Flow chart

Q. No-1:-

```
        Start
          |
          v
   /Enter a number/
          |
          v
        / .9f \
       / number %.2=0 \
        \            /
   yes  \          / No
    |                   |
    v                   v
/Print even/       /Print odd/
    |                   |
    +--------+----------+
             |
             v
          Stop
```

Q. No-2:-

```
        Start
          |
          v
   / Enter  a  number /
          |
          v
   | 1=9, fact=1 |
          |
          v
        / 9f \
       / i<=n \      No
        \    /  -------------+
   yes   \  /                |
    |                        v
    v                  /Print fact/
| Fact=fact * i |           |
    |                       v
    v                     Stop
| 1 = 1+1 |
```
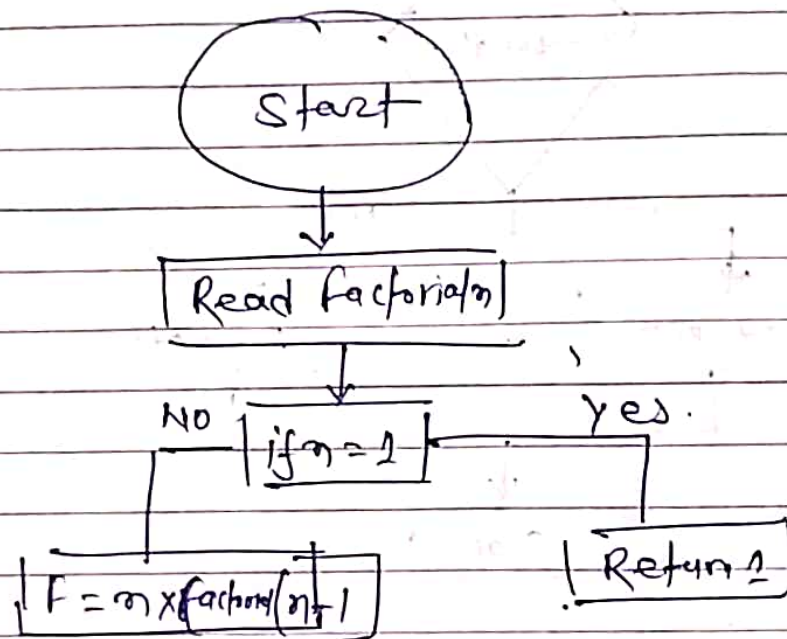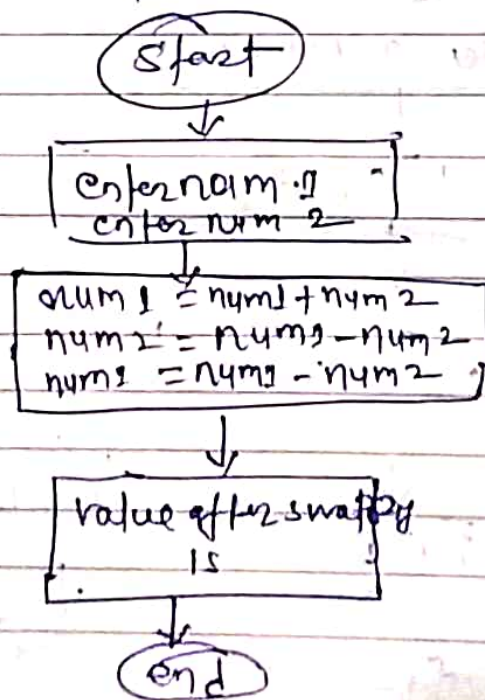
Q.3   find the factorial of no using Recursion.

         Step-1 - Start
         Step-2 - Read no 'n'.
         Step-3 :- call factorial (n)
         step-4 :- print factorial F
         step-5 - stop

```
        ( Start )
            |
            v
    [ Read factorial n ]
            |
            v
   NO   [ if n = 1 ]   yes
   |                    |
   v                    v
[ F = n x factorial(n-1) ]   [ Return 1 ]
```

Q No-4 :- Swap two nos. without using third variable approach

```
        ( Start )
            |
            v
    [ enter num 1
      enter num 2 ]
            |
            v
    [ num 1 = num1 + num 2
      num 2 = num1 - num 2
      num1 = num1 - num 2 ]
            |
            v
    [ value after swapp
          is        ]
            |
            v
        ( end )
```

Q.No-5 - How to check whether the given no is +ve or -ve.

Start

enter the no

a > 0 — No

Yes

Positive   negative

end
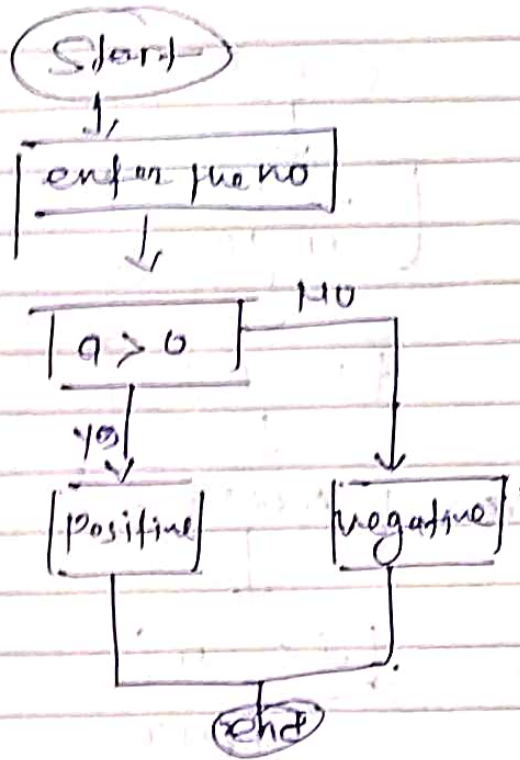
Q.No-6 Write a java program to find whether a given no is leap year or not.

→

Start

Enter year

a %.4 = 0 — false

True

year is leap   Not a leap

end
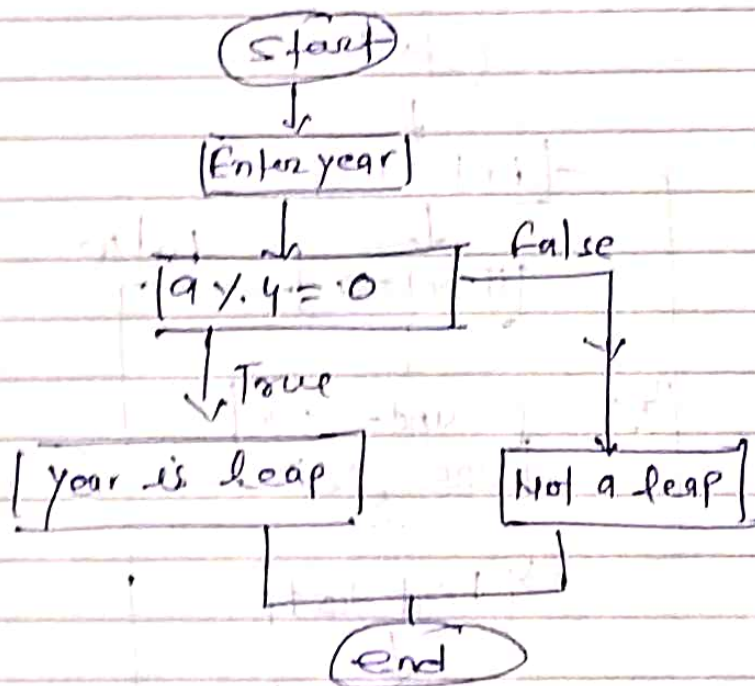
Q·No-7 Write a java program to print 1 to 20 without using loop.

Start

$i = 1$
$N = 10$

Print P

yes   Add 1 to i

$i <= N$

false

End
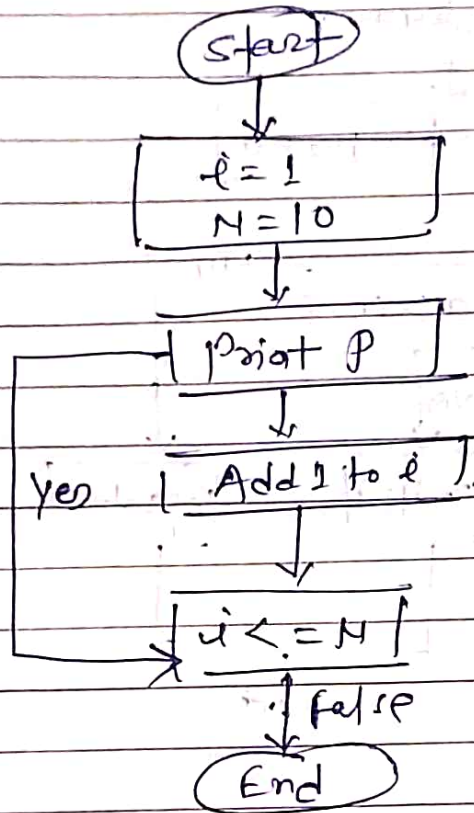
Q·No-8 Print the digit of a given number.

Start

Enter No

if no! = 0 ———— false

or

True

digit = no % 10
no = no / 10

Print digit

Stop
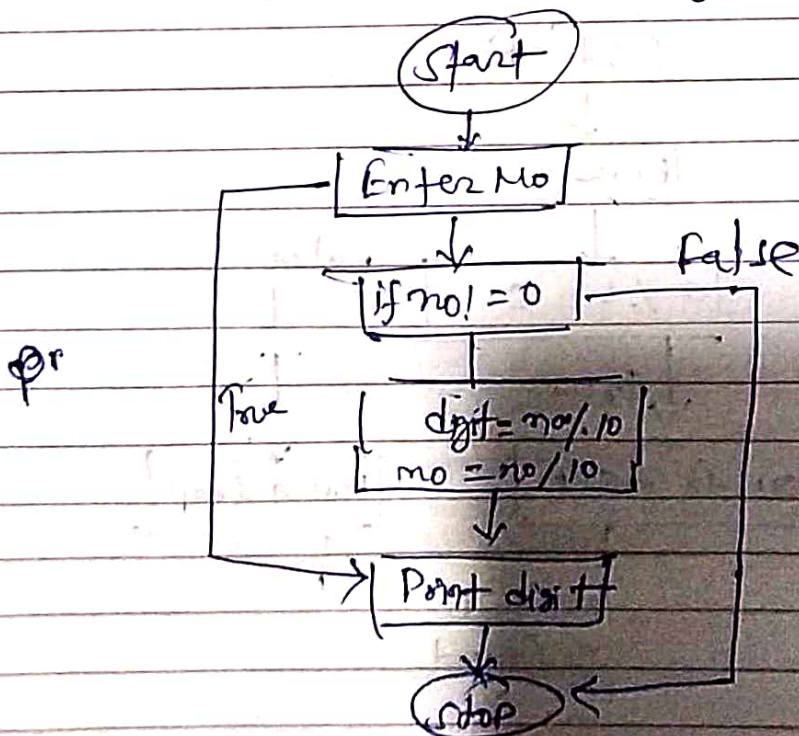
Q. No-9 WAP to find all factors of given no.

```
                    ( Start )
                        |
              +-------------------+
              |    int n          |
              |    int i          |
              +-------------------+
                        |
                 [ Read n ]
                        |
                     / for \           NO
                    < i=1 to i<=n >-----------+
            +--------\       /                |
            |          \   /                  |
      [ i = i+1 ]        |                     |
            |     NO     |                     |
            +---->  [ if n%i==0 ]              |
                        |                      |
                   [ Print i ]                 |
                        |                      |
                        +----------------------+
                     ( End )
```
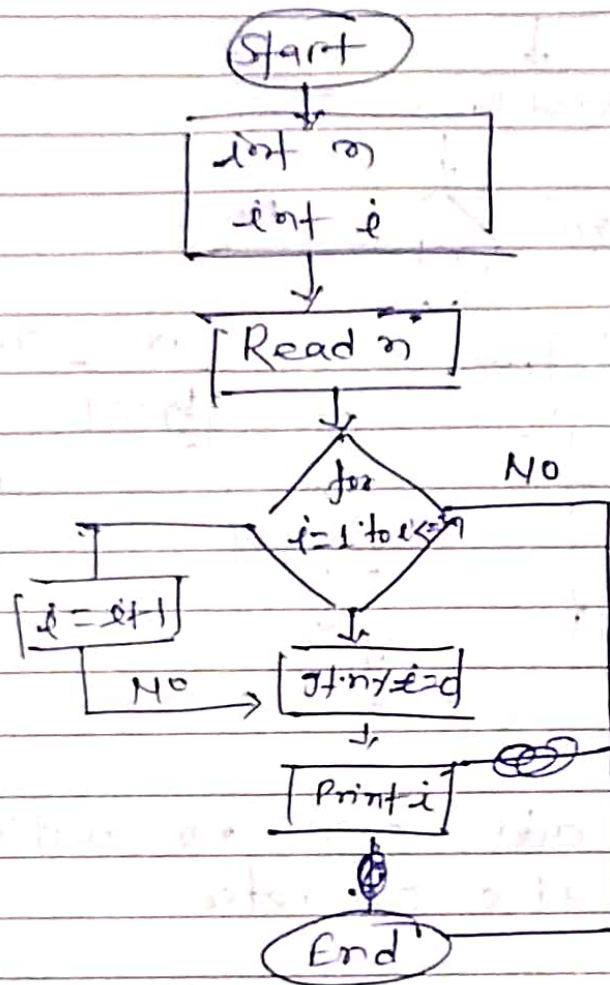
WAP to find Sum of digits of given number.

Q. No-10

```
              ( Start )
                  |
         [ Read 1 or go ]
                  |
         [ Set sum = 0 ]
                  |
          Yes  [ n>0 ]  NO
        +----|       |----+
        |                 |
 [ sum=sum+n%10 ]    [ Print sum ]
 [ n=n/10 ]               |
                          |
                      [ Stop ]
```
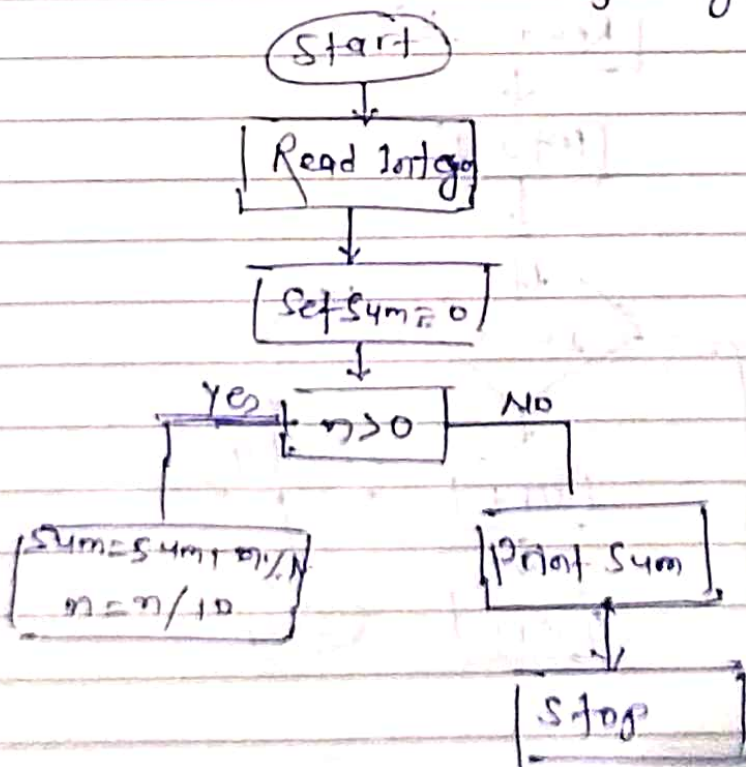
(11) WAP to find smallest of three no (a, b, c)

Start

Read three num a, b, c

a<b

yes

NO

a<c

yes

NO

Print a is smaller

print c is smaller

b<c

NO

yes

c is smallest

b is smallest

End
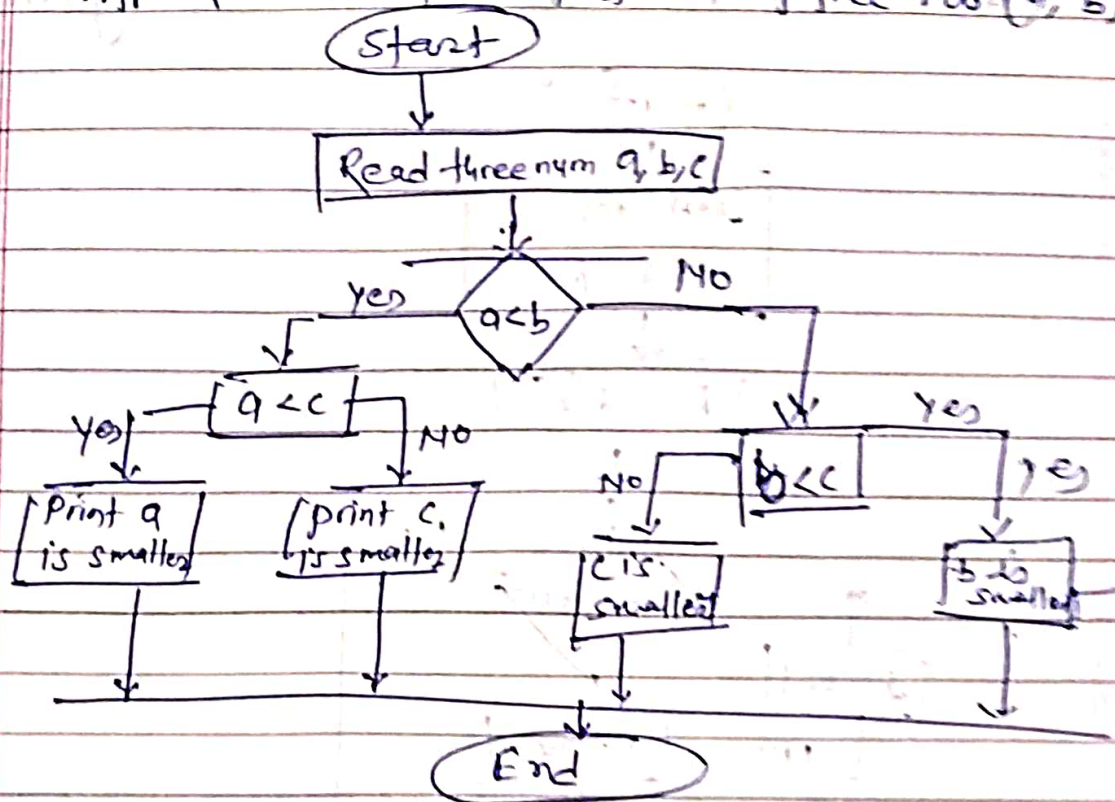
(12) WAP to add two no without using arithmetic operator.

Start

Read a, b

int c, d

c<=b

NO

a[ ]

c[ ]

Print a

Stop
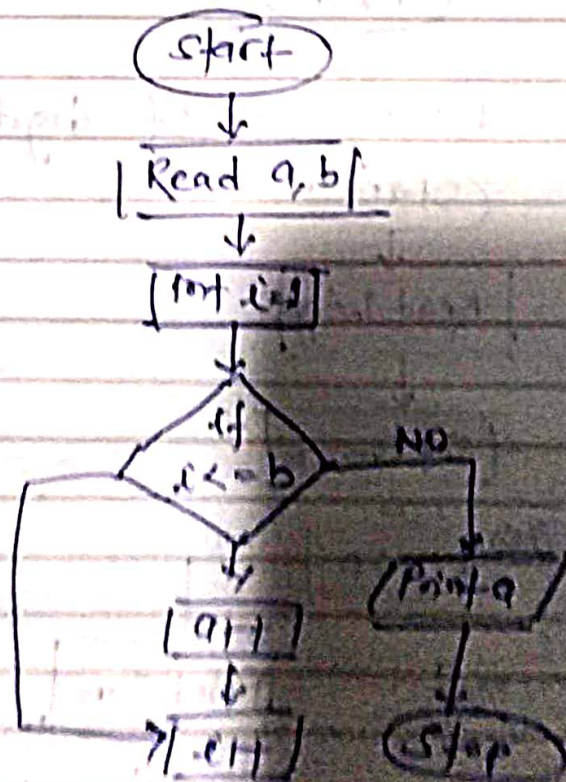
(13)   WAP to print reverse of given no.

```
                      ┌─────────┐
                      │  Start  │
                      └────┬────┘
                           ↓
              ┌──────────────────────────┐
              │ Declare n reverse=0      │
              │ remainder=0              │
              └────────────┬─────────────┘
                           ↓
                   ┌──────────────┐
                   │   Read n     │
                   └──────┬───────┘
                          ↓
              ┌────────────────────┐
              │  while n!≠0        │─────────────┐
              └─────────┬──────────┘             │
                        │ yes                    │ No
              ┌─────────────────────────┐        │
              │ remainder = n % 10      │        │
              │ reverse = rev×10+r      │        │
              │ n = n/10                │        │
              └─────────────────────────┘        │
                                                 │
              ┌──────────────────┐               │
              │  Print reverse   │◄──────────────┘
              └────────┬─────────┘
                       ↓
                 ┌──────────┐
                 │   Stop   │
                 └──────────┘
```
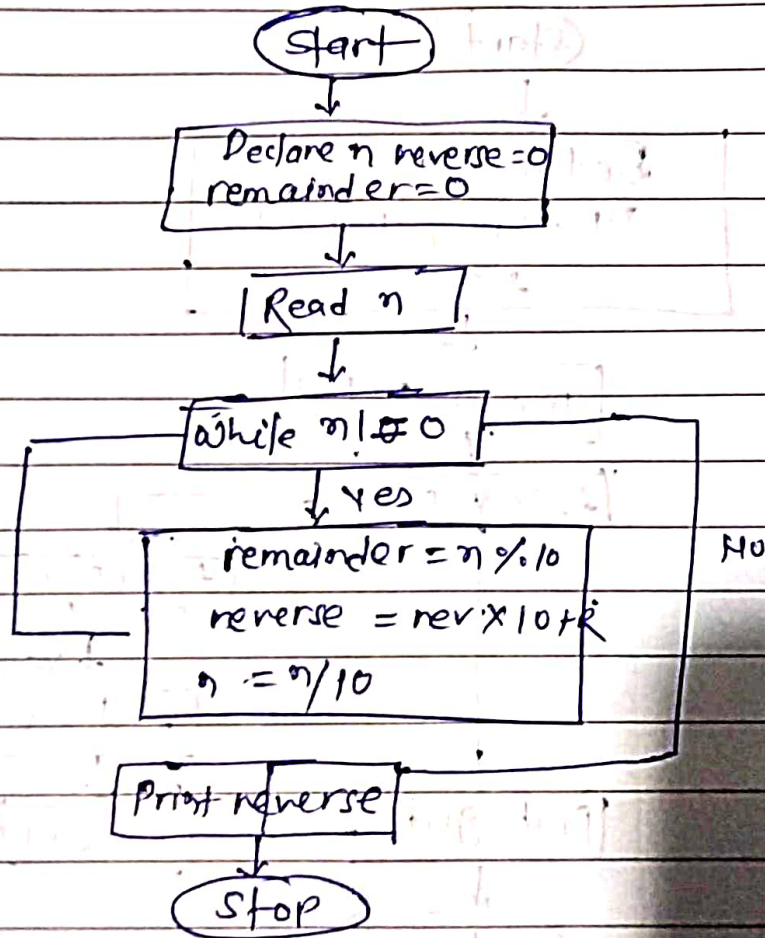
14. WAP to find GCD of given no.

```
                    ( Start )
                        |
                        v
            +-----------------------+
            |   Declare variable    |
            |   n1, n2, gcd = 1     |
            |         i = 1         |
            +-----------------------+
                        |
                        v
            +-----------------------+
            |    input n1 & n2      |
            +-----------------------+
                        |
                        v
            +-----------------------+
            |  i ≤ n1 & i ≤ n2      |----------------+
            +-----------------------+                |
                        |                            v
                        |            +-----------------------+
                        |            |  if n1 %i = 0 &        |
                        |            |     n2 % i = = 0       |
                        |            +-----------------------+
                        |                        | yes
                        |                        v
                        |            +-----------------------+
                        |            |       gcd = i         |
                        |            +-----------------------+
                        |                        |
                        v                        v
            +-----------------+      +-----------------+
            |   Print gcd     |<-----|   i = i+1       |<---+
            +-----------------+      +-----------------+
                        |
                        v
                    ( Stop )
```
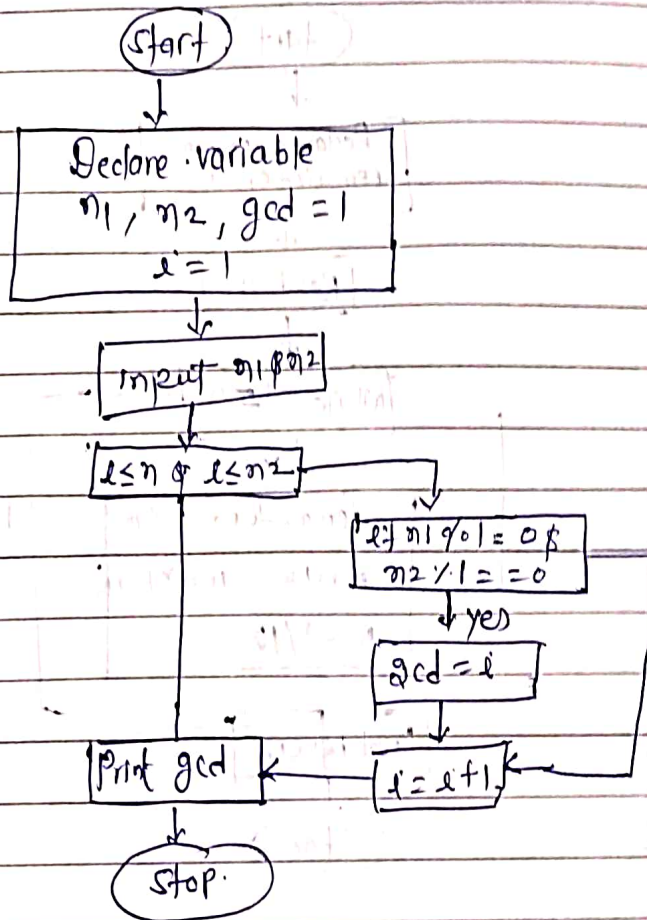
⑮ WAP to print LCM of 2 number.

```
                    ( Start )
                        |
                        v
            +-----------------------+
            |     input a, b        |
            +-----------------------+
                        |
                        v
            +-----------------------+
        +-->|   Lcm = max (a, b)    |
        |   +-----------------------+
        |               |
        |               v
        |   +-----------------------+    yes
        |   |  if Lcm % a = 0 &&    |--------+
        |   |     Lcm % b = = 0     |        |
        |   +-----------------------+        |
        |               | No                 v
        |               v           +-----------------+
        |   +-----------------+     |    O/P = Lcm    |
        +---|   Lcm = Lcm+1   |     +-----------------+
            +-----------------+              |
                                            v
                                        ( Stop )
```

(16) Check whether give number is paliodrom or not.

```
                    ( Start )
                        |
                        v
                 [ Read num ]
                        |
                        v
              [ Reverse = 0      ]
              [ temp num = num   ]
                        |
                        v
                   / num != 0 \ ------> NO -------+
                   \          /                   |
                        |                          |
                       yes                         v
              / sum = num % 10        \    [ Reverse=temp ]
              | reverse = rev x 10+rev |         |
              \ num = num % 10        /          | NO
                        |                          v
                        |              [ Not a palindron ]
                        v
                 [ palindrom ]
                        |
                        v
                    ( Stop )
```
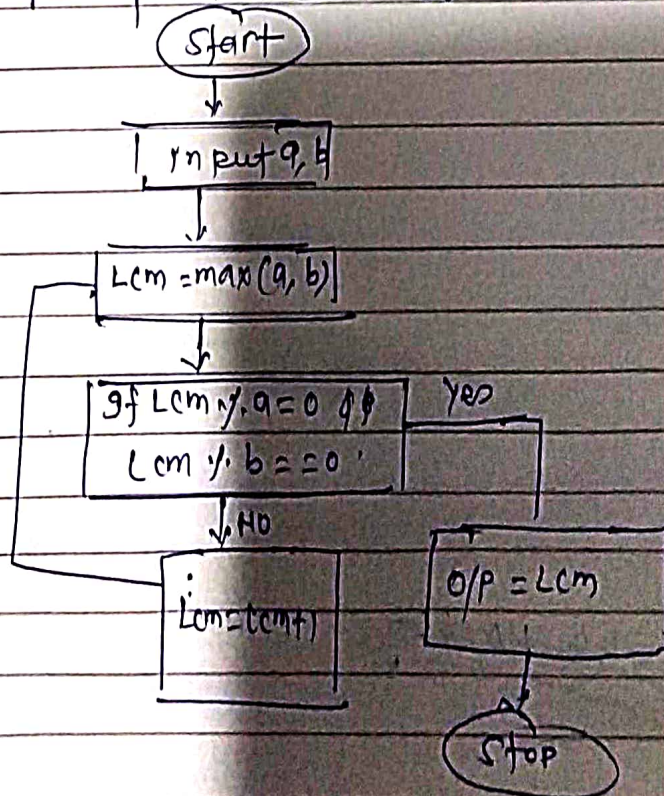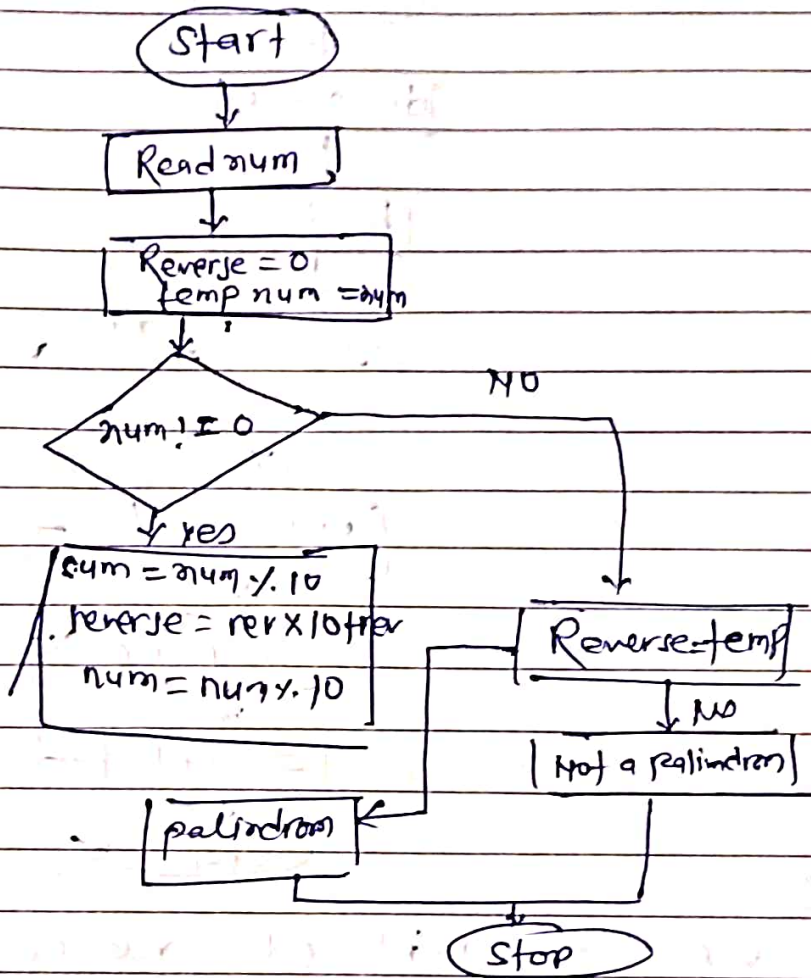
(17) WAP to print prime factor of all given no.

```
              ( Start )
                  |
                  v
            [ Read num ]
                  |
                  v
            [ int i = 2 ]
                  |
                  v
            [ num > 1 ]
             |       ^
             v       |
          / if \   [ i+1 ]
          \num%i=0/
             |
             v
          [ Print i ]
             |
             v
          ( Stop )
```
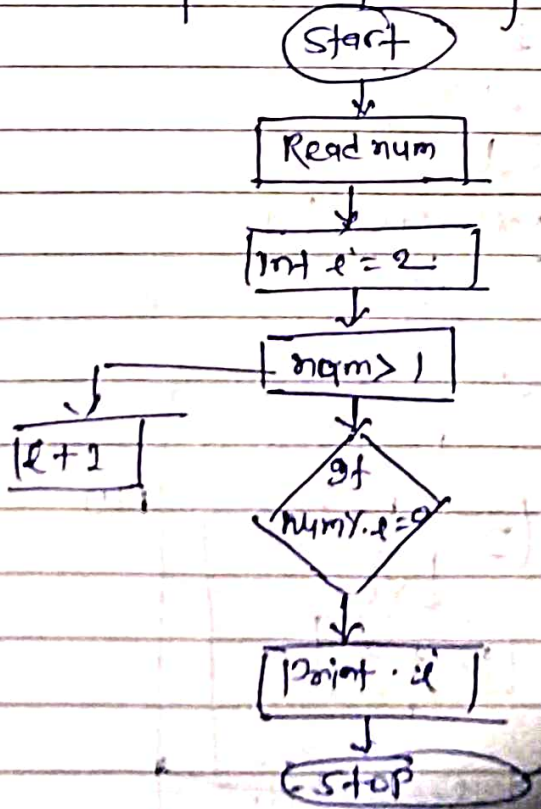
(19) WAP to print the even number series

```
        ( Start )
            ↓
      [ declare i ]
            ↓
      [ Read n ]
            ↓              no
        < i ≤ n >  ─────────────┐
            ↓ yes               │
      [ i % 2 = 0 ] ──────┐     │
            ↓             │     │
      [ yes print yes ]   │     │
            ↓             │     │
      [ i = i+1 ] ────────┘     │
            ↓                    │
        ( Stop ) ←───────────────┘
```
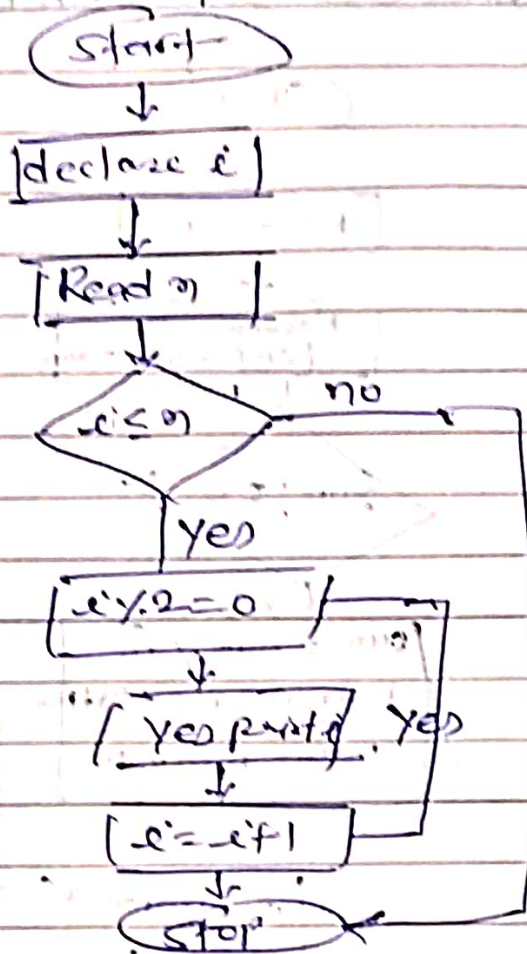
(20) WAP to print odd no series.

```
        ( start )
            ↓
      [ Read n ]
            ↓
      [ initialize i ]
            ↓
        < i ≤ n >  ─────────────┐
            ↓                    │  NO
      [ i % 2 = 1 = 0 ]          │
            ↓ yes                │
      [ Print i ]                │
            ↓                    │
      [ i = i+1 ] ←──────────────┘
            ↓
        else
```