Assignment 1

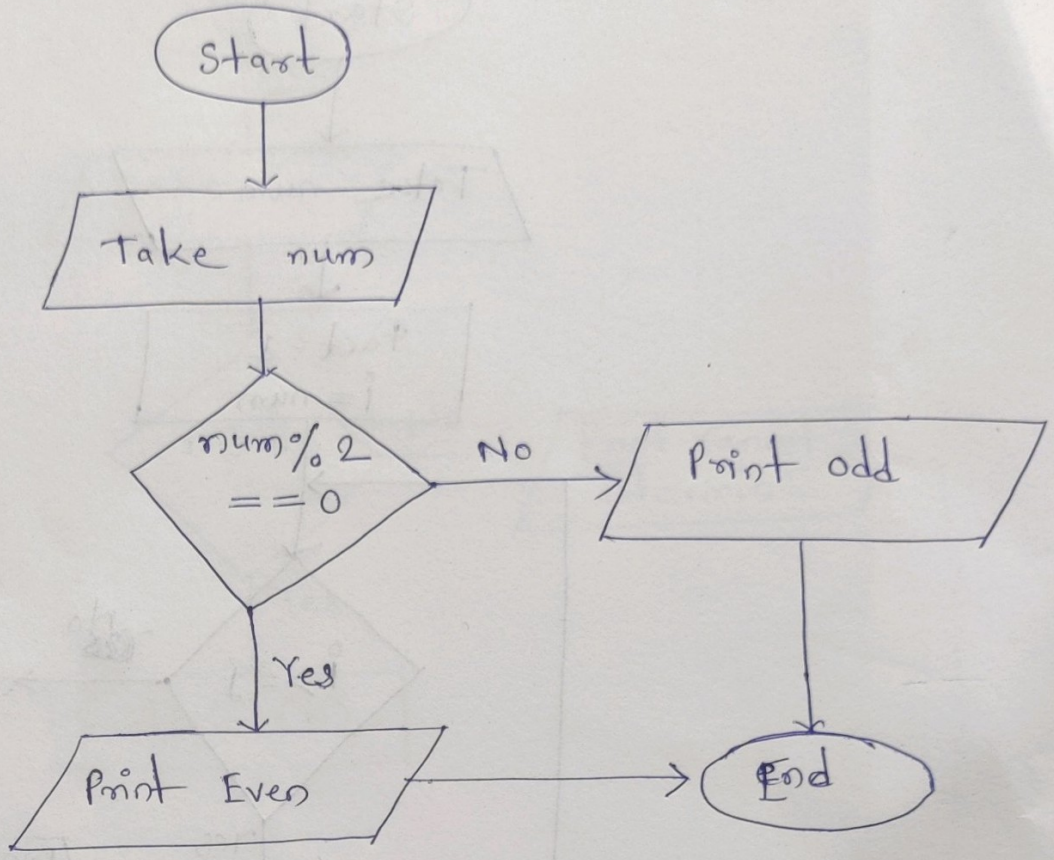
Date: 07.09.2022

Submission date: 12.09.2022

Write Algorithm & Flowchart for the following programs.

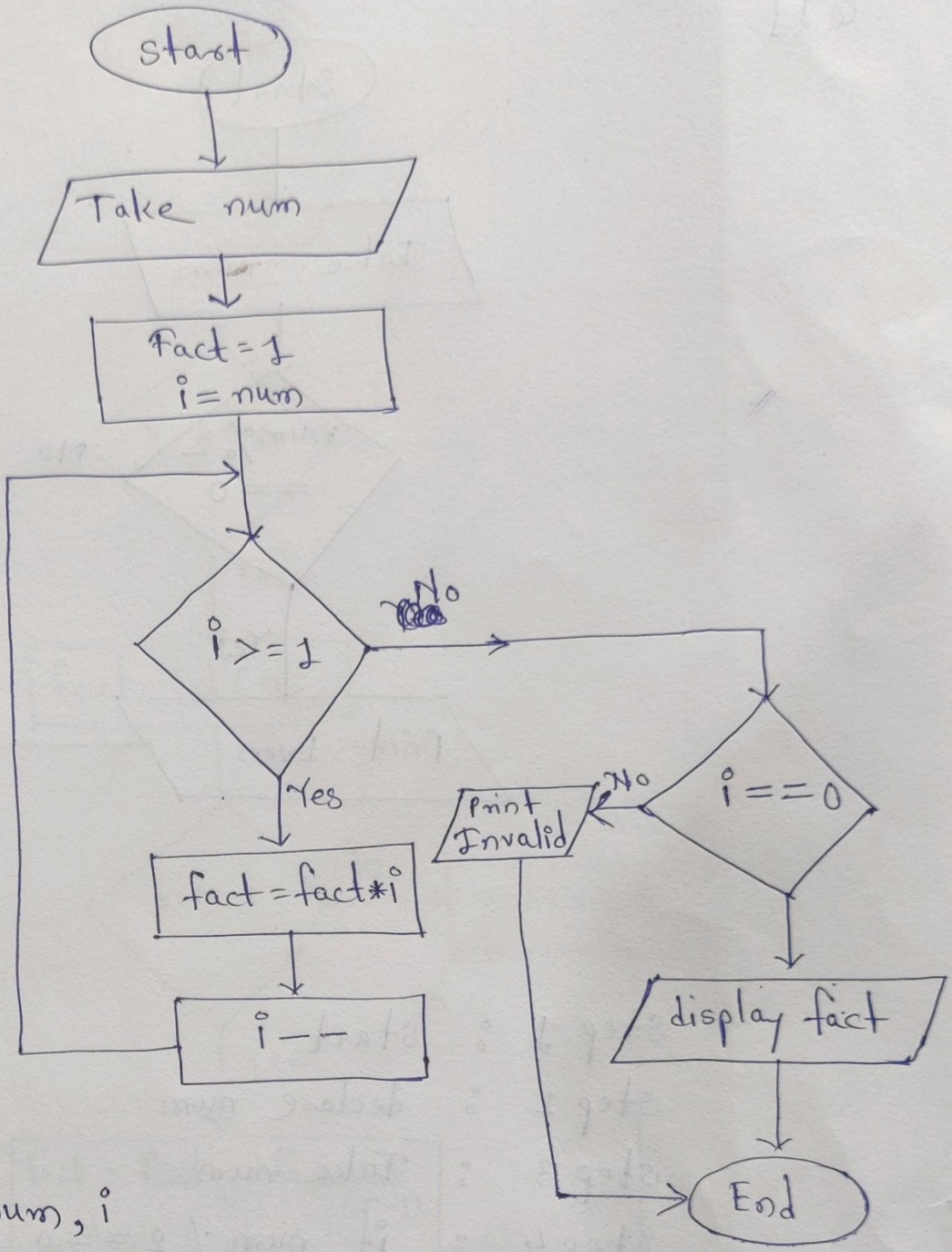
1. Check if the given number is EVEN or ODD.
2. Write a Java Program to find the Factorial of a given number.
3. Find the Factorial of a number using Recursion.
4. Swap two numbers without using the third variable approach.
5. How to check whether the given number is Positive or Negative in Java?
6. Write a Java Program to find whether a given number is Leap year or NOT.
7. Write a Java Program to Print 1 To 10 Without Using Loop.
8. Write a Java Program to print the digits of a Given Number.
9. Write a Java Program to print all the Factors of the Given number.
10. Write a Java Program to find the sum of the digits of a given number.
11. Write a Java Program to find the smallest of 3 numbers (a,b,c)
12. How to add two numbers without using the arithmetic operators in Java?
13. Write a java program to Reverse a given number.
14. Write a Java Program to find the GCD of two given numbers.
15. Write a java program to LCM of TWO given numbers.
16. Write a java program to LCM of TWO given numbers using the Prime Factors method.
17. Check whether the Given Number is a Palindrome or NOT.
18. Write a Java Program to print all the Prime Factors of the Given Number.
19. To print the following series EVEN number Series 2 4 6 8 10 12 14 16 .....
20. To print the following series ODD number Series 1 3 5 7 9 11 13...

Q1]



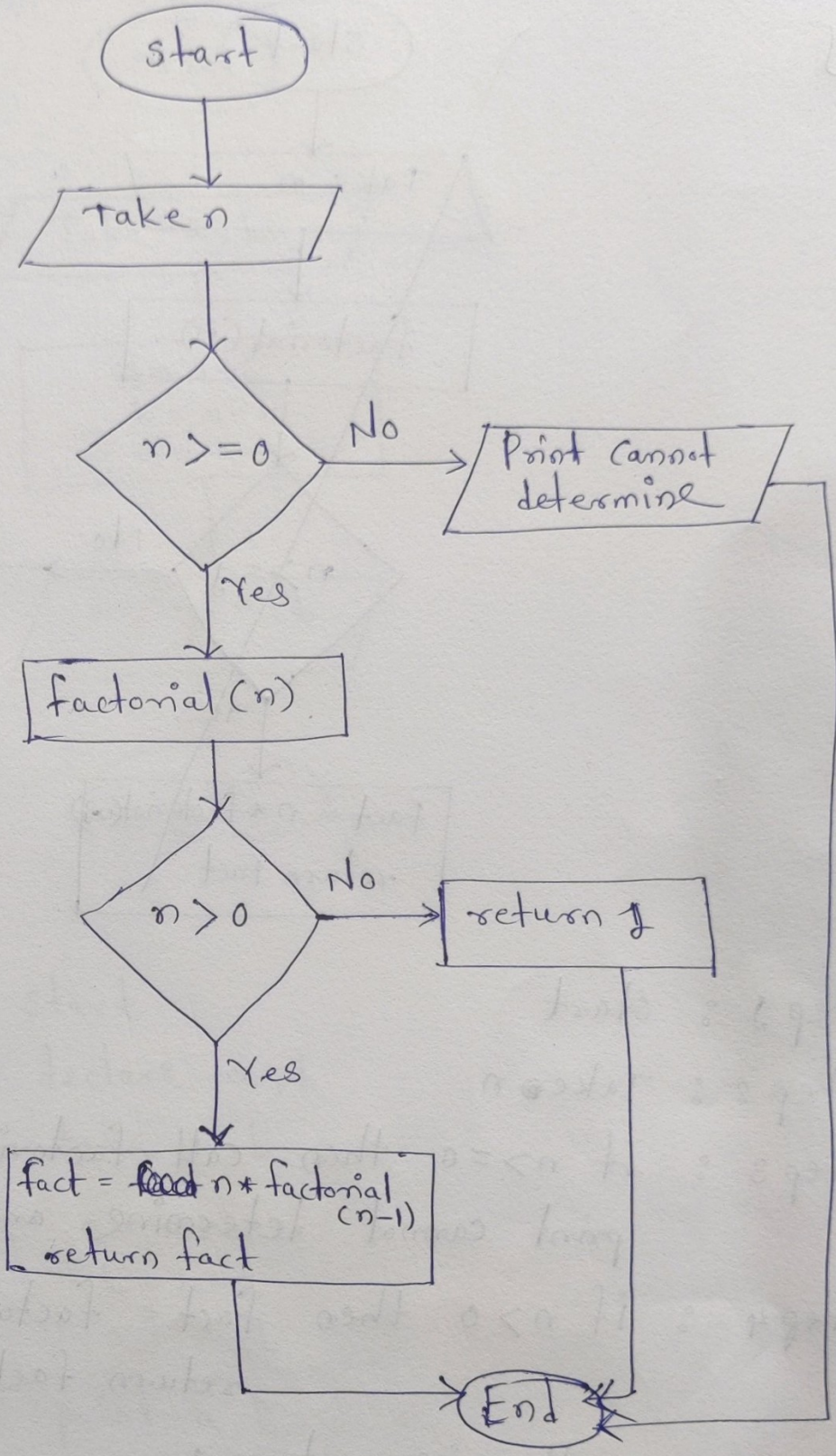
step 1 : start
step 2 : declare num
step 3 : Take num
step 4 : if num % 2 == 0 then
print even number otherwise
print odd number
step 5 : End

Q2]



step1 : start
step2 : declare num, i
step3 : take num
step4 : fact = 1
i = num
step5 : if i >= 1 then fact = fact * i
i--
goto step 5
otherwise goto step 6
step6 : if i == 0 then print fact otherwise
print Invalid
step7 : End

Q 3]



step 1 : start

step 2 : Take n

step 3 : if n>=0 then call factorial(n) otherwise
print cannot determine and goto step 5

step 4 : if n>0 then fact = factorial(n-1) * n
return fact

otherwise return 1

step 5 : End

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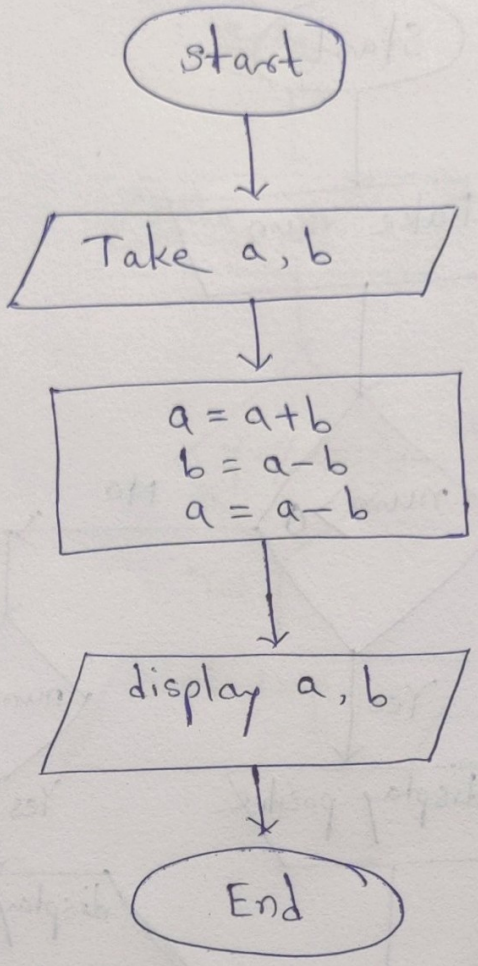
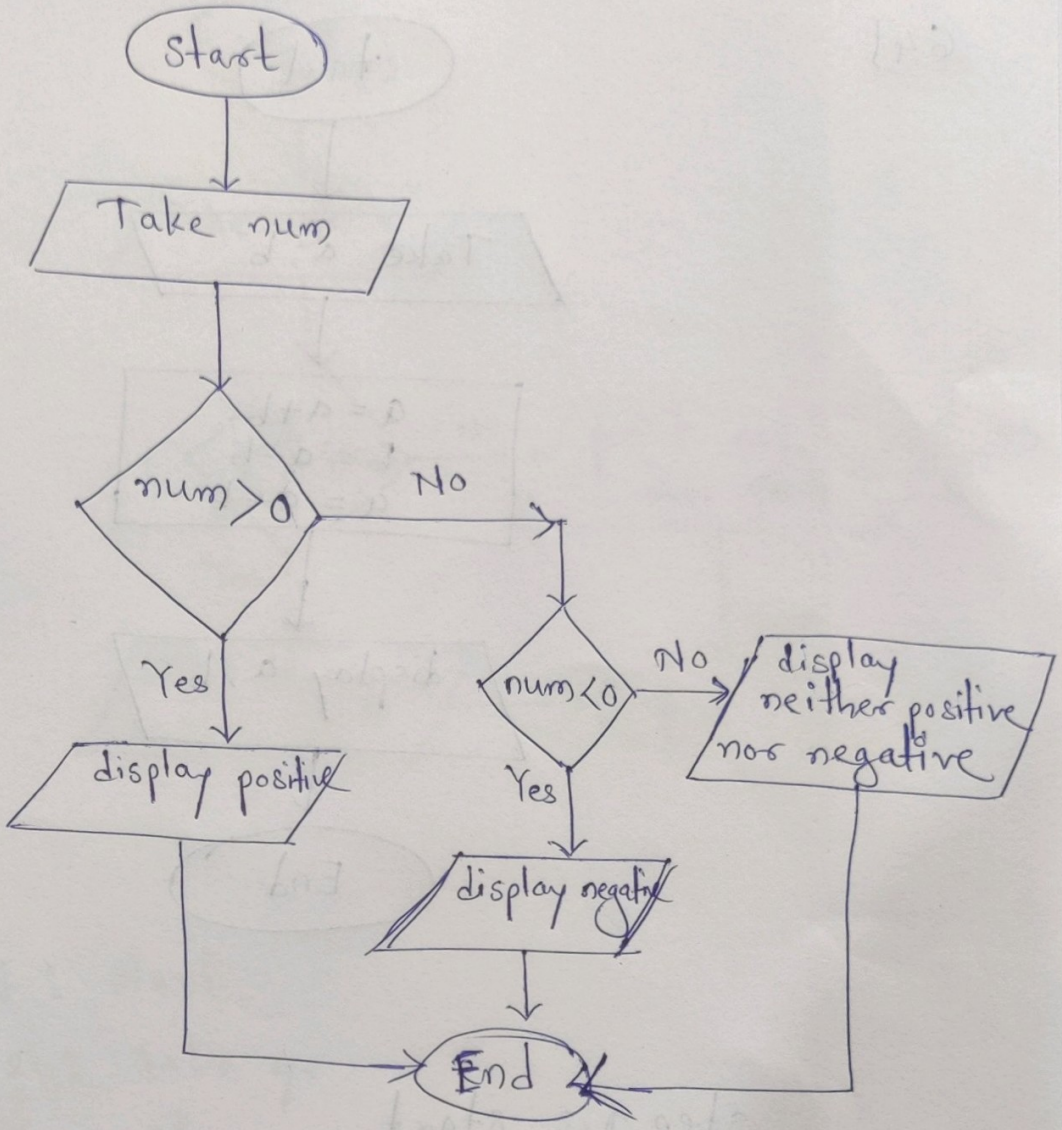


step 1 : start
step 2 : declare a, b
step 3 : take a, b
step 4 : a = a+b
b = a-b
a = a-b
step 5 : print a, b
step 6 : End

Q5]



step 1 : start
step 2 : take num
step 3 : if num > 0 then print positive number
go to step 5
otherwise go to step 4
step 4 : if num < 0 then print negative number
otherwise print neither positive nor negative number
step 5 : End

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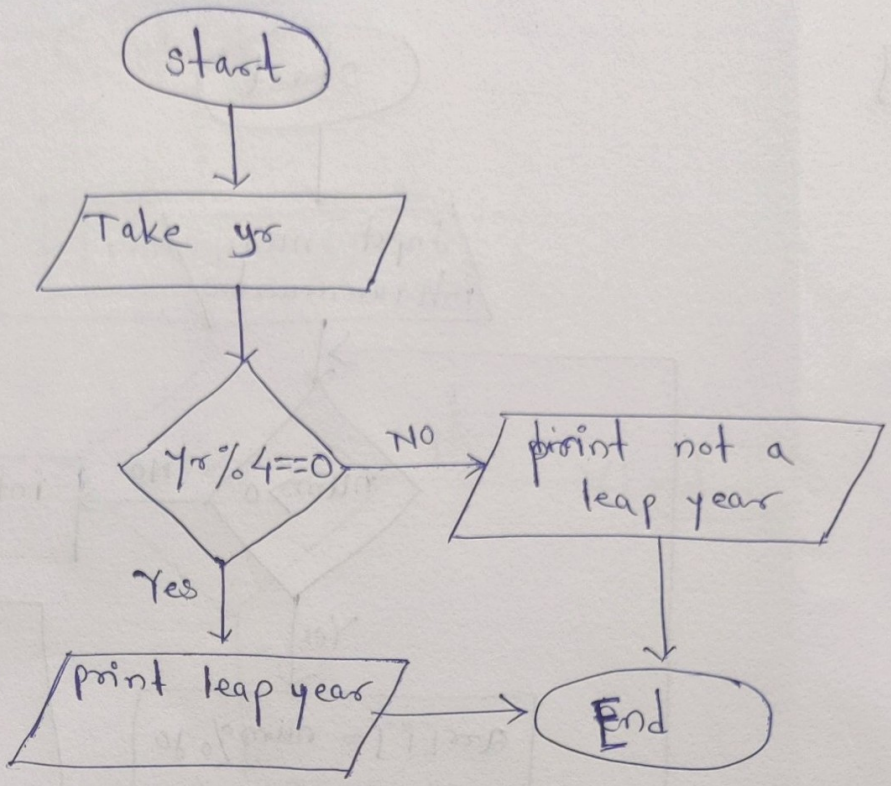


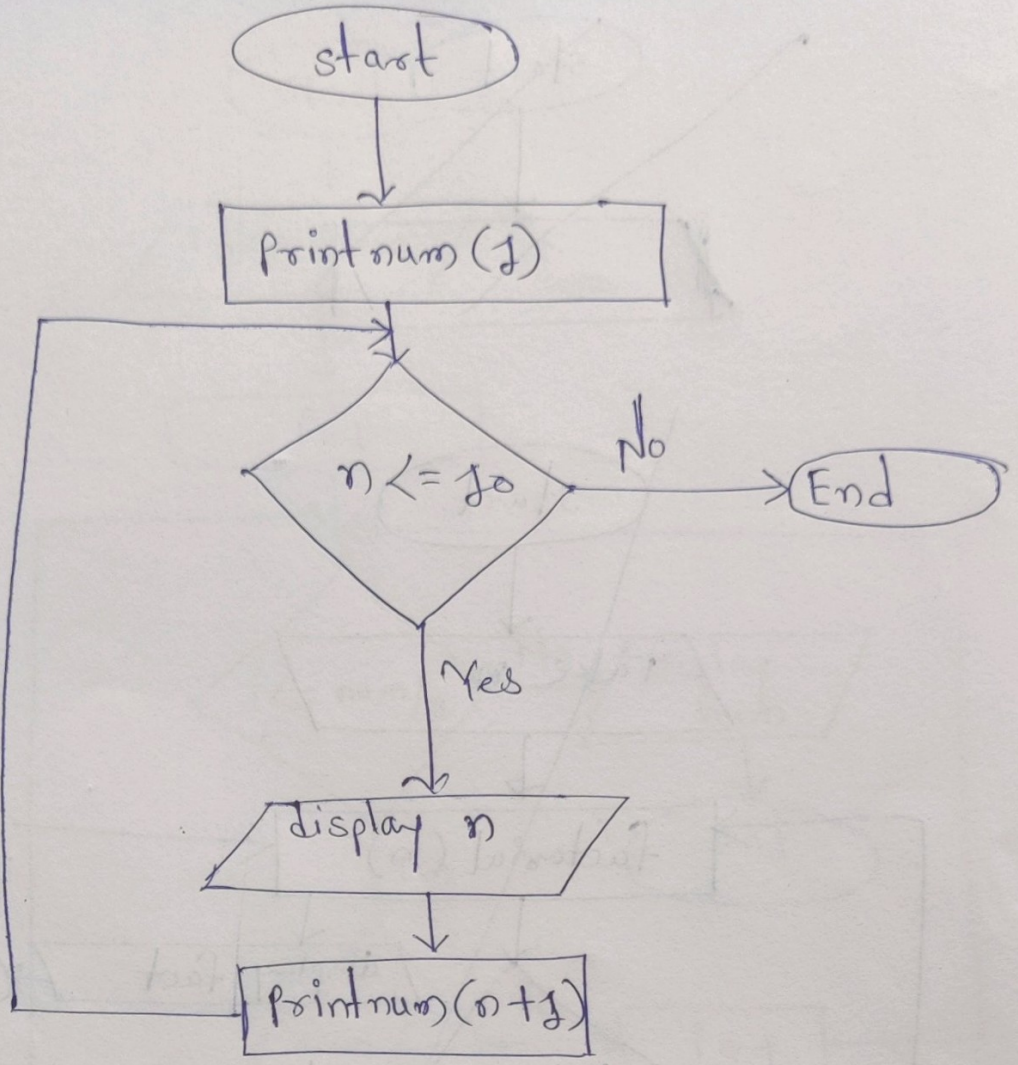
step 1 : start

step 2 : take yr

step 3 : if yr % 4 == 0 then print Leap year
otherwise print not a leap year

step 4 : End

(Q7)



step 1 : start

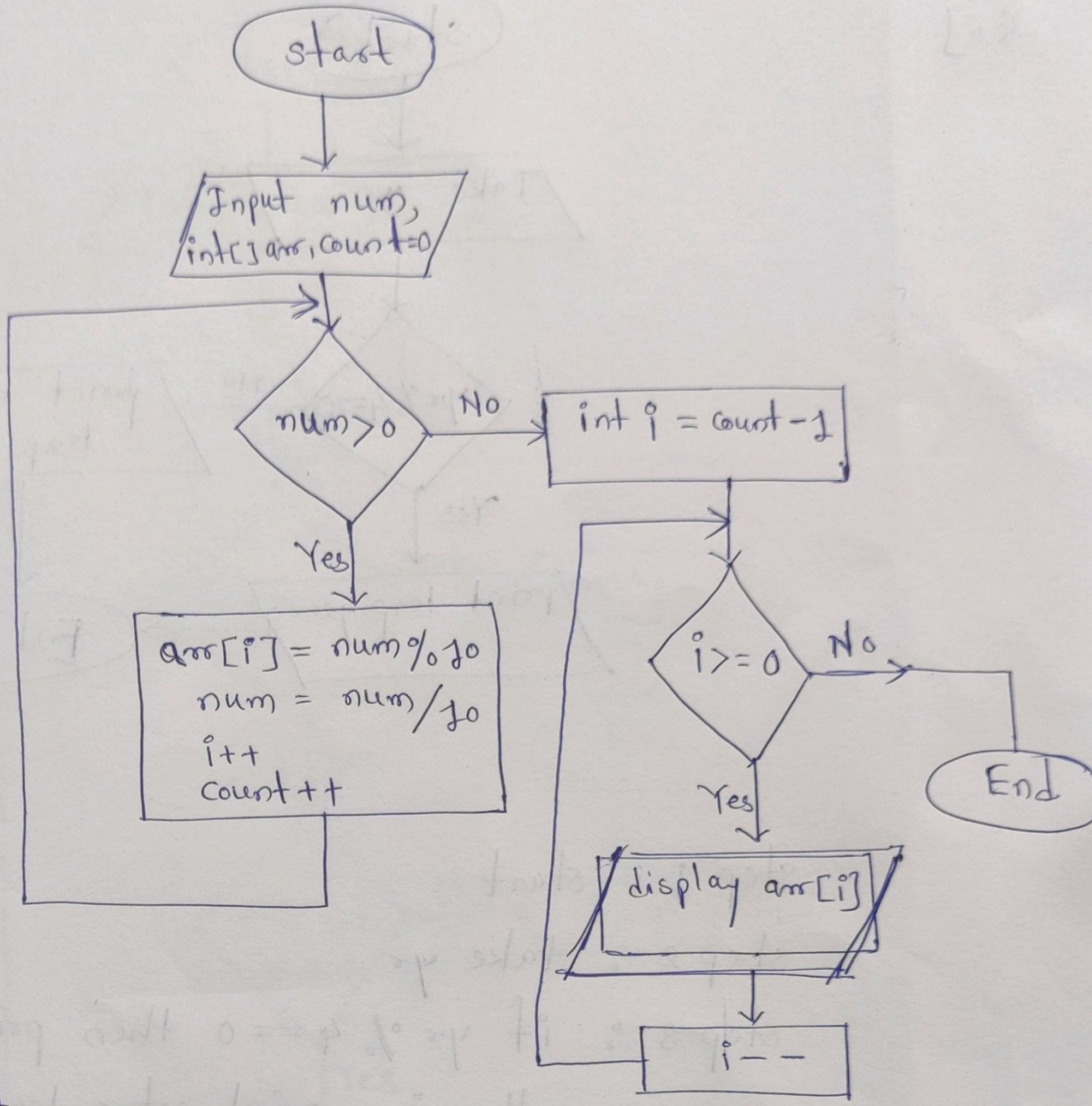
step 2 : call printnum(1)

step 3 : if n <= 10 then goto step 4 otherwise goto step 5

step 4 : print n
printnum(n+1)
goto step 3

step 5 : End

Q8]



step 1: start
step 2: declare num, arr
step 3: initialize count=0
step 4: if num>0 then goto step 5 otherwise i = count-1
and goto step 6
step 5: arr[i] = num % 10
num = num/10
i++
count++
goto step 4.
step 6: if i>=0 then print arr[i]
i++
goto step 6
otherwise goto step 7.
step 7: stop

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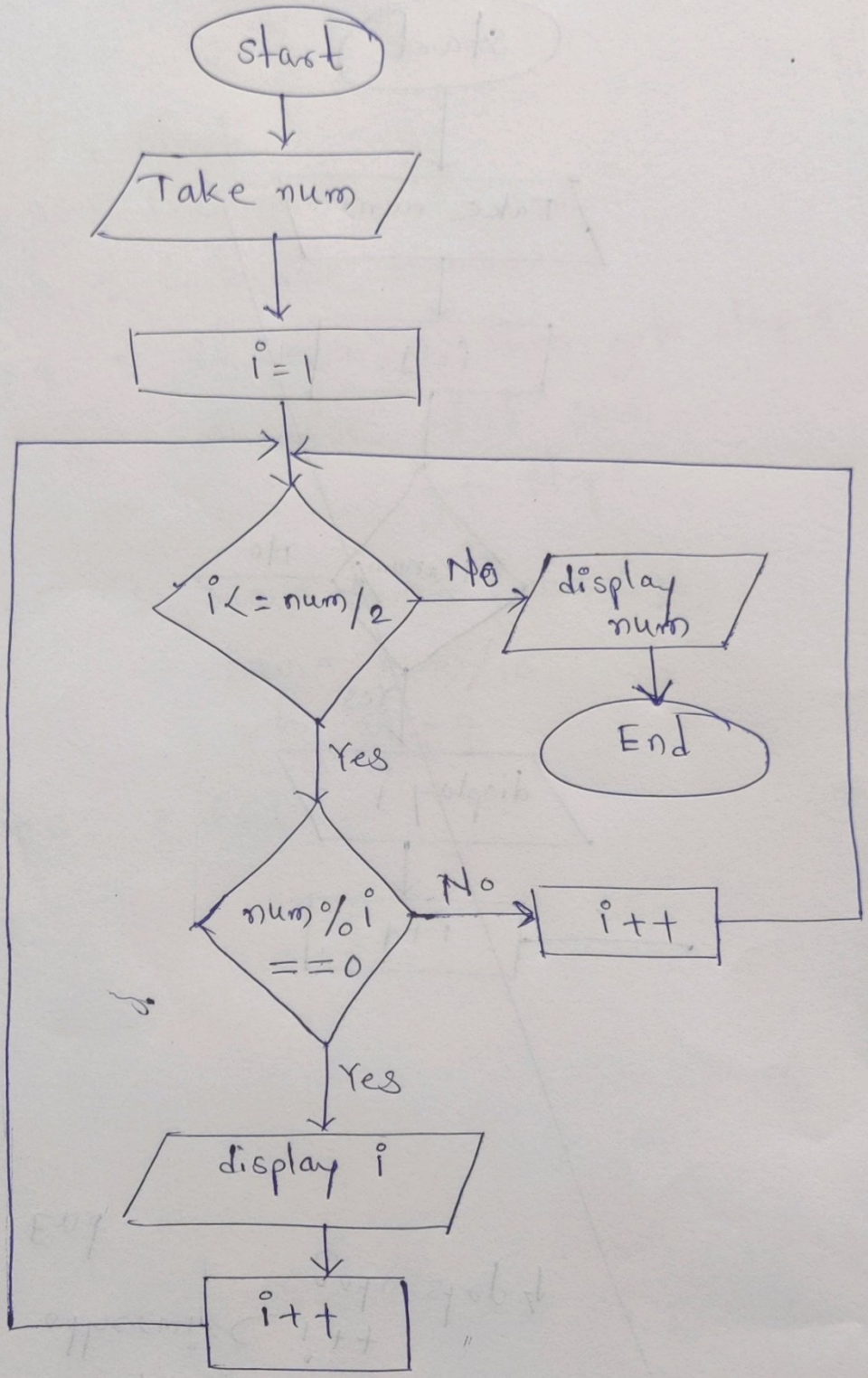
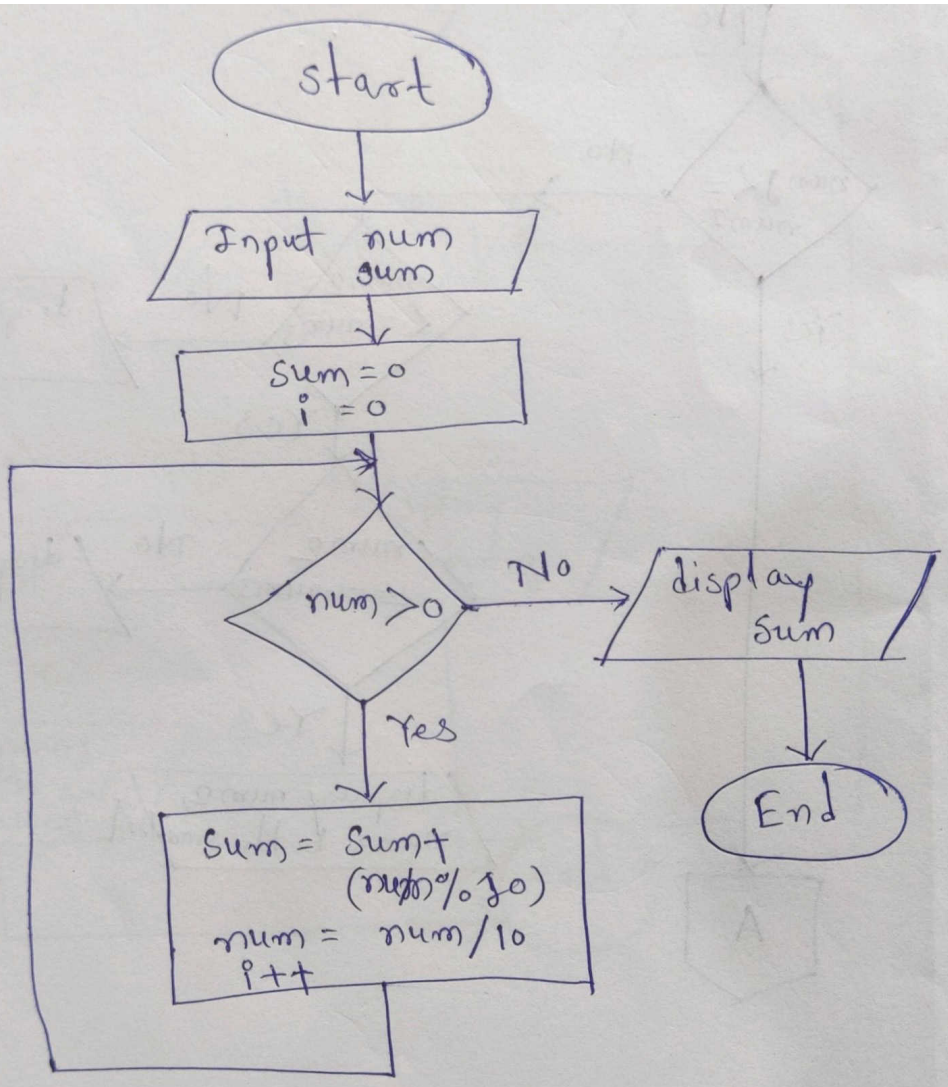


step 1 : start
step 2 : take num
step 3 : initialize i = 0
step 4 : if i <= num/2 then goto step 5
otherwise print num
goto step 6
step 5 : if num % i == 0 then
print i
i++
otherwise i++
goto step 4
step 6 : End

Q 10]



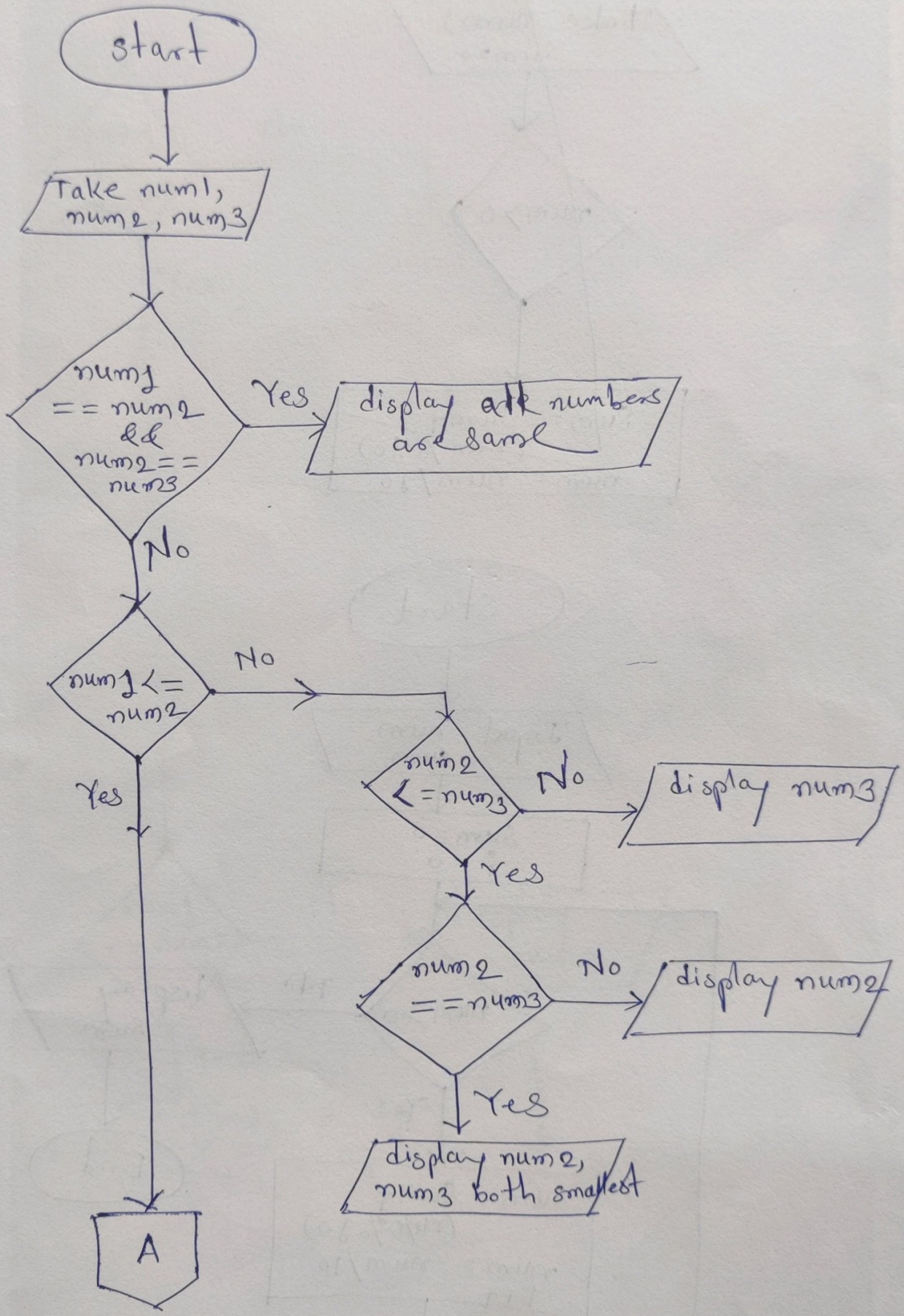
Q [10]

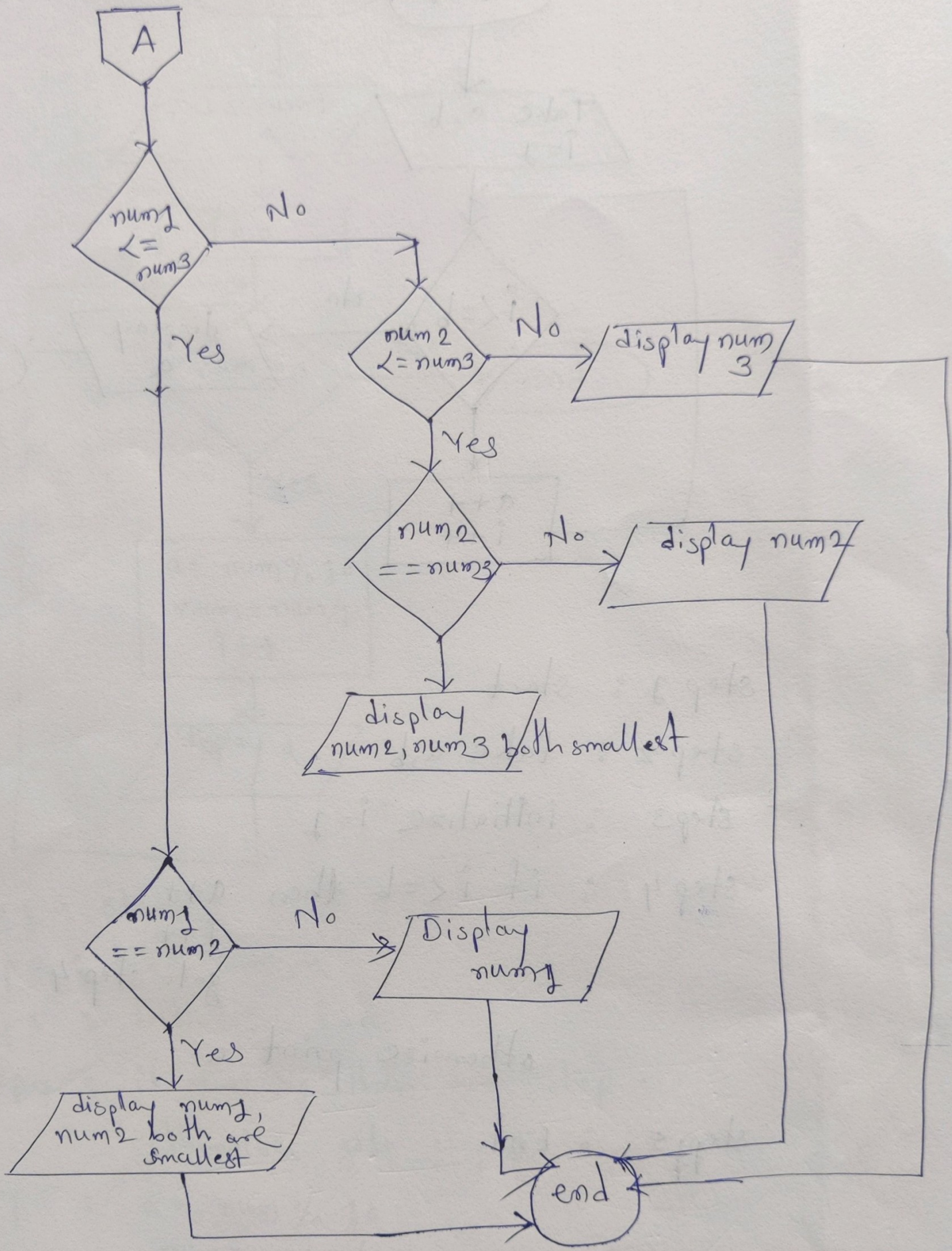
step 1 : start
step 2 : take num
step 3 : initialize sum = 0
step 4 : if num > 0 then goto step 5
otherwise print sum
goto step 6

step 5 : Sum = Sum + (num % 10)
num = num / 10
goto step 4

step 6 : End

Q11]





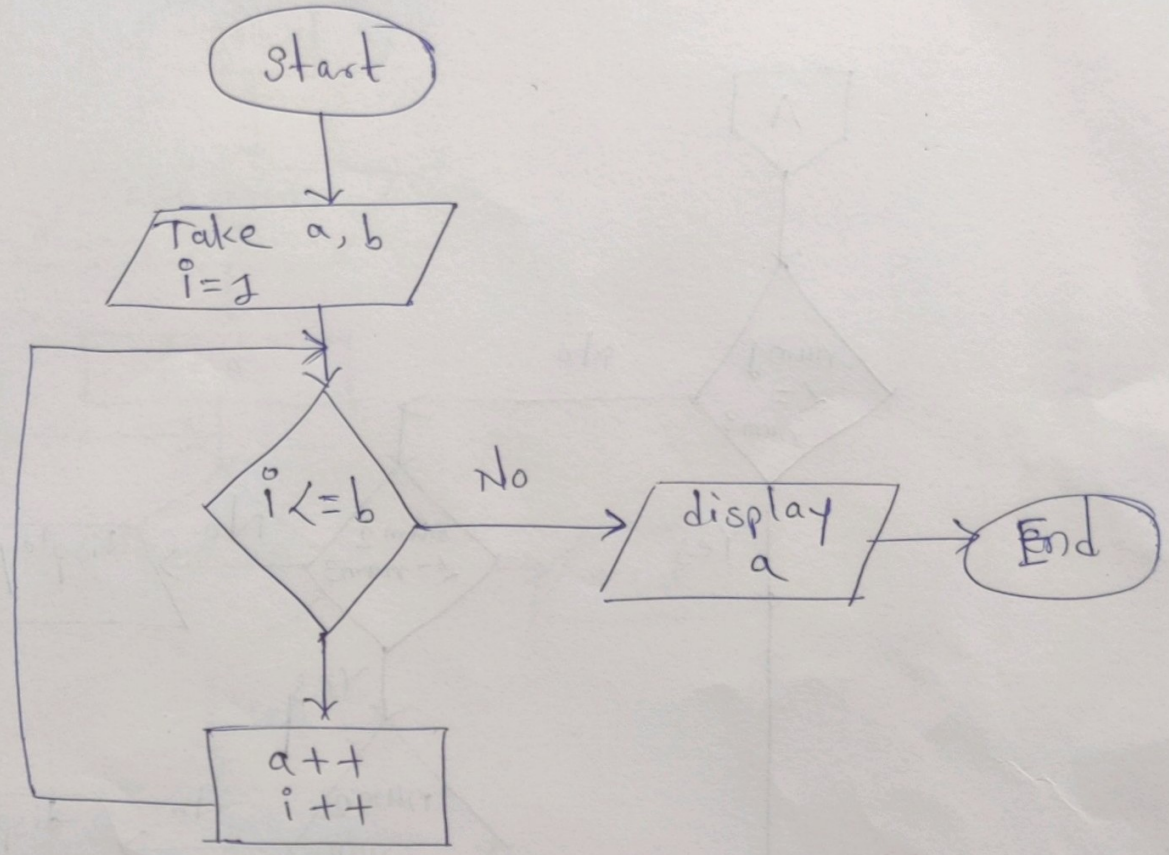
Q 11]

~~step 10:~~

Q 11]

step 1 : start
step 2 : take num1, num2, num3
step 3 : if num1 == num2 && num2 == num3 then
print all numbers are same
otherwise goto step 4.
step 4 : if num1 <= num2 then goto step 5
otherwise goto step 7
step 5 : if num1 <= num3 then goto step 6
otherwise goto 7.
step 6 : if num1 == num2 then print num1, num2
both are smallest.
otherwise print num1
step 7 : if num2 <= num3 then goto 8
otherwise print num3
step 8 : if num2 == num3 then print num2, num3
both are smallest
otherwise print num2.
step 9 : End

Q12)



step 1 : start

step 2 : take a, b

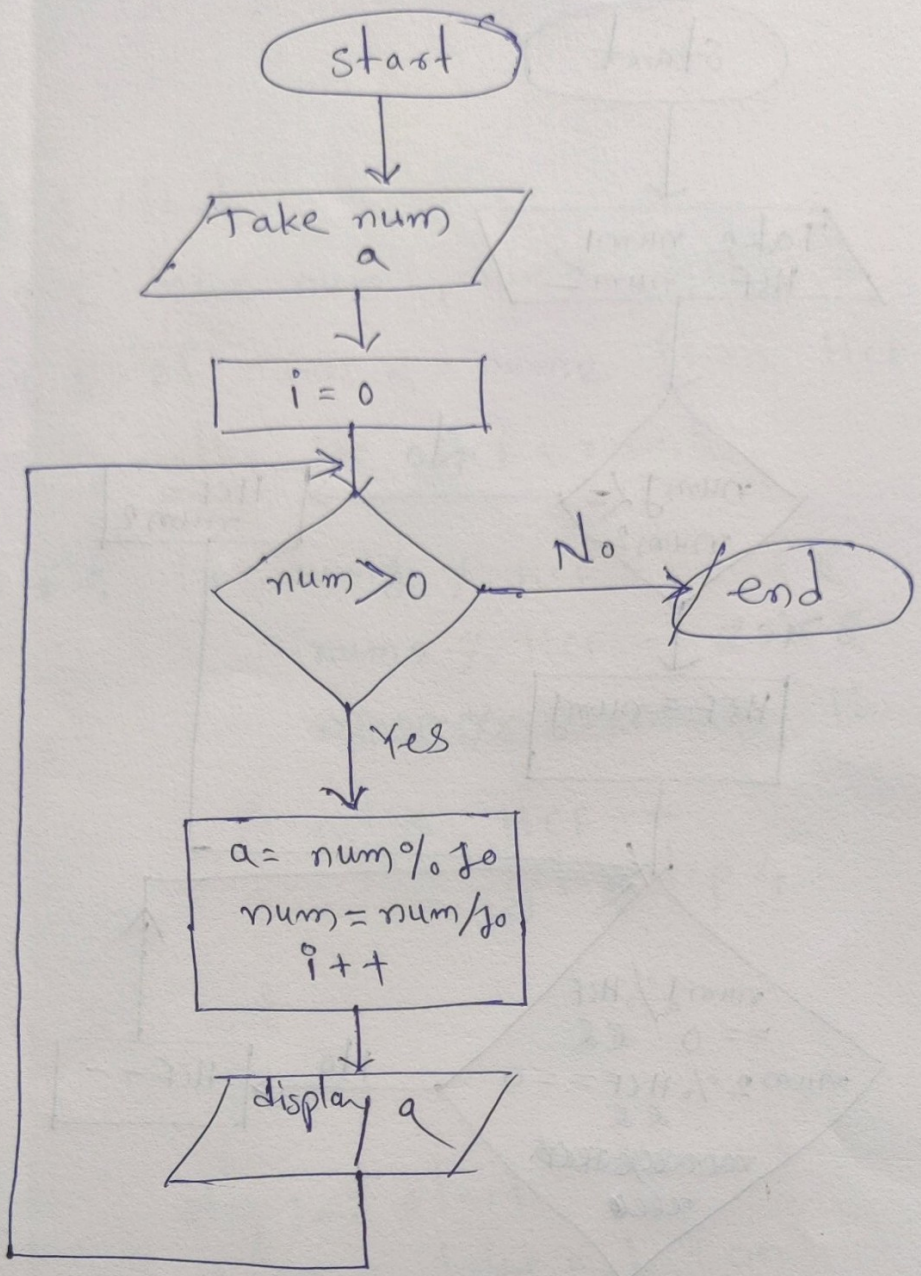
step 3 : initialize i = 1

step 4 : if i <= b then a++
i++
goto step 4.

otherwise print a.

step 5 : End

Q13]



step 1 : start

step 2 : take num, a

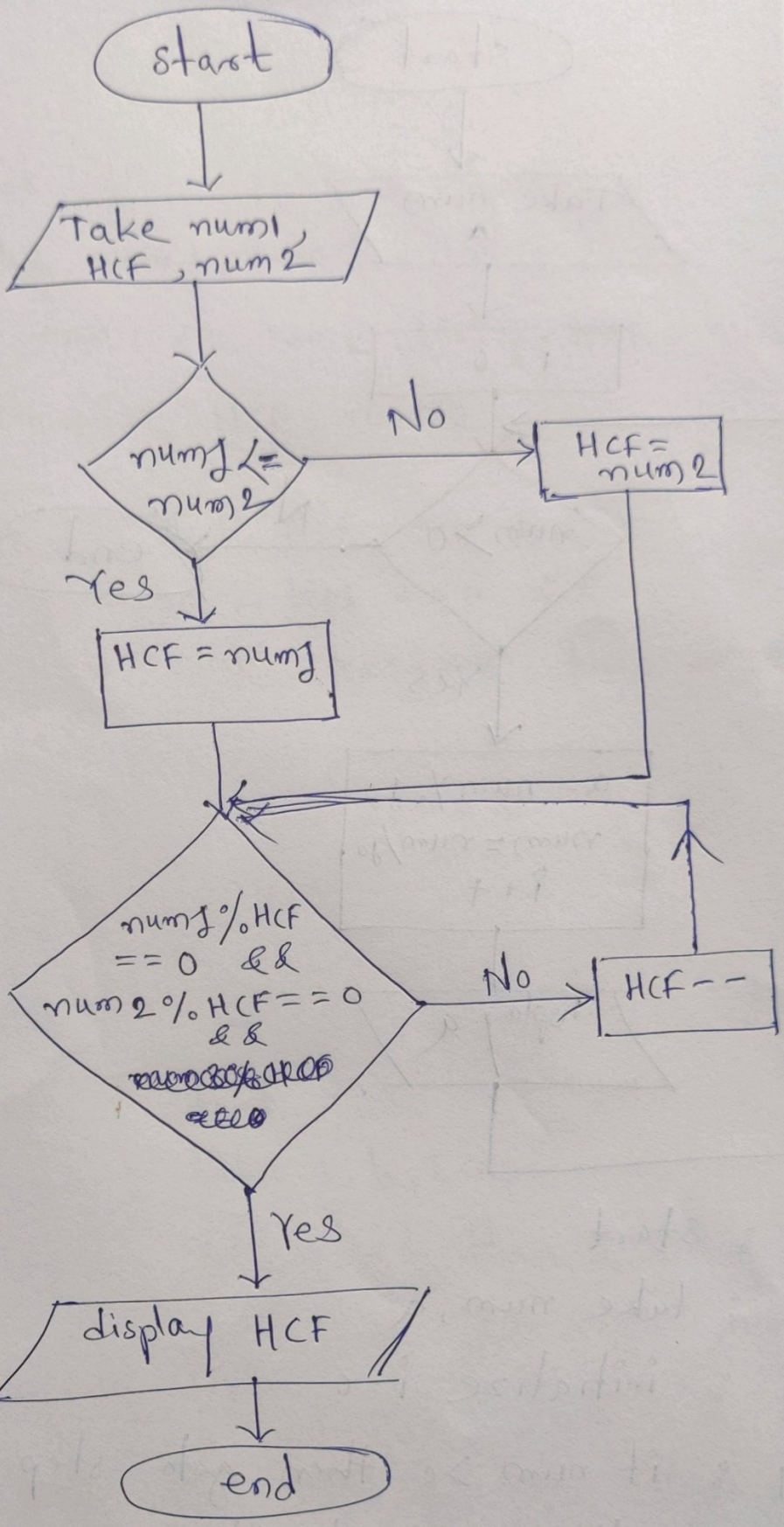
step 3 : initialize i = 0

step 4 : if num > 0 then goto step 5
otherwise goto step 6

step 5 : a = num % 10
num = num / 10
i++
print a
goto step 4.

step 6 : End

Q14]



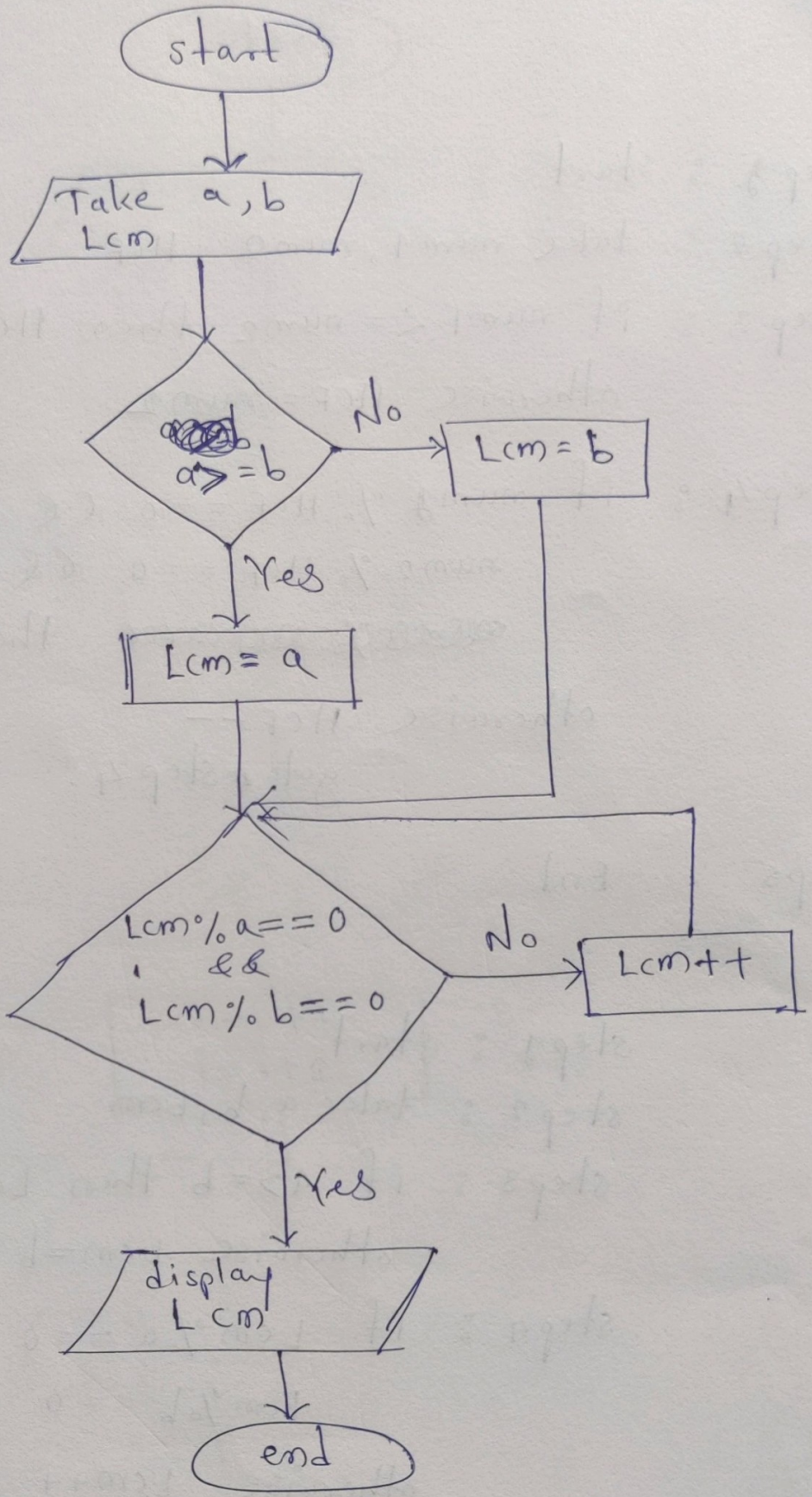
Q14]

step 1 : start
step 2 : take num1, num2, HCF
step 3 : if num1 <= num2 then HCF = num1
otherwise HCF = num2
step 4 : if num1 % HCF == 0 &&
num2 % HCF == 0 &&
then print HCF
otherwise HCF--
goto step 4.
step5 : End

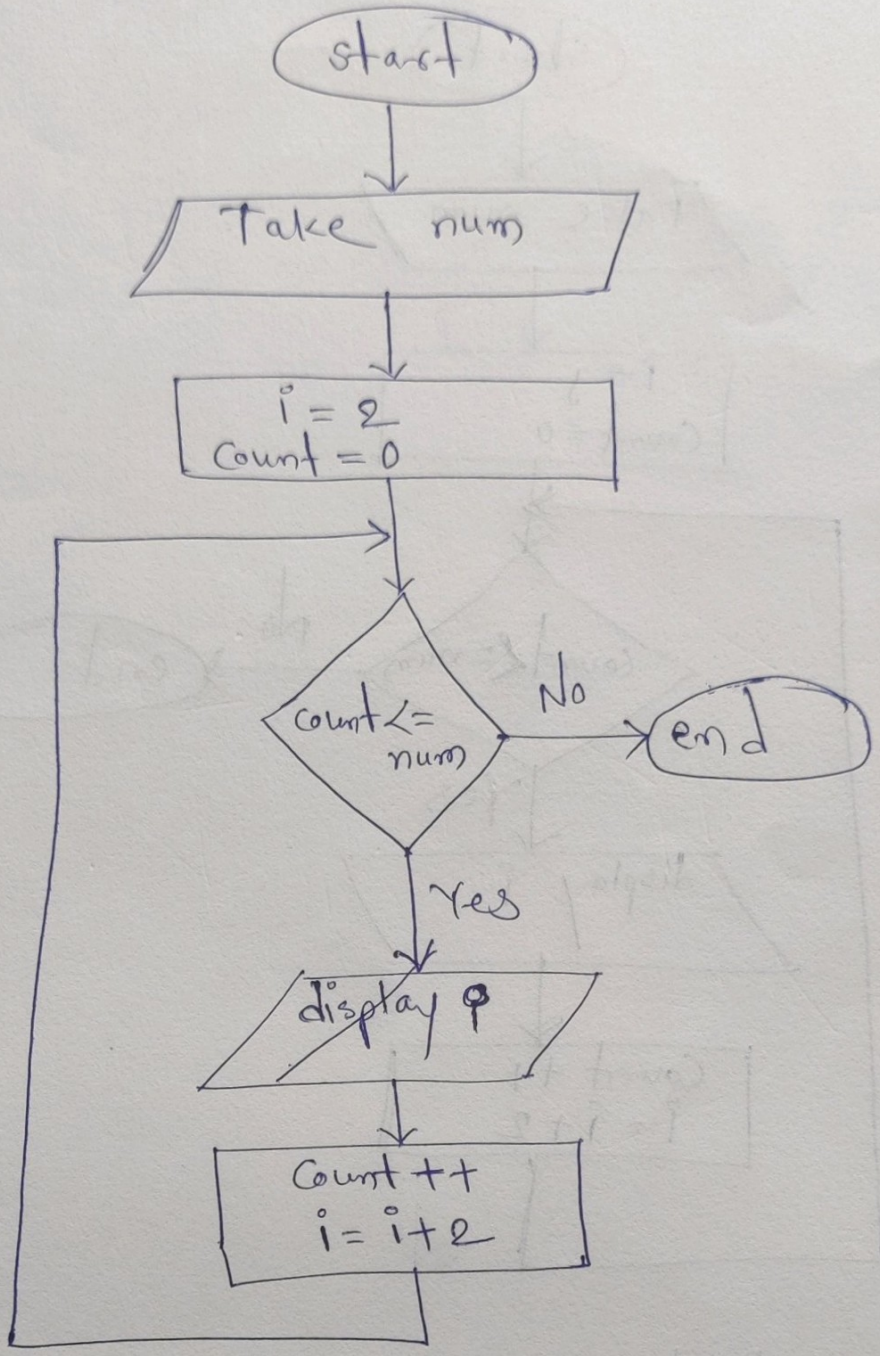
Q15]

step 1 : start
step 2 : take a, b, Lcm
step 3 : if a >= b then Lcm = a
otherwise Lcm = b
step 4 : if Lcm % a == 0 &&
Lcm % b == 0 then print Lcm
otherwise Lcm++
goto step 4
step5 : End

Q15]



Q19]



step 1 : start

step 2 : take num

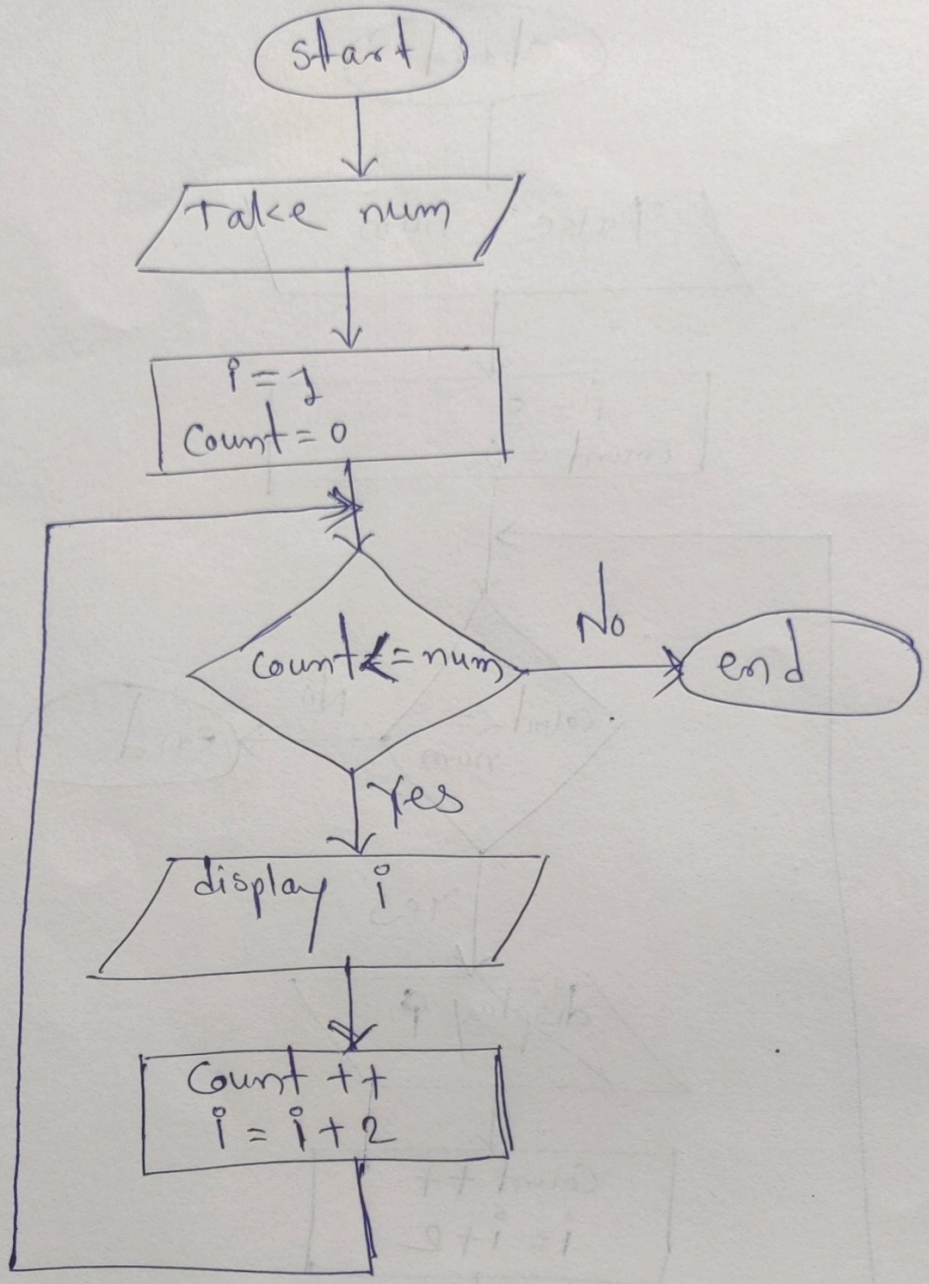
step 3 : initialize i = 2
count = 0

step 4 : if count <= num then print i
count ++
i = i+2
goto step 4

otherwise goto step 5.

step 5 : End

Q20]



step 1 : start

step 2 : take num

step 3 : initialize i = 1
count = 0

step 4 : if Count <= num then print i
count ++
i = i + 2
goto step 4.

otherwise goto step 5.

step 5 : End