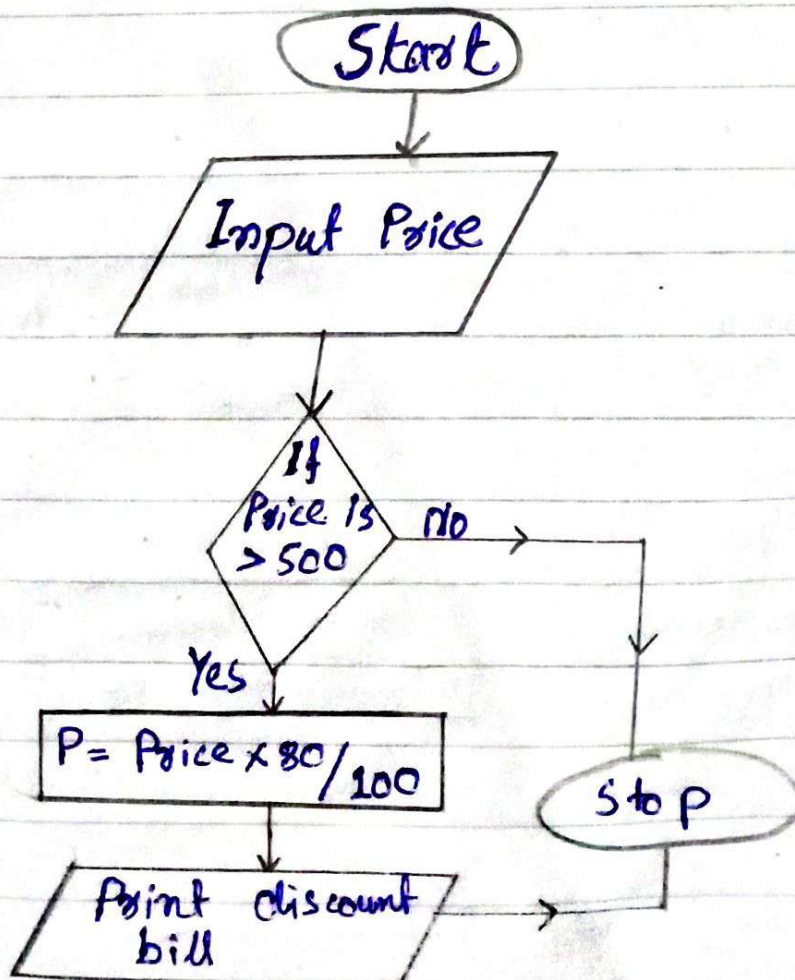


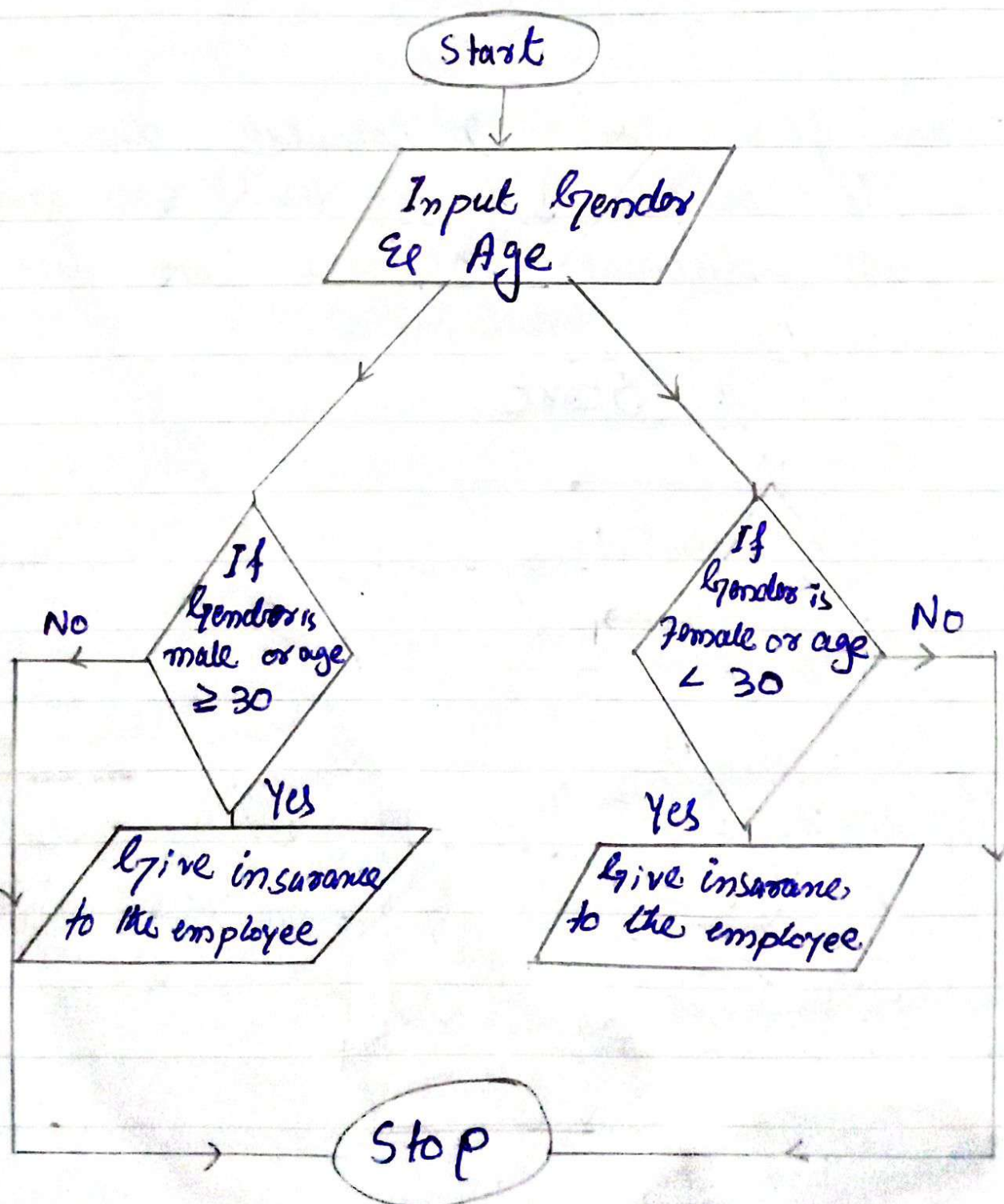
# Assignment No: 02

Prob → Draw flowchart of 5 problems of your own choice. But people should come up with unique problem.

- 1) Draw flow chart to calculate discount price, If price is greater than 500, give him 20% discount otherwise no discount.



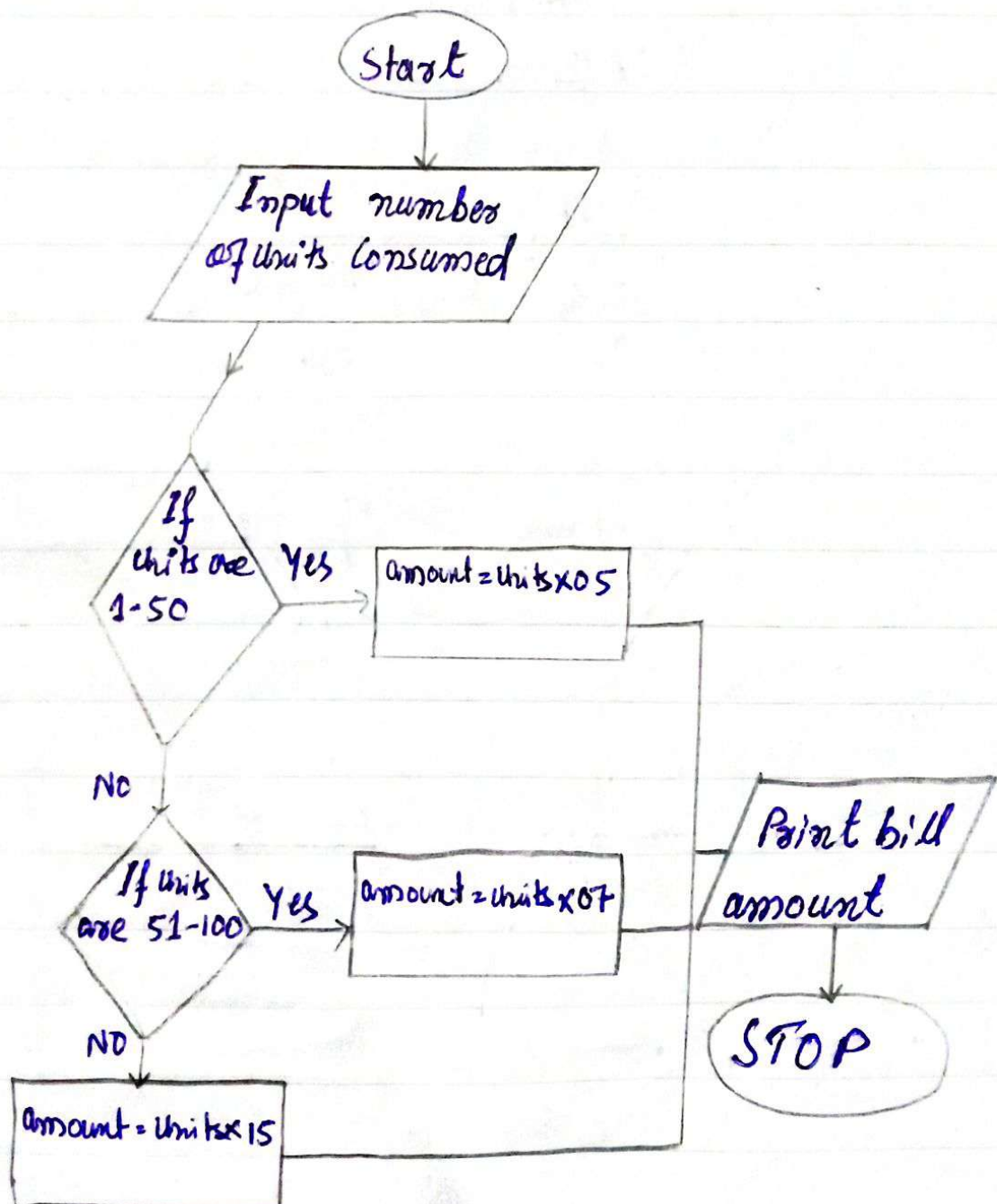
- 2) A company insurance insures its employee
- If employee is ~~less~~  $< 30$  years and Gender is female.
  - If employee is  $\geq 30$  years and Gender is male.
- Other wise no insurance.



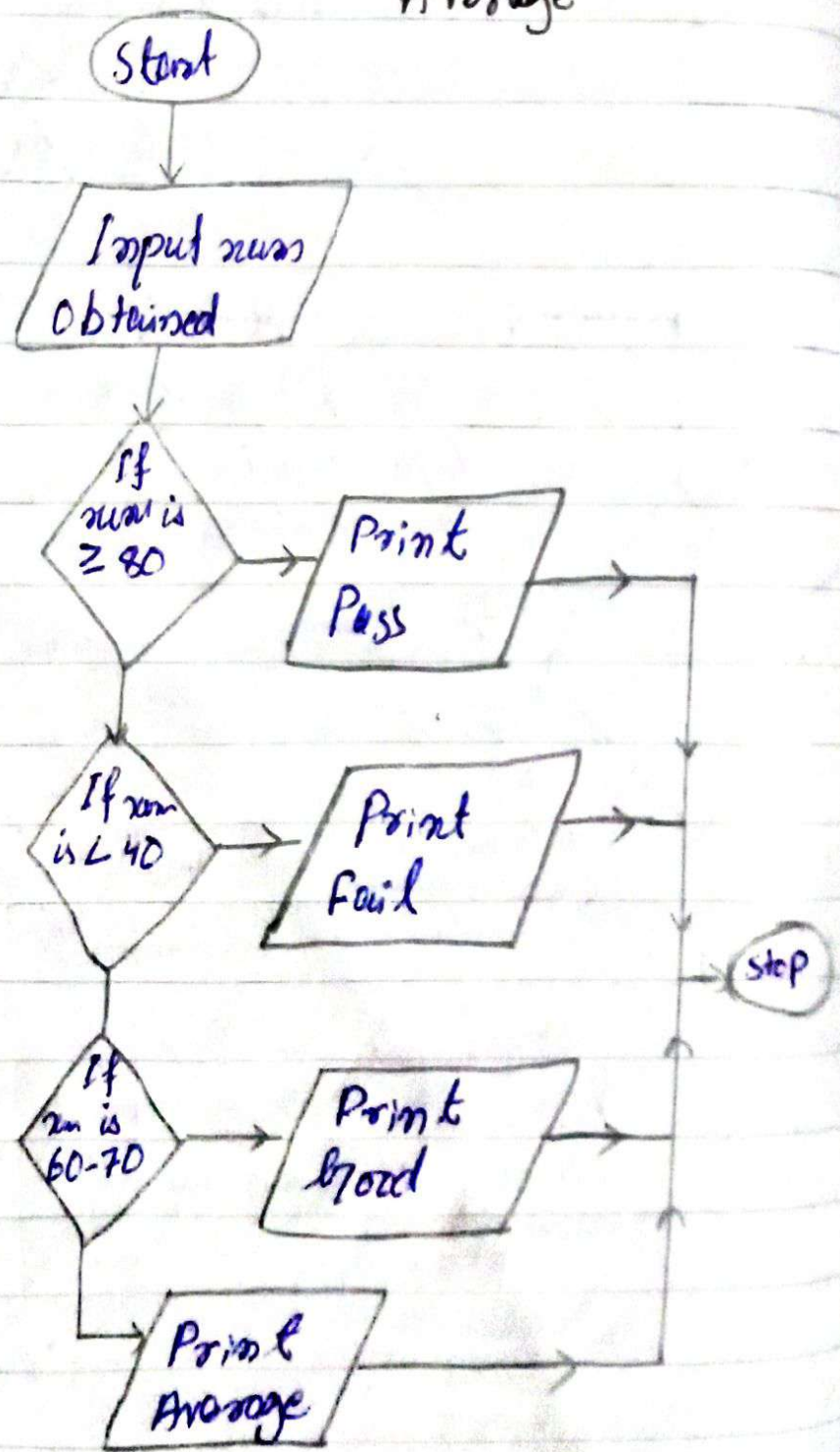


3) Draw a flow chart to calculate the electricity bill on following based

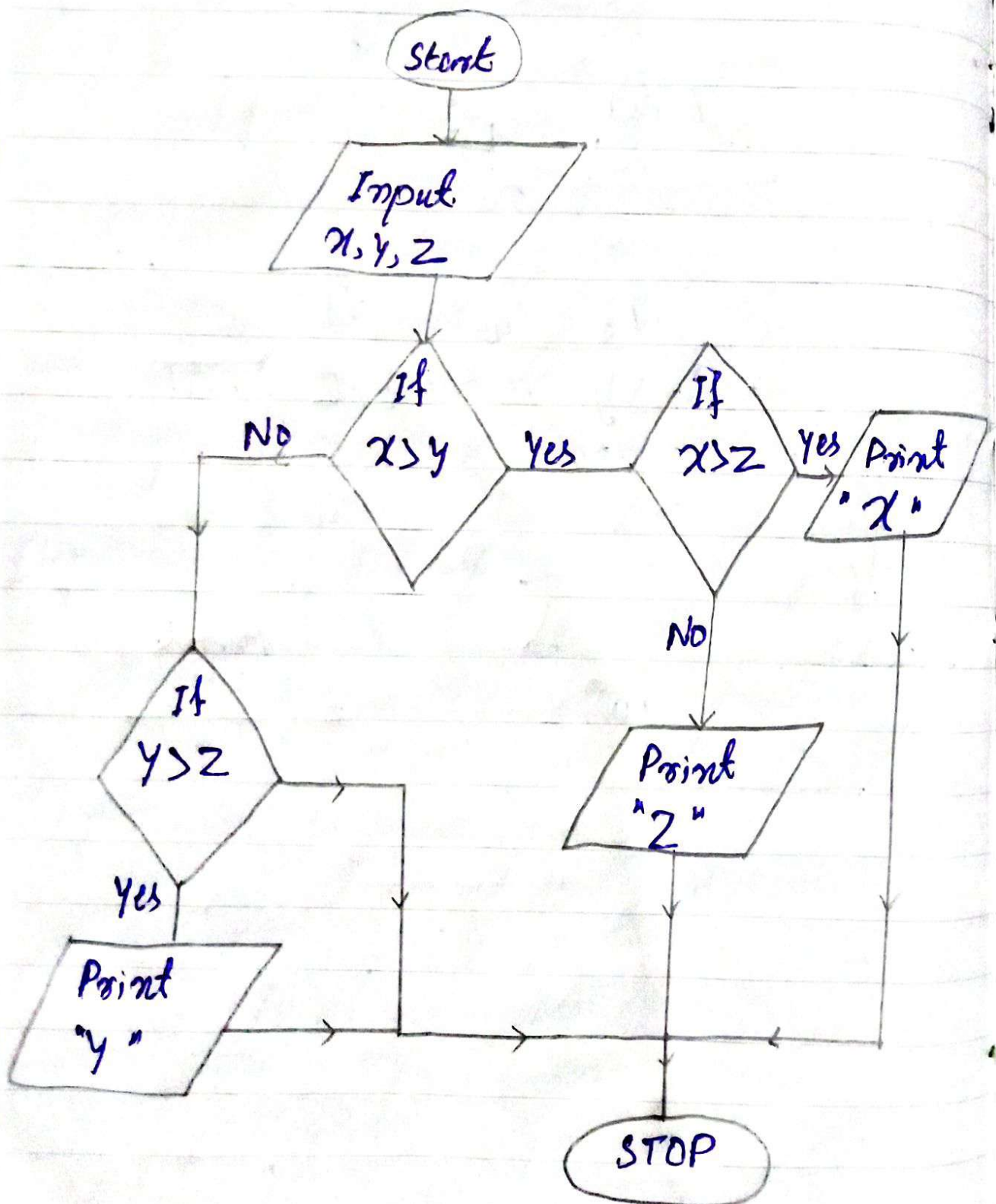
Unit Consume	Cost per Unit
1-50	Rs. 05
51-100	Rs. 07
101+ <del>150</del>	Rs. 15



4) Marking the grade according to number.  
If num is greater or equal to 80 "Pass"  
If num is less than 40 "Fail"  
If num is 60-70 then "~~Average~~". Good  
otherwise print "Average".



5) which of among "3" is greatest  
 $x, y, z$





Qno 4: Explain steps involve in drawing of a flow chart.

Step 1:-

Start terminal



START

⇒ Start terminal is used for starting the flow chart.

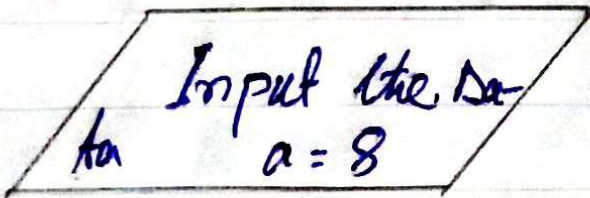
Step 2:-



Int = A

Then the declaration

Step 3:

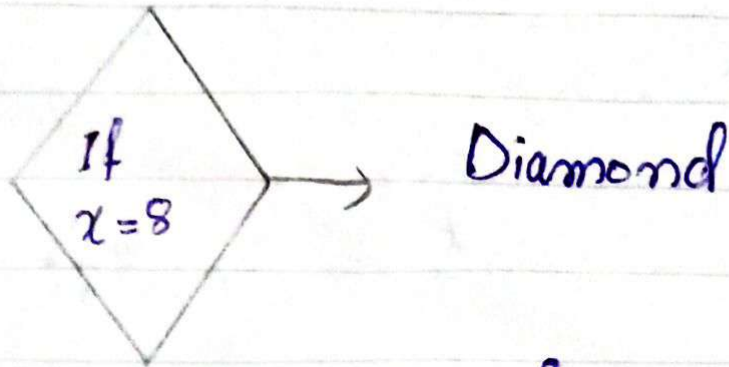


Input the Data  
a = 8

Parallelograms

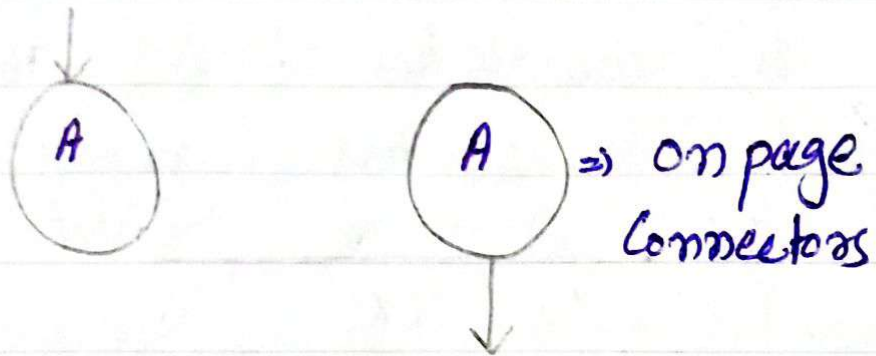
Input the Data that is given by the user. we use parallelograms for Input the data.

Step 4:



⇒ we use diamond for the decision

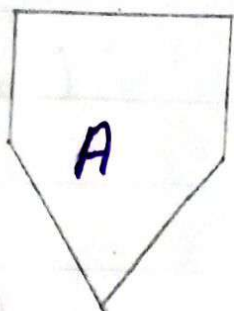
Step 5:



⇒ On page connectors use if chart is covered one half of your page & continue on the the same to page by step then we use this on page connectors.



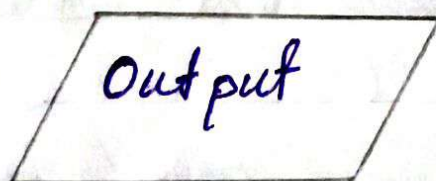
Step 6:



Off page Connector

⇒ Off page connector is used on the place where the one page is completed and our flow chart is still remaining then we use it to connect our chart on the second page.

Step 7:



Parallelogram

⇒ When the all process done or after taking decision we have a final answer (Output). Here we use parallelogram for displaying Output.



Step 8:



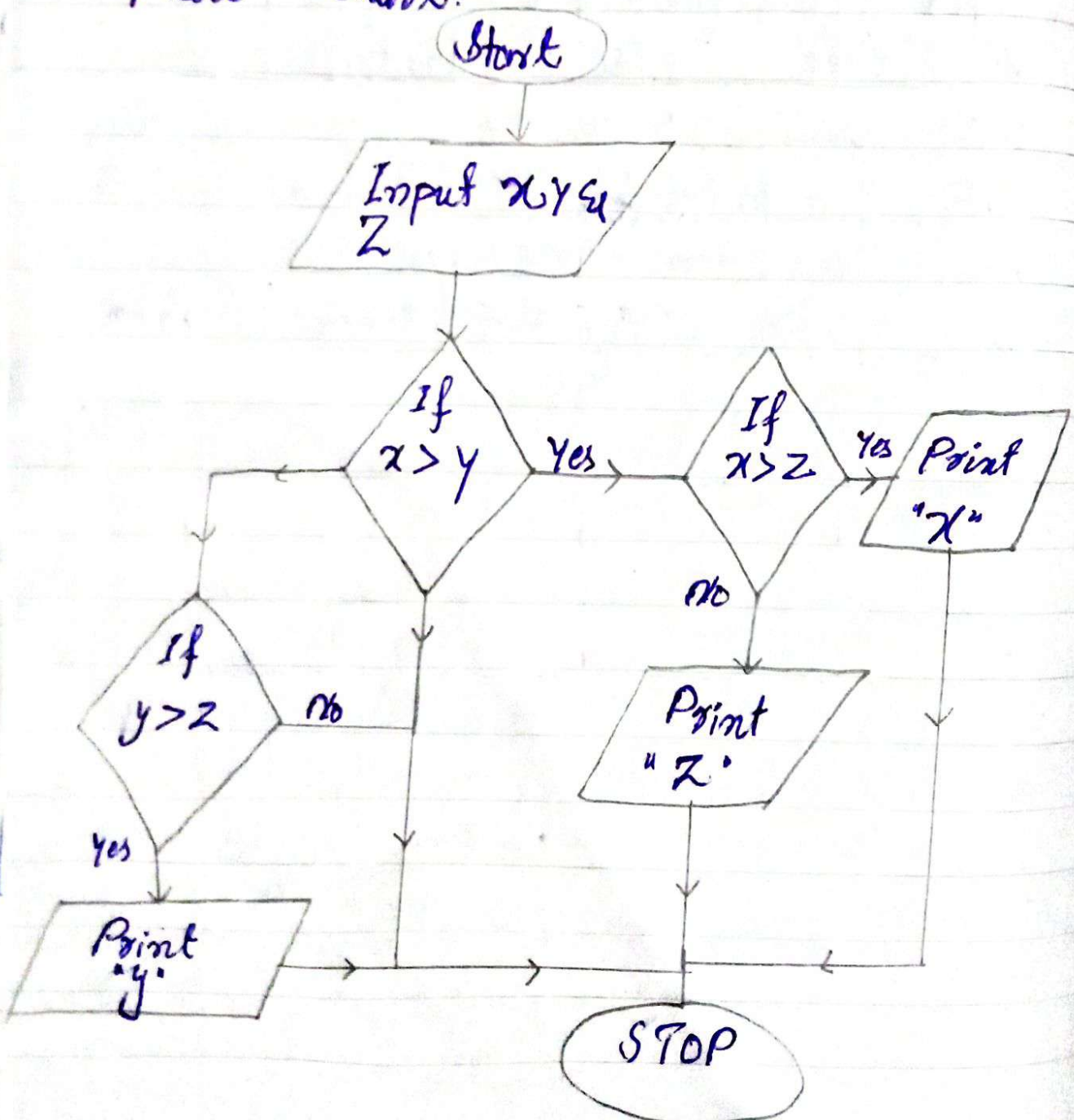
Terminal

⇒ In the last we when we get output then we suppose to "End" the chart, so we use this Terminal for ending the chart. This Terminal which has an oval shape is used for both (Input & Output) data.

Ques Draw the PAC, HIPO, IPO & flowchart and write the pseudo code for the following problems.

- Find the largest number among  $x, y, z$ .

Flow chart:-





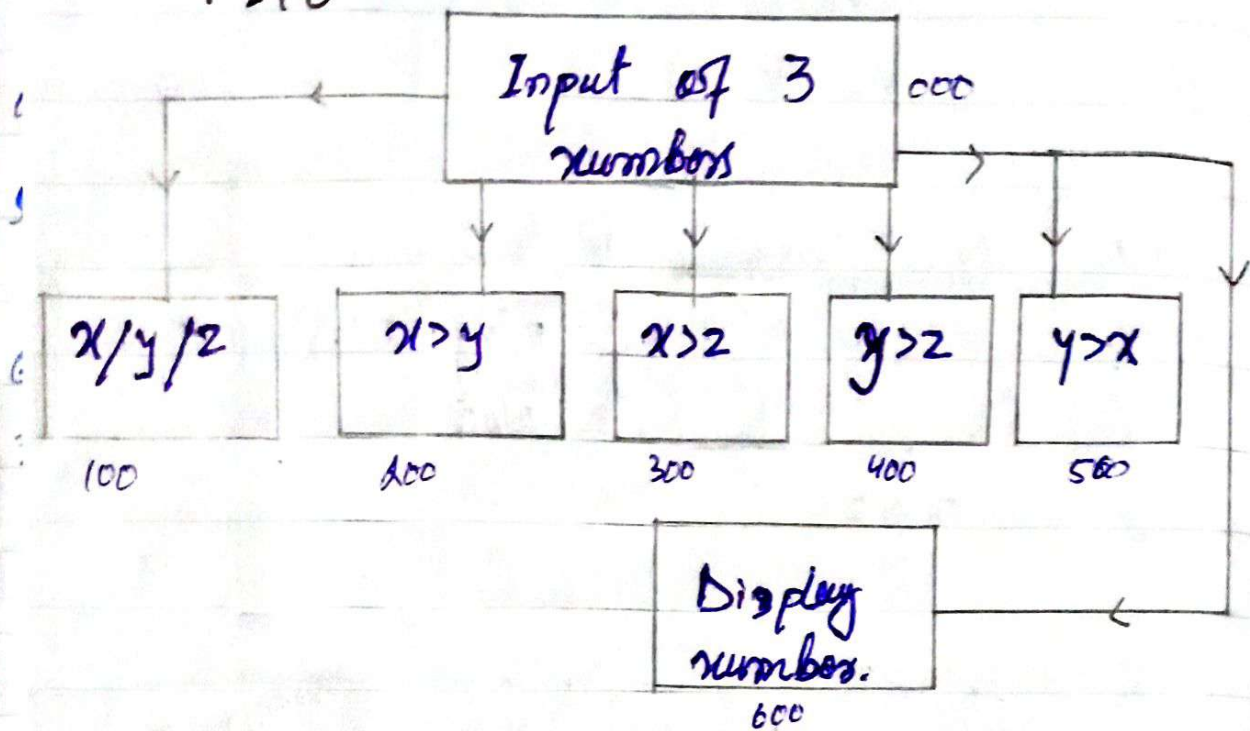
- largest of '3' No:

PAL chart:

Data	Processing	Output
x	$x > y$	Display Max Value
y	$x > z$	
z	$y > x$	
max	$y > z$	
	Maximum greatest Value	

- Output of "3" no

HIPO



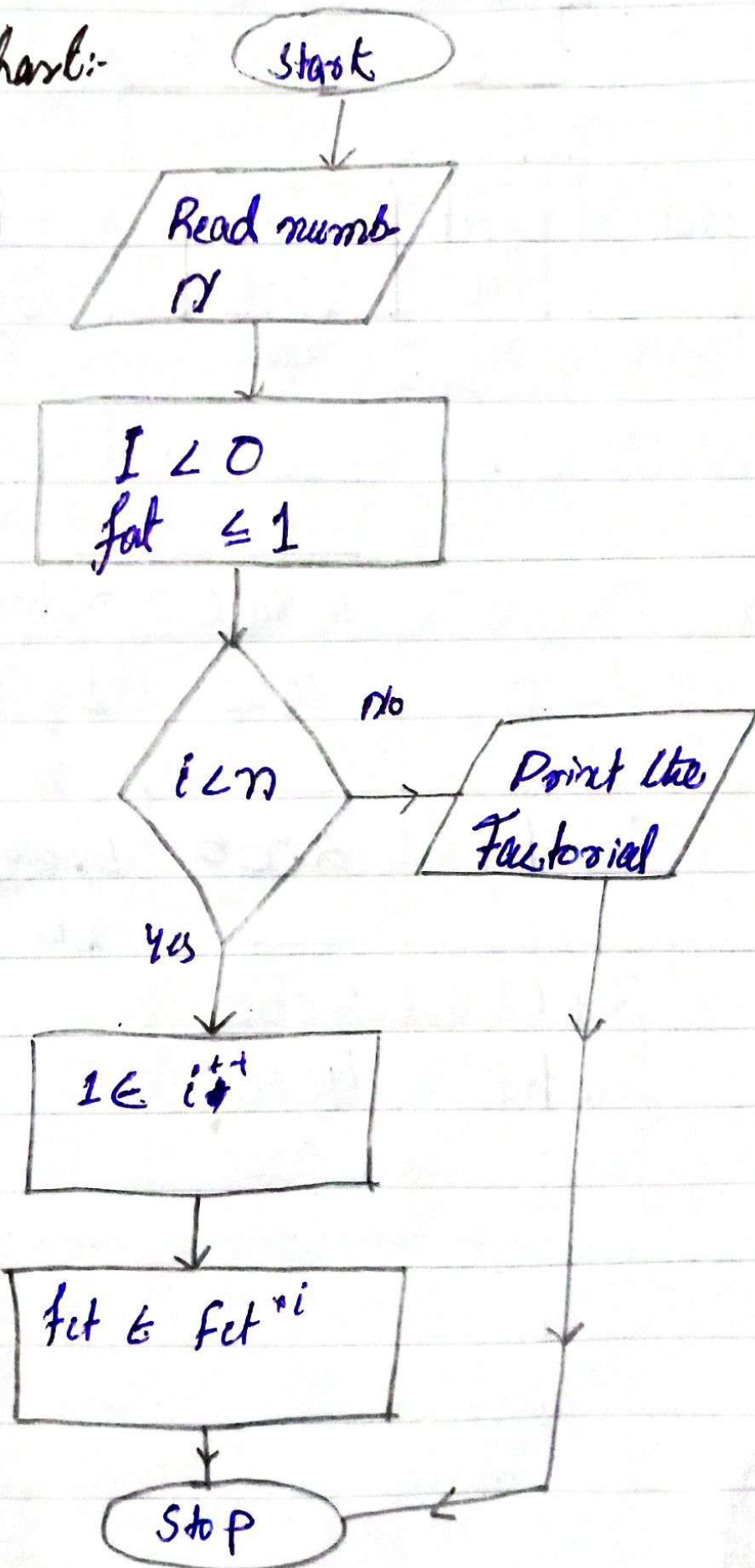
- IPO

Data	Processing	Module	Output
Input	Display num	600	Display num
x, y, z	y > x	500	
	y > 2	400	
	x > 2	300	
	x > y	200	
	x, y, z	100	
Input		000	

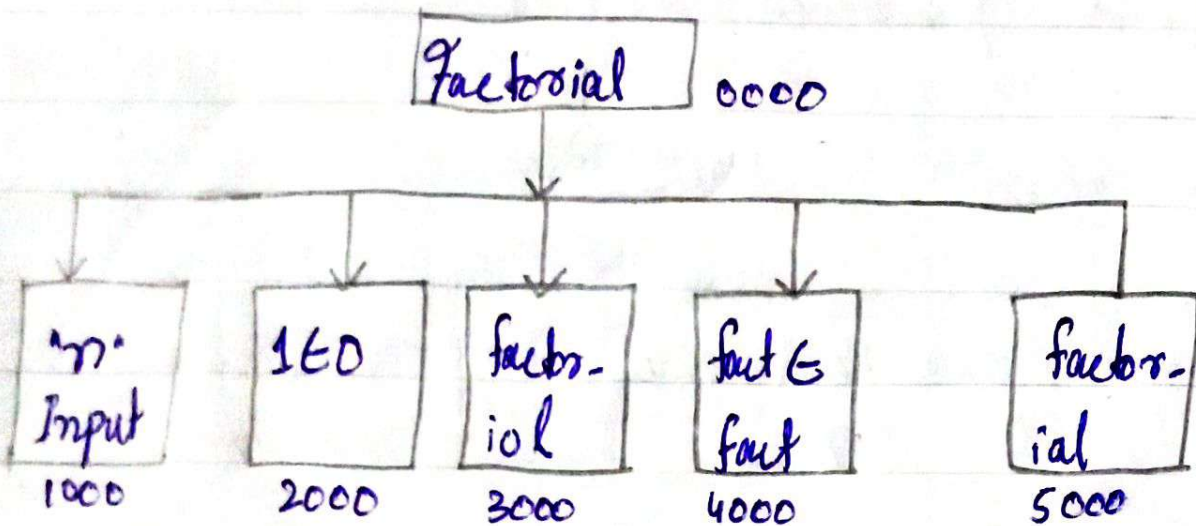


2) Find factorial of  $N$

Flow chart:-



## • HIPO CHART



## • IPO chart

Data	Process	Module	Output
i	i < 0	1000	Display n
n	Input n	2000	Display fact
fact	fact < 1	3000	
	fact fact * i	4000	
	fact	5000	



. PAC

Data	Process	Output
1		Display
$n$	$fact * i$	factorial
factorial		

Pseudocode:-

⇒ Input \* Inter any Integers)

⇒ factorial  $\leftarrow 1$

⇒ Input  $n$

⇒ If ( $n < 0$ )

⇒ Output/error! Factorial of  
number

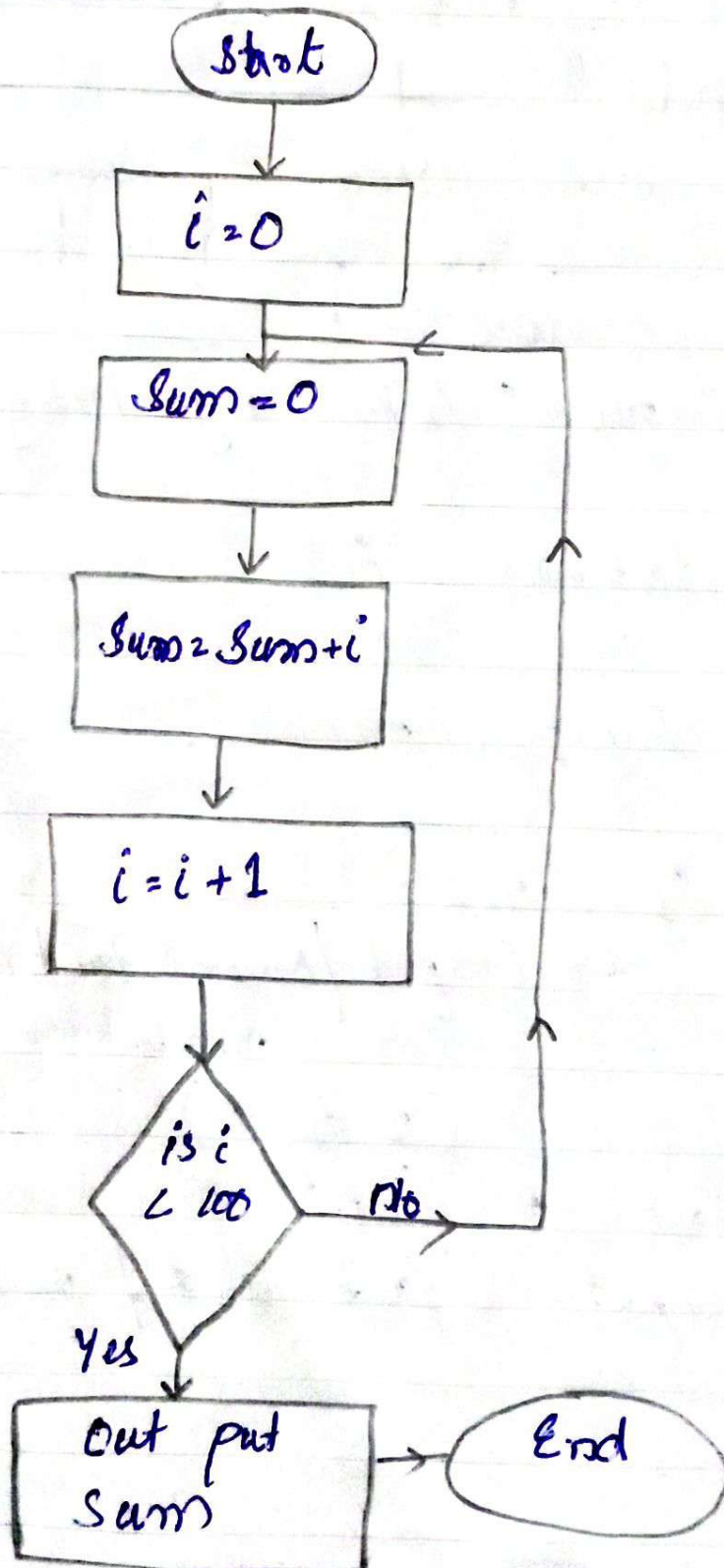
⇒ for  $i$  (1 to  $n$ )

⇒  $fact \leftarrow fact * i$

⇒ Output (factorial of  $n$  is factorial)

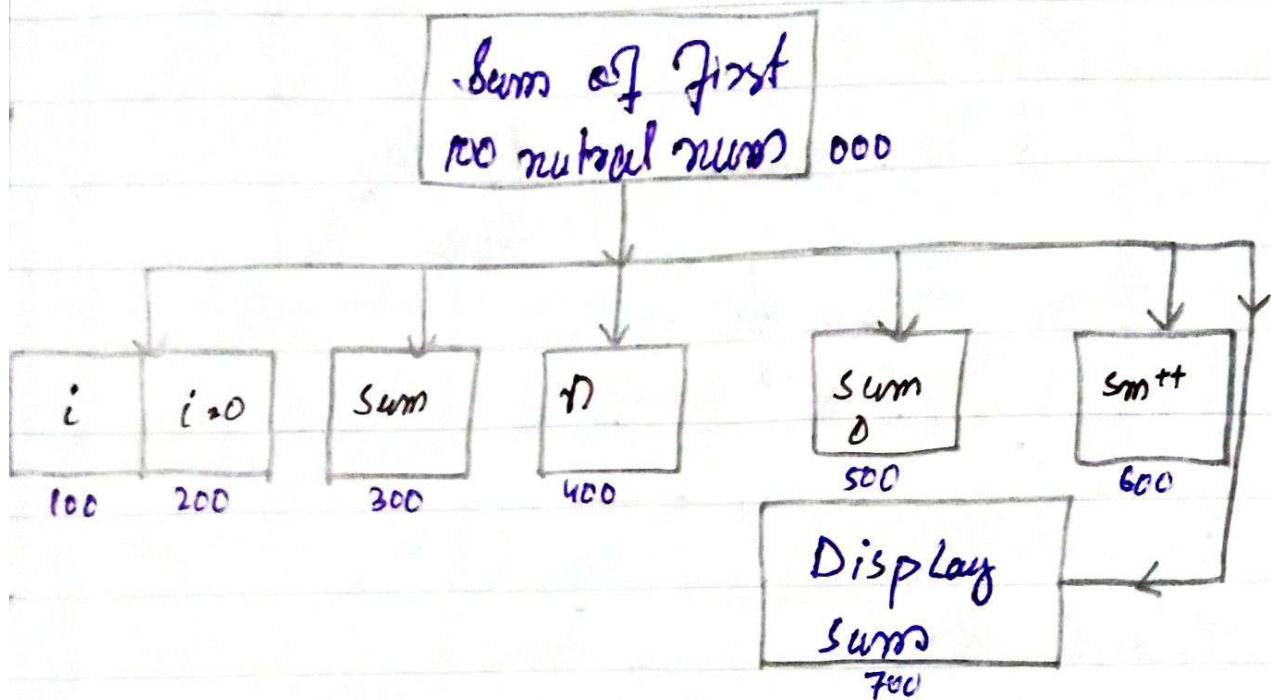
Q.3 Find sum of first 100 natural numbers

① Flow chart:-





## • HIPO CHART



## • IPO CHART:-

Input	Process	Module	Output
i	i = 0	100	Display
sum	sum 0	200	sum
	sum sum++	300	
	sum	400	
	n	500	

PAC:

Input	Process	Output
i	$i \leq 0$	Display Sum
Sum	$Sum \geq 0$ $Sum++$	

Pseudo code:

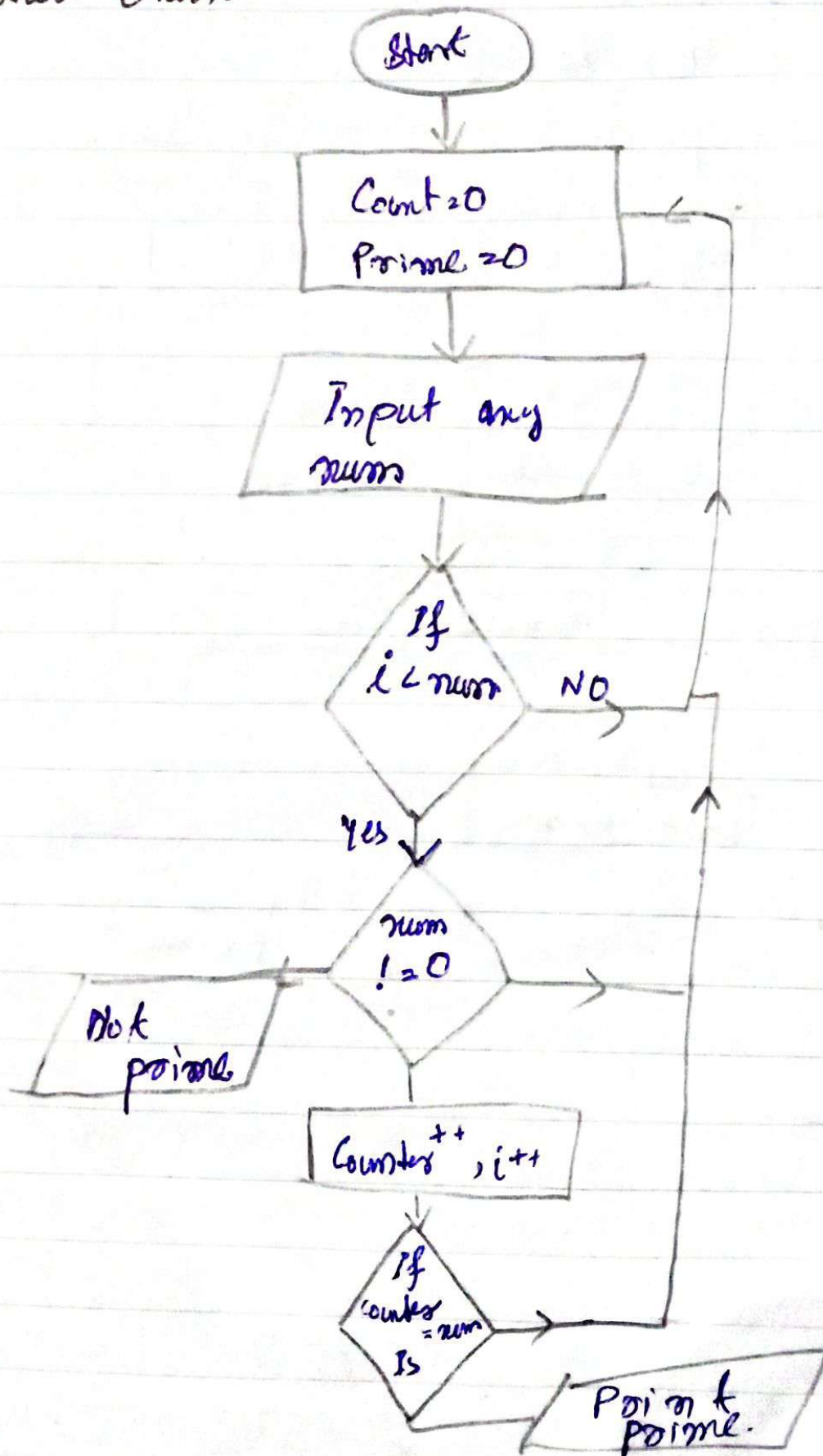
- $\Rightarrow$  Sum  $\geq 0$
- $\Rightarrow$  For  $i = 1, 10$
- $\Rightarrow$  Sum = Sum + i  
     $i = i + 1$
- $\Rightarrow$  End
- $\Rightarrow$  Out put the sum



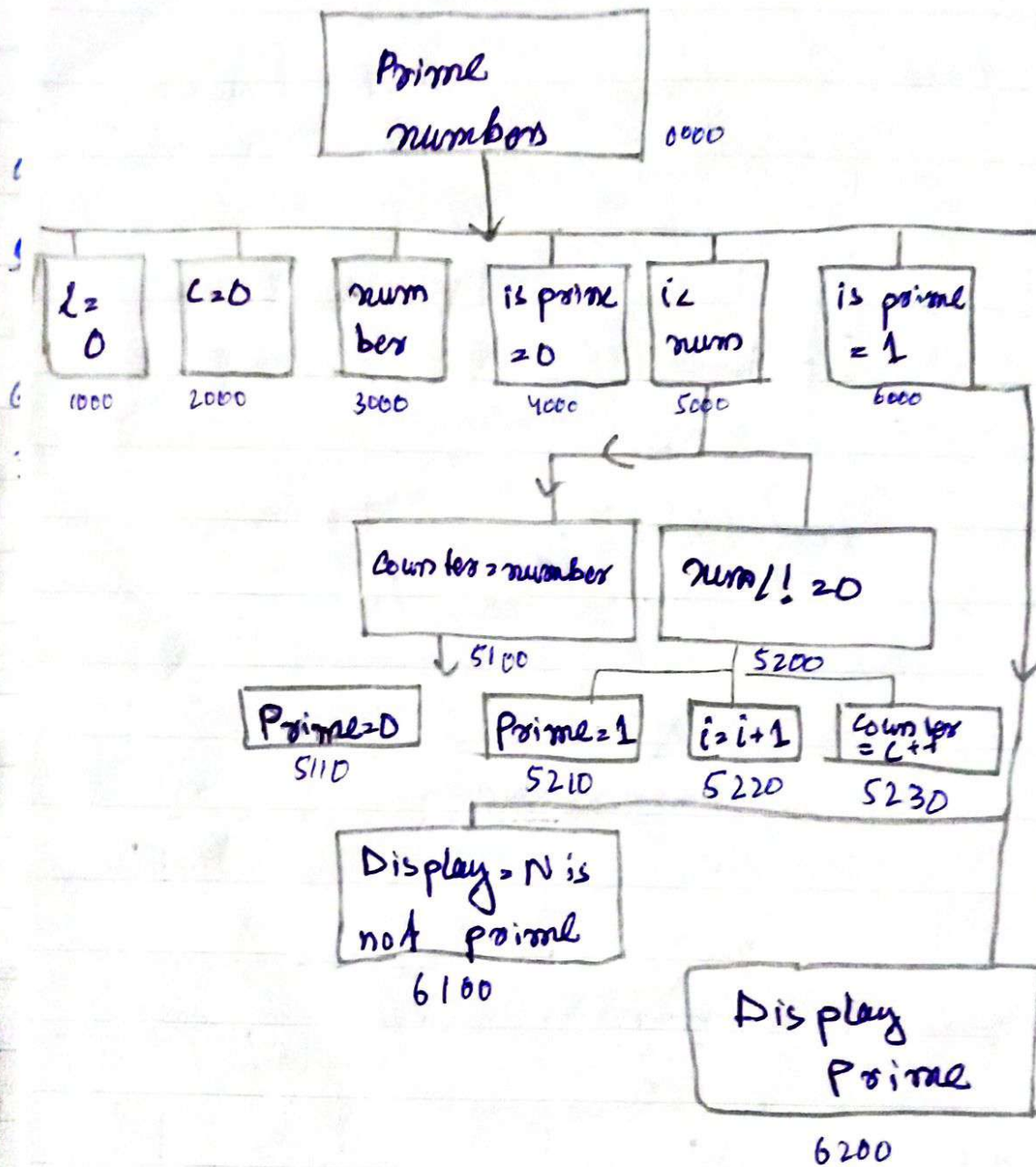
Q4

Determine the prime numbers.

Flow chart:-



• HIPO Chart:-





. IPO

Data	Process	Module	Output
Counter	Input Sum	1000	Shows prime num
i	$i < \text{num}$	2000	show the
Is prime	Counter <sup>++</sup>	3000	number is
	$i = i + 1$	4000	not prime
	Is prime	5000	
	Is prime	6000	

PAC

Data	Processing	Output
Counter	$i < \text{num}$	Display number is prime
I	$\text{num} / i \neq 0$	Display number is not prime
num is prime	$i++$ $\text{count} = \text{num}$ is prime = 1	

Pseudocode:-

Counter = 0

Is prime = 0

i = 2

Input Number

if (num % i != 0)  
Then

Counter++

i++

(The If Counter == num)

else Is prime

end

while

If (Prime = 1

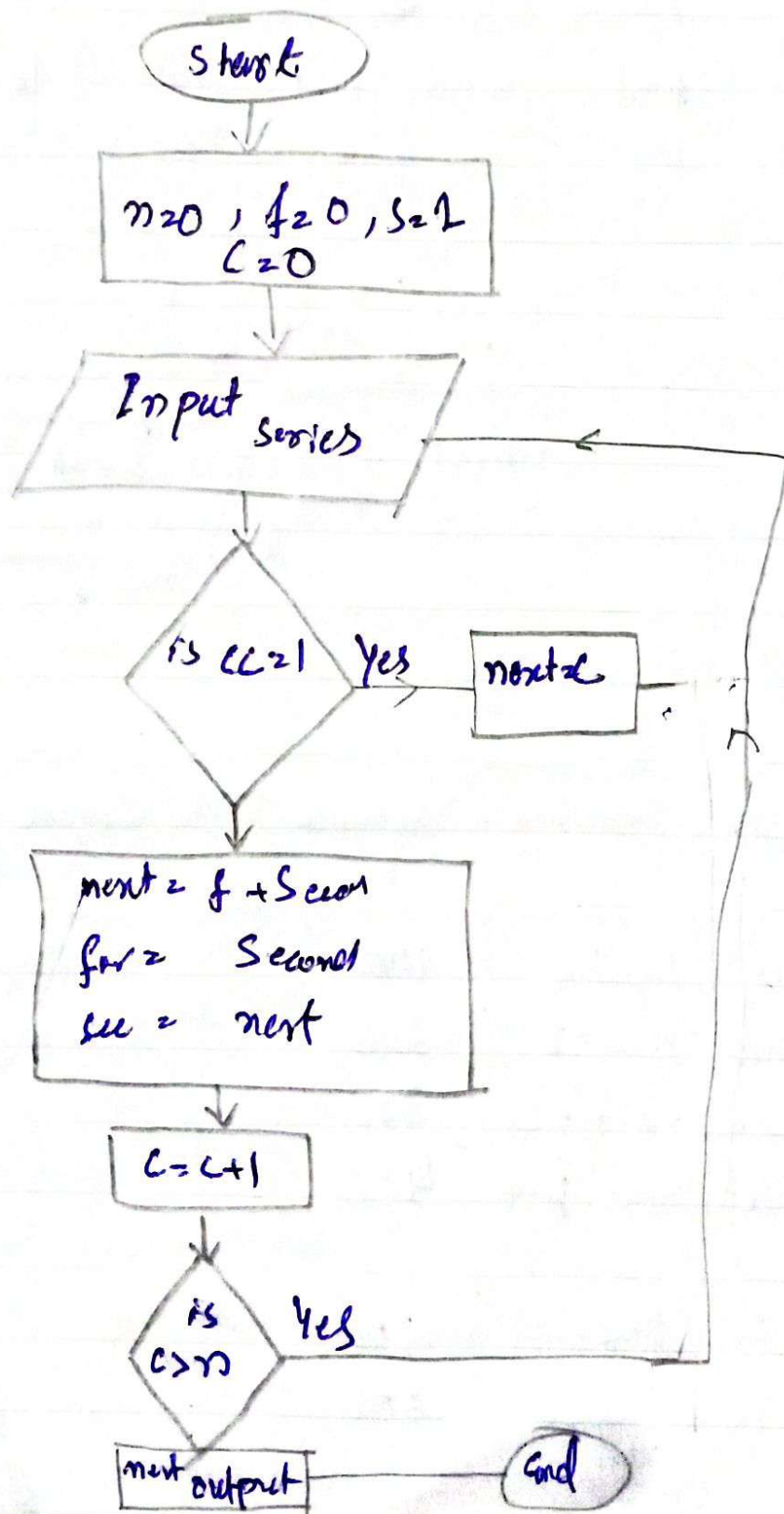
Then Output (num is prime)

Else output (num is not prime)

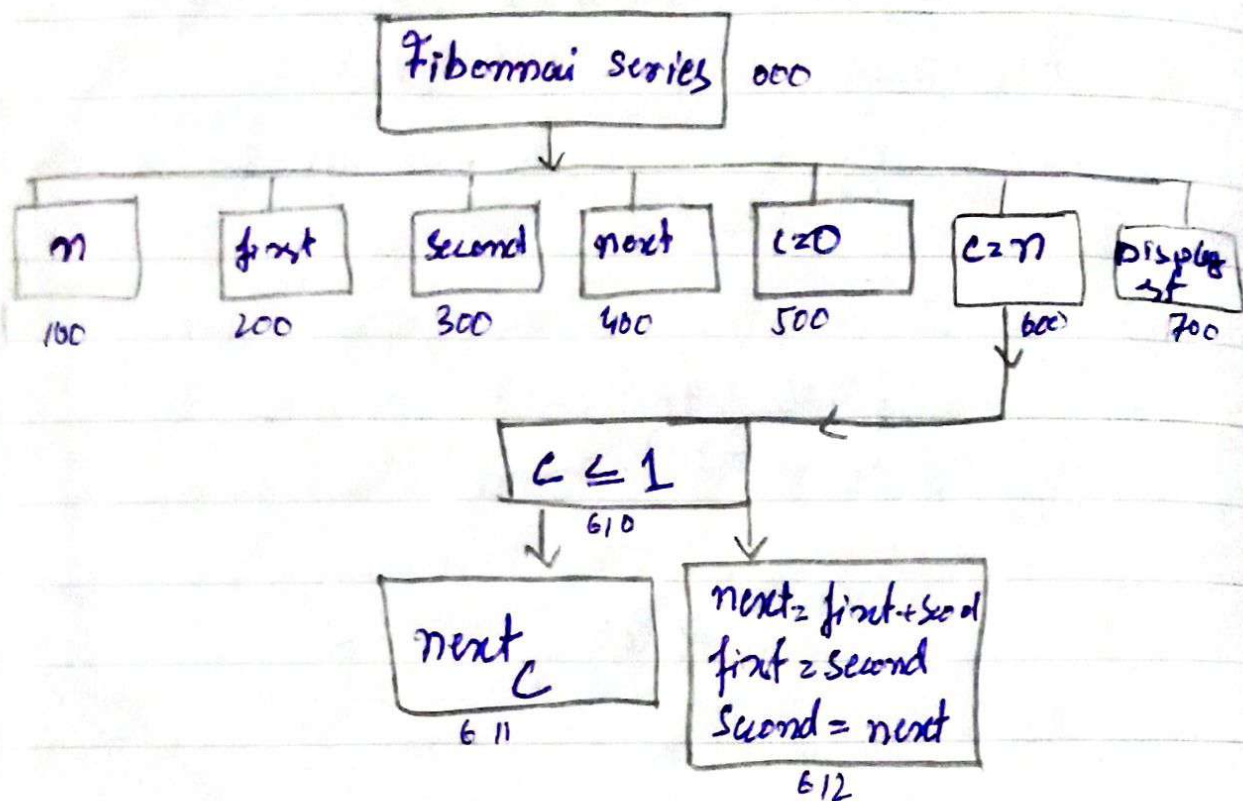


Qno 5

Program generate 50. Items  
of Fibonacci series 1, 1, 2, 3, 5, 8



## Hypo Chart



## IPO

Data	Processing	Module	Output
n	Input n	100	Display series
first	$c \leq 1$	200	
second	$next = c$	300	
next	$next = first$	400	
c	$first = sec$	500	
	second	600	
	next		



PAC:

Input	Processing	Output
$n$ first second next $C$	$C = 0$ $C < n$ $C = 1$ $next = C$ $next = C$ $next = first$ $+ second$ $Sec = next$	Display next

Pseudocode:-

- 2) Input  $n$
- 2) for  $k = 1 \Rightarrow n$ 
  - if  $(C \neq 1)$
  - ⇒ Then  $next = C$
  - otherwise
  - $next = first + second$
  - $first = second$
  - $second = next$
  - Output  $next$

## Pseudocode of Qnos (i)

$x, y, z$

- ① Input  $x, y, z$
- ② If  $(x > y, x > z)$  Print " $x$ " is greatest
- ③ Else If  $(y > x \ \& \ (y > z))$  print " $y$ " is greatest
- ④ Else print " $z$ " is greatest among all
- ⑤ End.