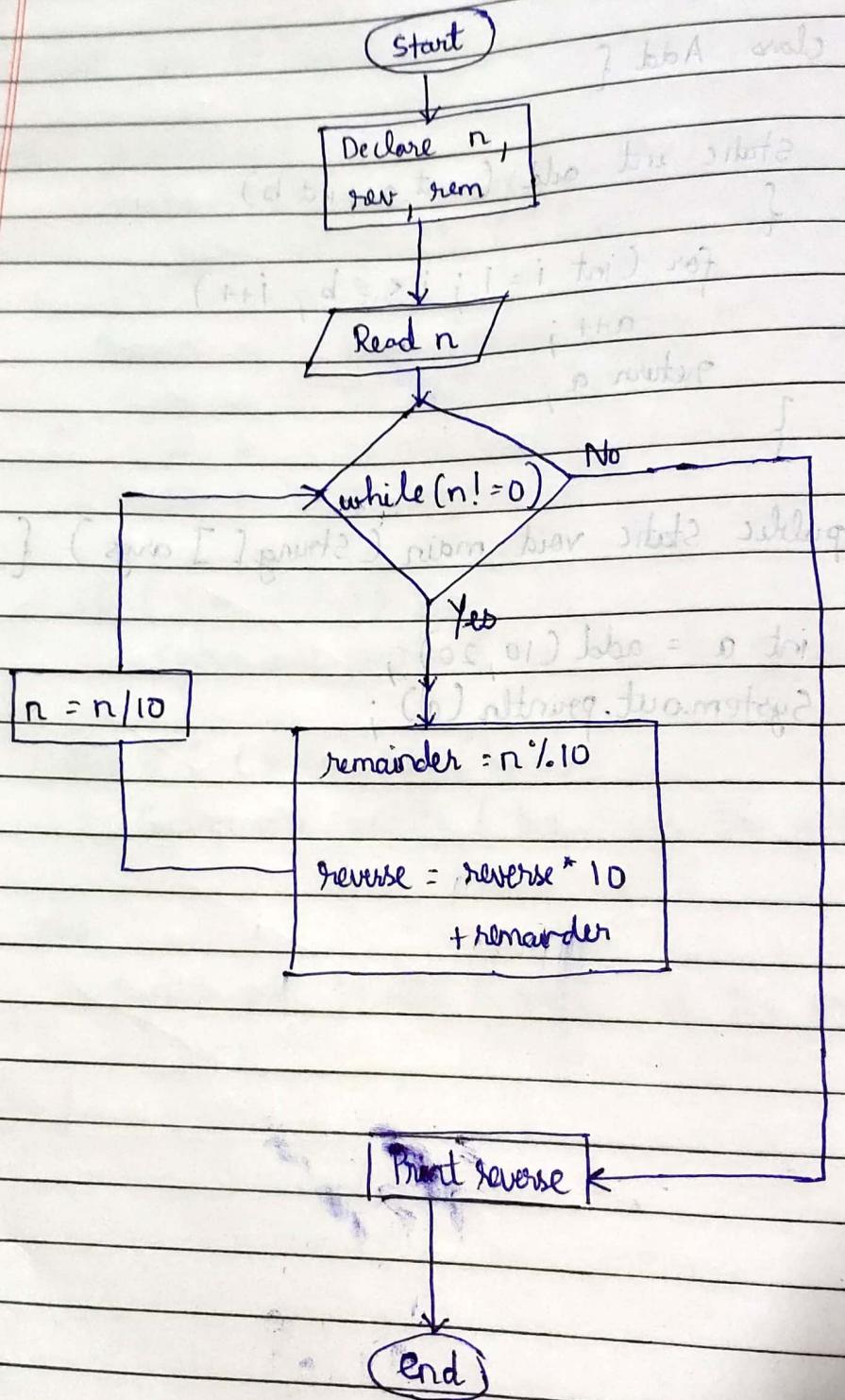
```
    System.out.println (a);
```

```
}
```

```
}
```

Q.13 Write a java program to Reverse a given number.

Ans. Code: Flowchart:



Q.14

Ans. Alg.

Q.15

Ans.

Q.14 Write a Java program to find GCD of two given numbers.

Ans. Algorithm : Step 1 : Start

Step 2 : Declare variable n1, n2, gcd = 1, i = 1

Step 3 : Input n1 and n2

Step 4 : Repeat until i <= n1 and i <= n2

If n2 % i == 0 & & n2 % i == 0
gcd = i

Step 5 : print gcd

Step 6 : stop

Flowchart :

Q.15 Write a java program to find LCM of two given numbers.

Ans. Algorithm : Step 1 : start

Step 2 : Declare variable n1, n2, gcd = 1, i = 1;

Step 3 : Input n1 and n2;

Step 4 : Repeat until i <= n1 and i <= n2

If n1 % i == 0 & n2 % i == 0
gcd = i

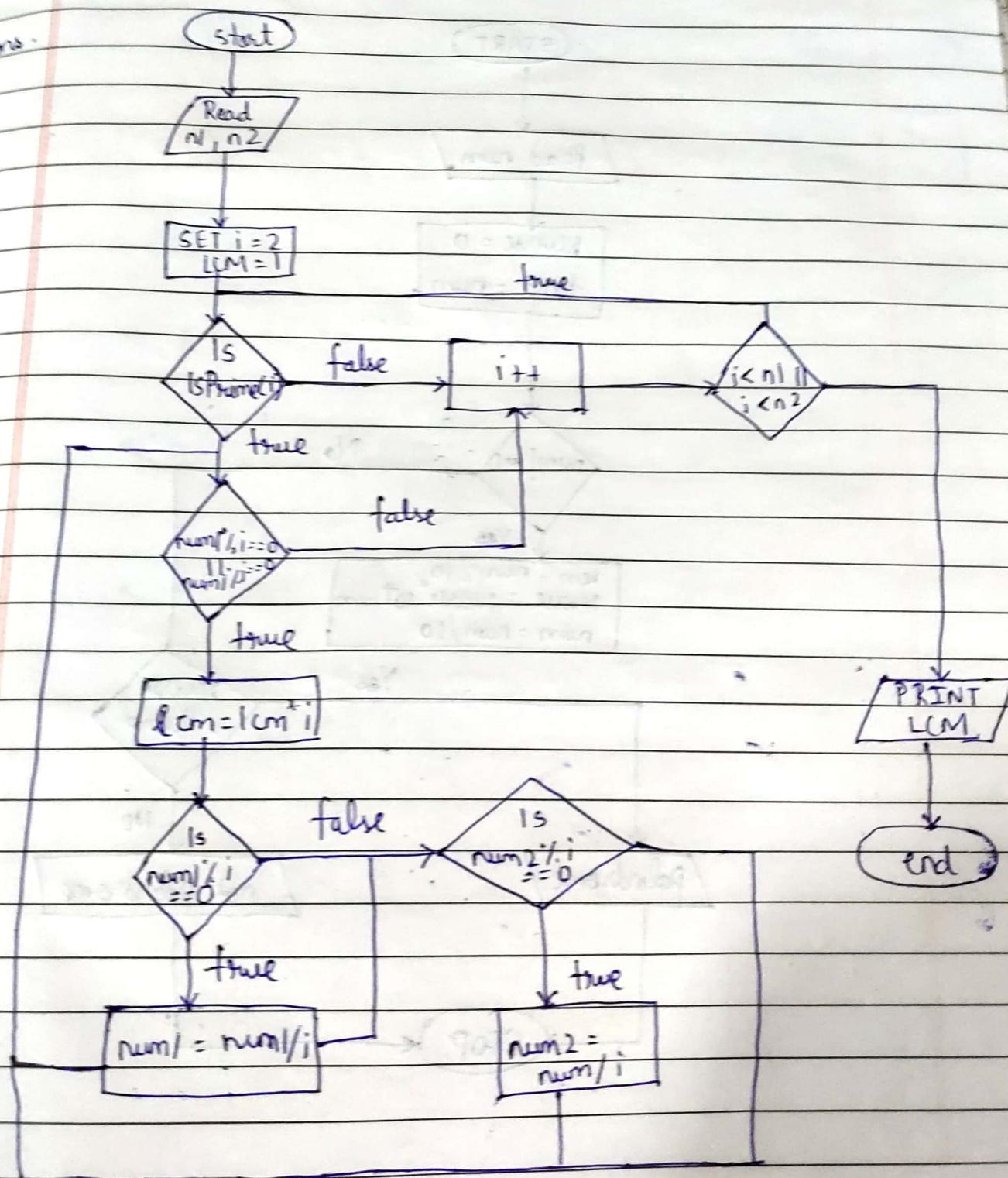
Step 5 : Declare and define lcm

lcm = n1 * n2 / gcd ;

Step 6 : print lcm

Q.16 Write a Java program to find LCM of two given numbers using the prime factors method.

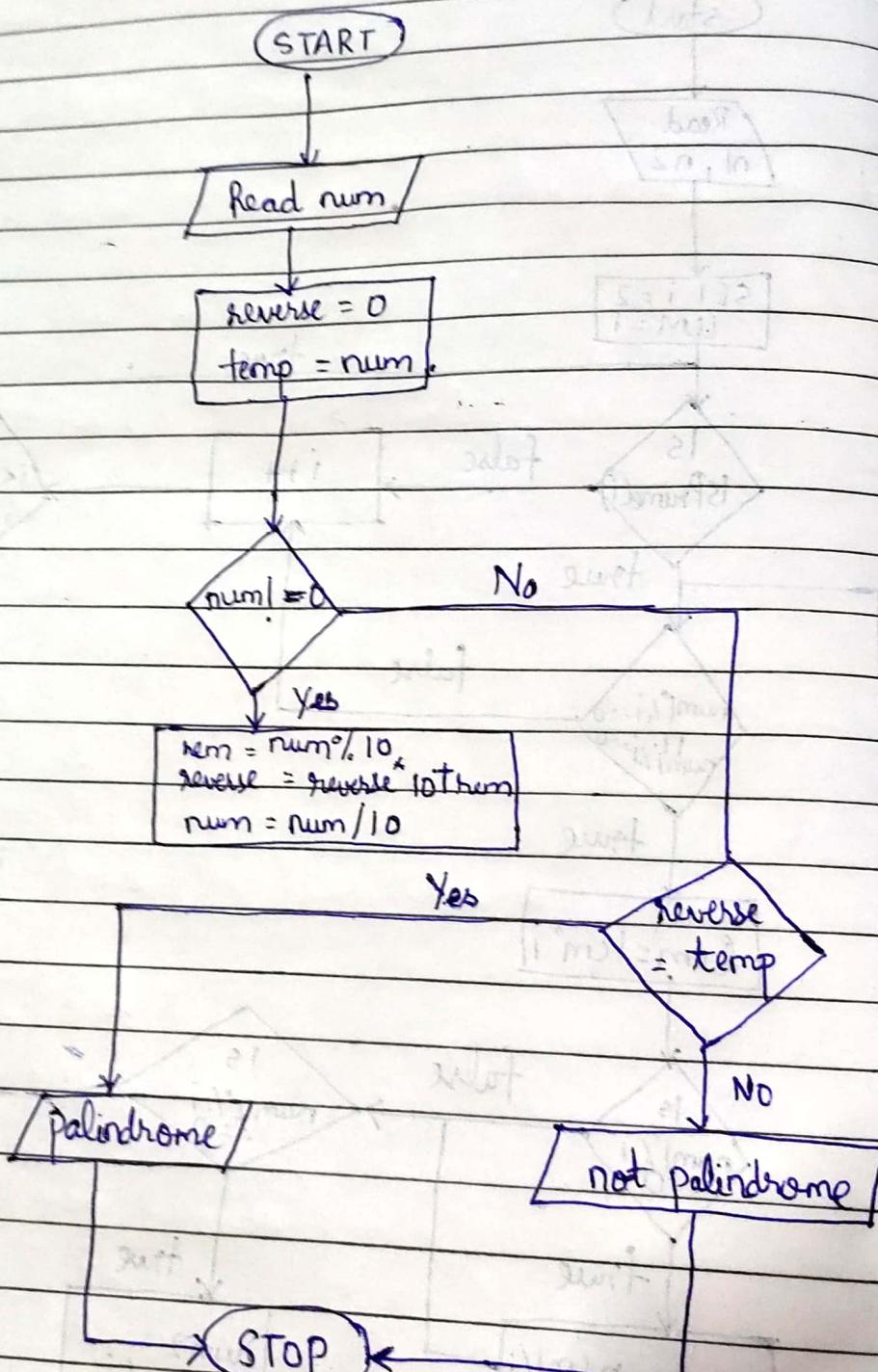
Ans:-



Q. 17

Check whether the given number is palindrome or not.

Ans.



Q. 18

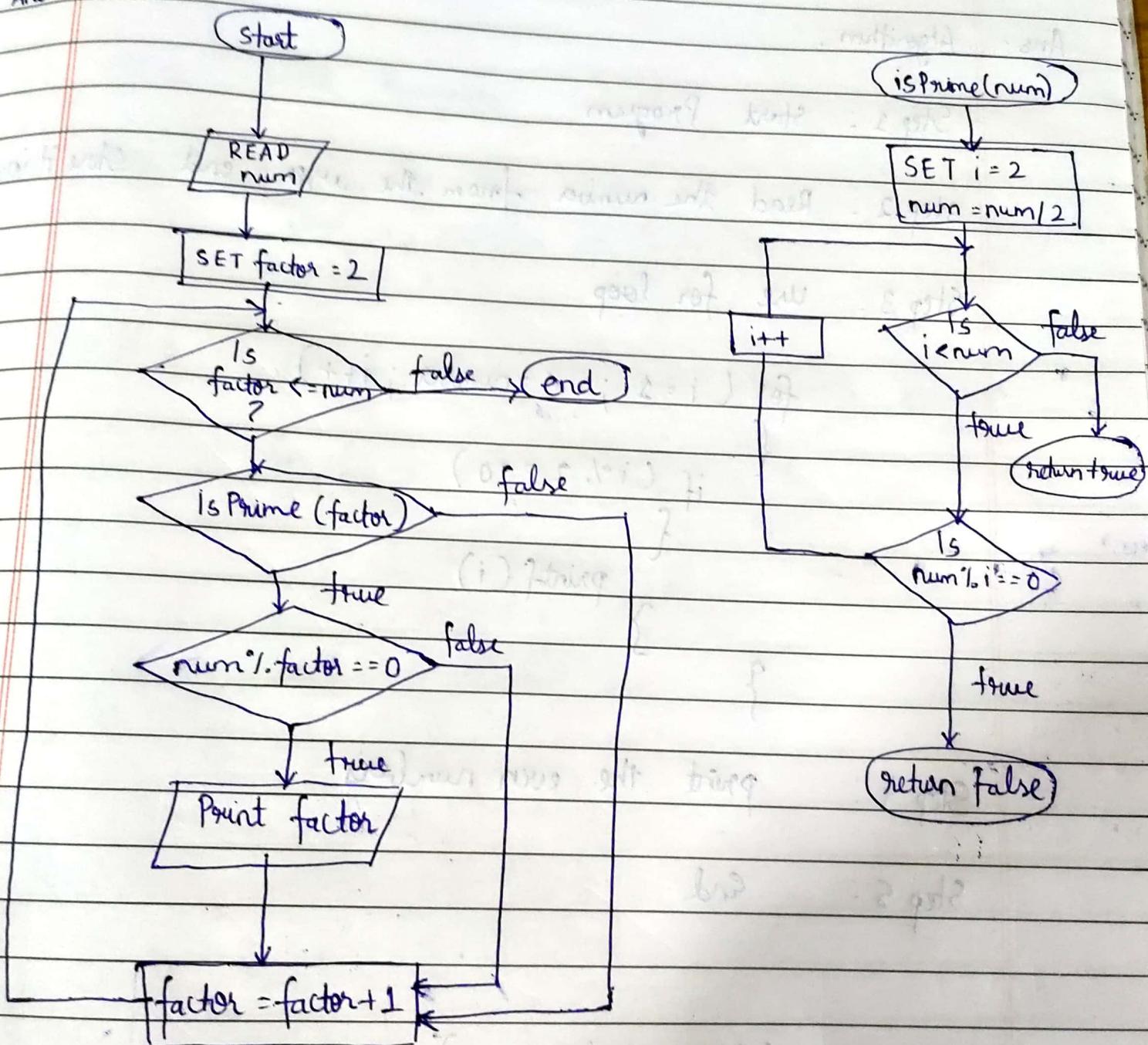
Ans.

(Ans.)

loop
n, n507123
12370521
converted100
is 100100
is 100100
is 100100
is 100

Q.18 Write a Java Program to print all the Prime Factors of a given Number.

Ans.



G.19 To print the following series: EVEN number series

Bz: 20

Ans. Algorithm:

Step 1: Start Program

Step 2: Read the number from the user and store it in a variable.

Step 3: Use for loop

```
for (i = 1; i <= number; i++)  
{  
    if (i % 2 == 0)  
    {  
        printf(i)  
    }  
}
```

Step 4: print the even numbers

Step 5: end

OUTPUT (Say number = 10)

2
4
6
8
0

Q. 20 To print the odd number series.

Ans. Algorithm :

Step 1 : Start Program

Step 2 : Read number from user

Take i, number as variables
Initialize i = 1.

Step 3 : Use for loop to print the odd numbers.

```
for (i=1; i <= number; i++)  
{  
    if (i%2 != 0)  
    {  
        print(i)  
    }  
}
```

Step 4 : print odd numbers

Step 5 : End

OUTPUT (Say number = 12)

1
3
5
7
9
11