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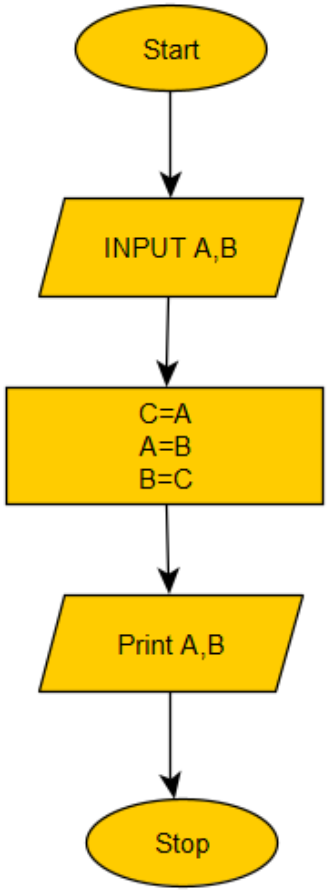
Class Assignment – 1

Q1. Write an algorithm and pseudo code and flow chart for swapping two numbers.

Sol:

Pseudocode: 1) Start
2) Input integer A
3) Input integer B
4) C = A
5) A = B
6) B = C
7) Print A
8) Print B
9) End



Algorithm:

1) Initiate the program

2) Declare new variable A, B and C

3) Read two no. A, B

4) Put C=A

5) Put A=B

6) Put B=C

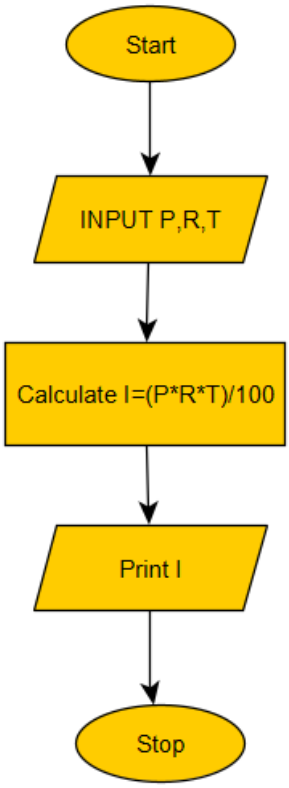
7) Print A, B

8) End / Terminate the program

Q2. Write an algorithm, pseudo code and flow chart for simple interest calculation.

Sol:

Pseudocode: 1) Start
2) Input integer P
3) Input integer R
4) Input integer T
5) S=(P*R*T)/100
6) Print S
7) End



Algorithm:

1) Initiate the program

2) Declare new variable P, R and T

3) Read P, R and T

4) Put S = (P*R*T)/100

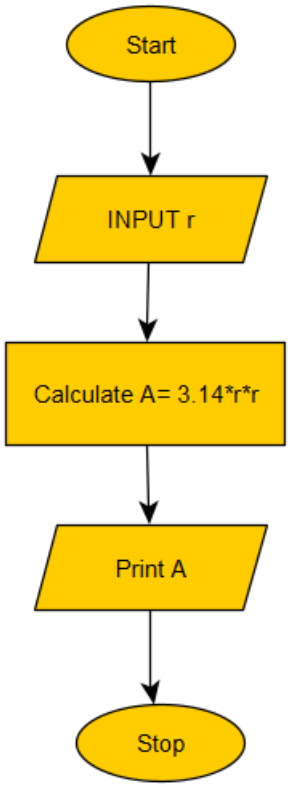
5) Print S

6) End / Terminate the program

Q3. Write an algorithm, pseudo code and flow chart for computing the area of the circle with radius given.

Sol:

Pseudocode: 1) Start
2) Input integer r
3) A=3.14*r*r
6) Print A
7) End



Algorithm:

1) Initiate the program

2) Declare new variable r and A

3) Read r

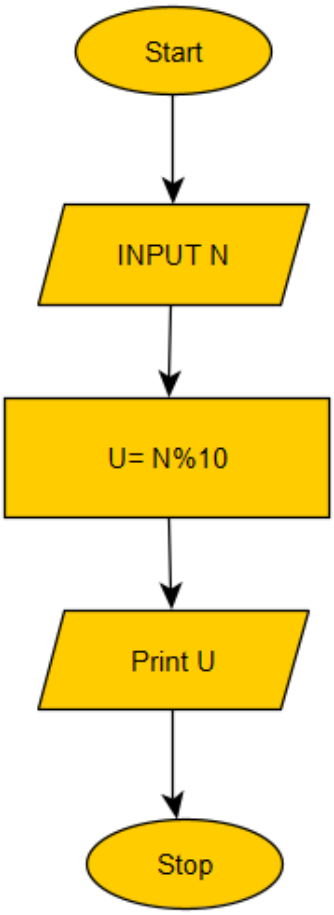
4) Put A = 3.14*r*r

5) Print A

6) End / Terminate the program

Q4. Write an algorithm, pseudo code and flow chart for extracting the unit digit of a given number.

Sol:



Pseudocode: 1) Start
2) Input integer N
3) U=N%10
6) Print U
7) End

Algorithm:

1) Initiate the program

2) Declare new variable N and U

3) Read N

4) Put U = N%10

5) Print U

6) End / Terminate the program

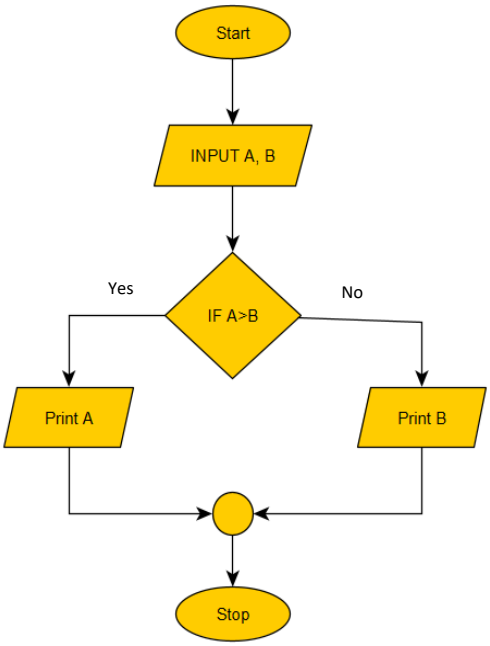
Q5. Write an algorithm, pseudo code and flow chart for calculating largest of two given numbers.

Sol:

Pseudocode: 1) Start
2) Input integer A,B

3) If A>B:
Print A
4) Else:
Print B

5) End



Algorithm:

1) Initiate the program

2) Declare new variable A and B

3) Read A, B

4) If A is greater and B ;

Print A

Or else:

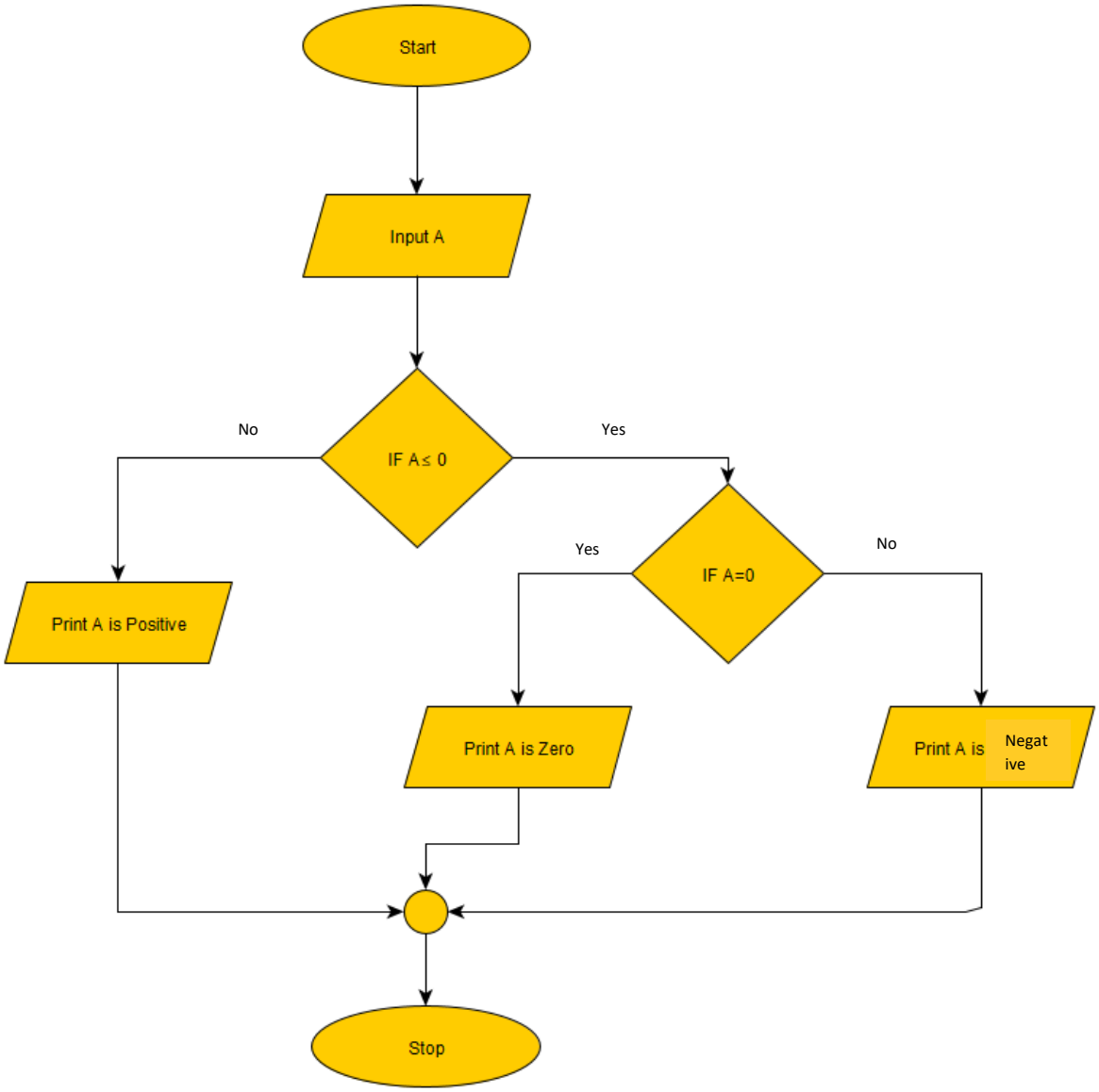
Print B

5) Print U

6) End / Terminate the program

Q6. Write an algorithm, pseudo code and flow chart for determining whether a given integer number is positive or negative.

Sol:



Pseudocode:

1) Start
2) Input integer A
3) If A ≤ 0:
    If A= 0:
        Print (“A is Zero.”)
    Else:
        Print (“A is Negative”)
4) Else:
        Print (“A is Positive”)
5) End

Algorithm:

1) Initiate the program

2) Declare new variable A

3) Read A

4) If A is lesser than or equal to 0:

IF A=0:

Print A is 0

Else:

Print A is Negative

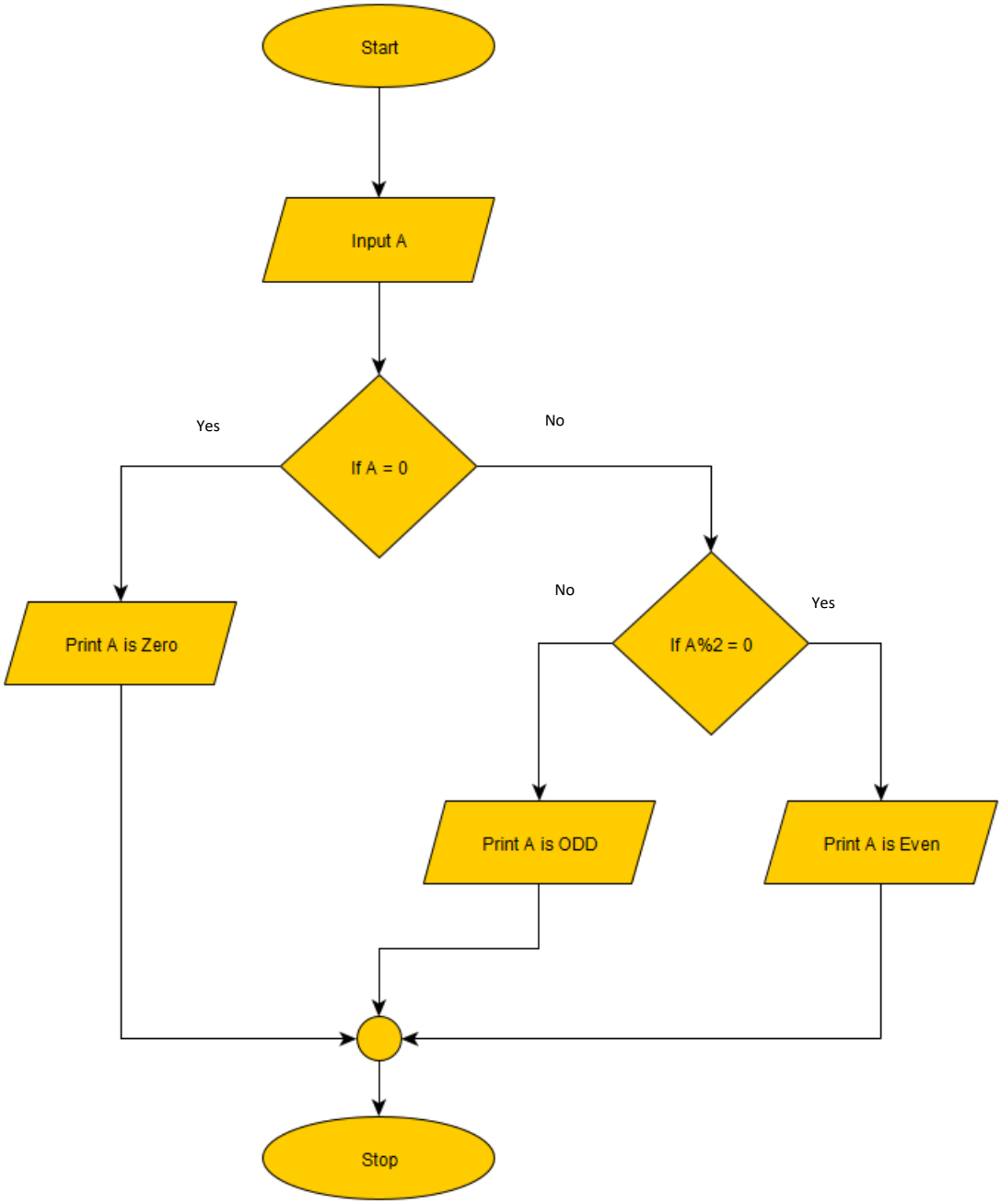
5) Or else:

Print A is Positive

6) End / Terminate the program

7. Write an algorithm, pseudo code and flow chart for determining if a number is odd or even.

Sol:



Pseudocode: 1) Start
2) Input integer A
3) If A=0:
Print (“A is Zero”)

6) Else:
If A%2=0:
Print (“A is Even”)

Else:
Print (“A is Odd”)
7) End

Algorithm:

1) Initiate the program

2) Declare new variable A

3) Read A

4) If A is 0:

Print A is ZERO

5) Else:

IF A%2=0:

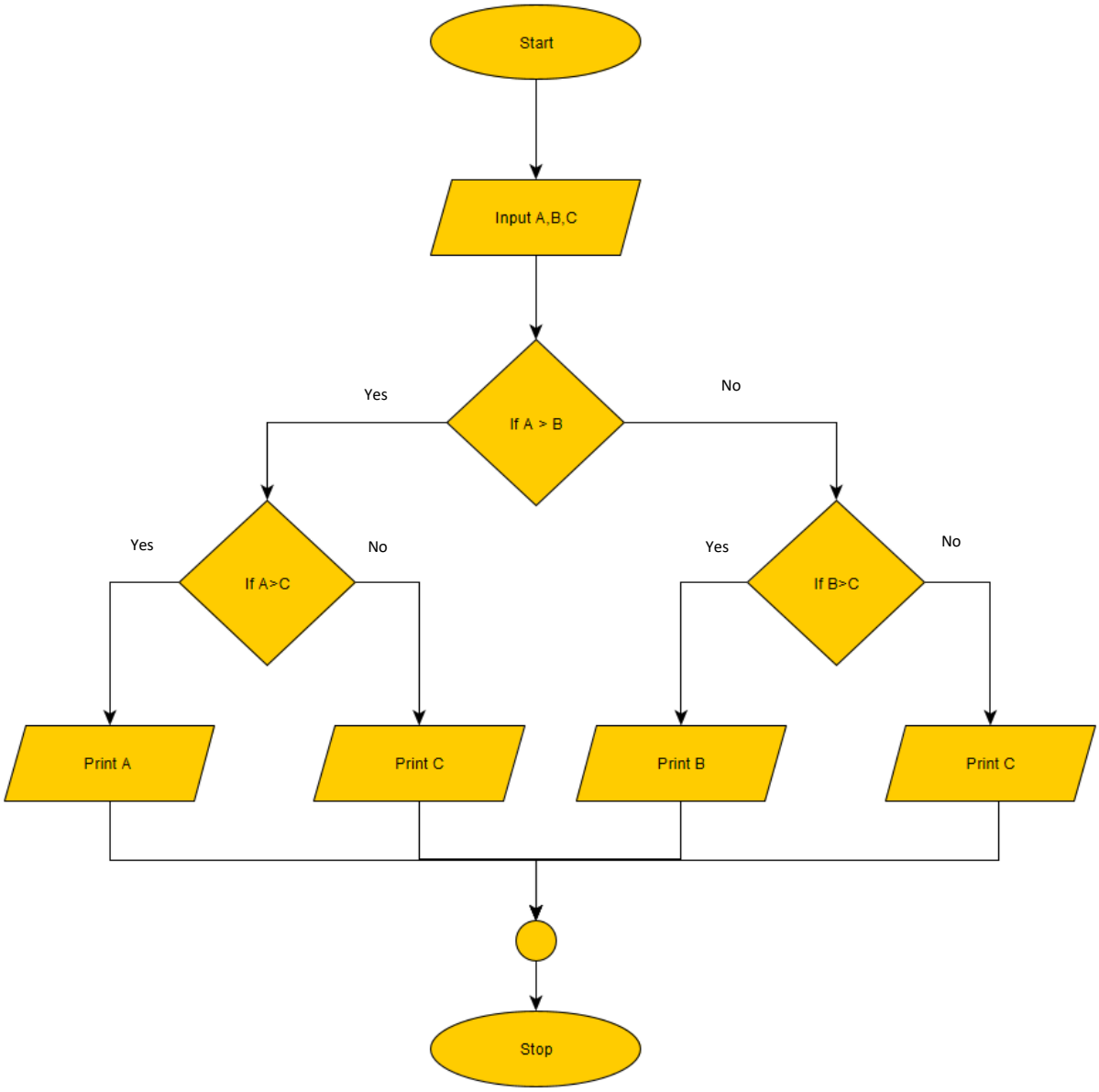
Print A is Even

Else:

Print A is Odd

6) End / Terminate the program

8. Write an algorithm, pseudo code and flow chart for finding the largest of three given numbers.



Sol:

Pseudocode: 1) Start
2) Input integer A,B,C

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3) If A>B:
        If A>C
            Print A
        Else
            Print C
4) Else if:
        If B>C
            Print B
        Else
            Print C
5) End
```

Algorithm:

1) Initiate the program

2) Declare new variable A and B

3) Read A, B

4) If A is greater and B ;

        Print A

   Or else:

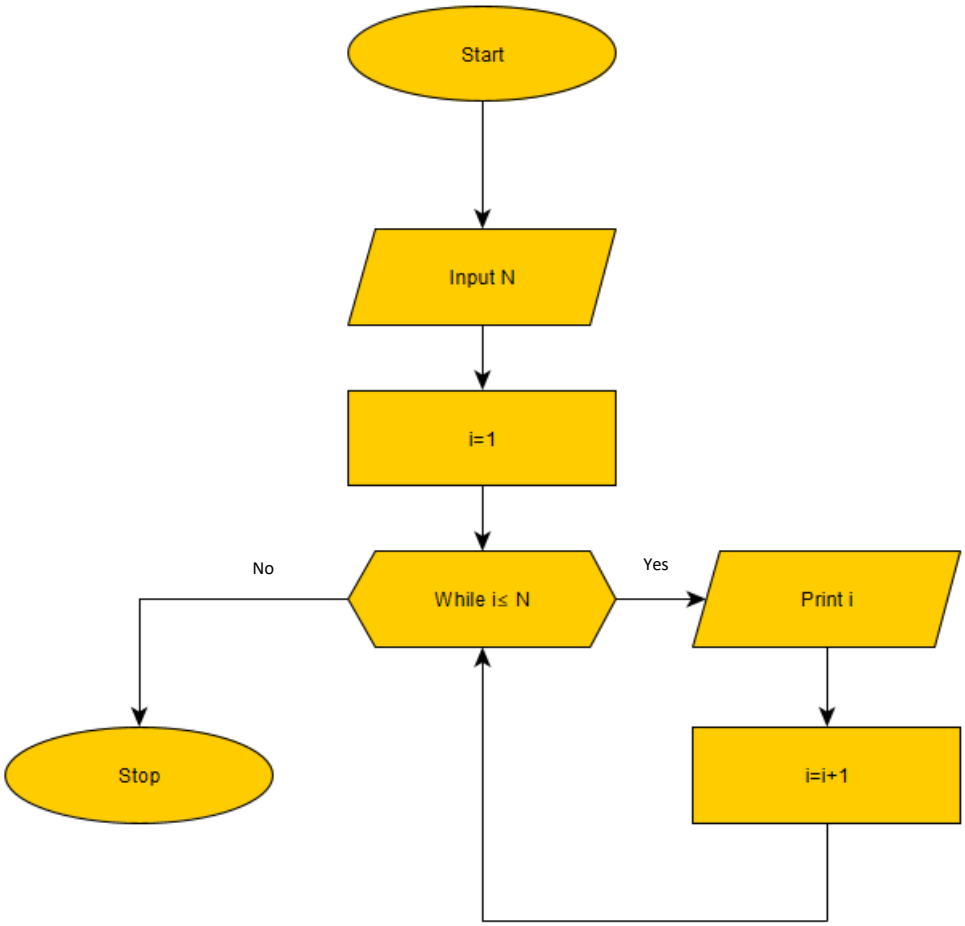
        Print B

5) Print U

6) End / Terminate the program

09. Write an algorithm, pseudo code and flow chart for printing first N natural nos.

Sol:



Pseudocode: 1) Start
2) Input integer N
3) i=1
4) While i≤N:
Print i
I=i+1
5) End

Algorithm:

1) Initiate the program

2) Input N

3) i=1

4) Repeat steps 5 and 6 until I ≤ N

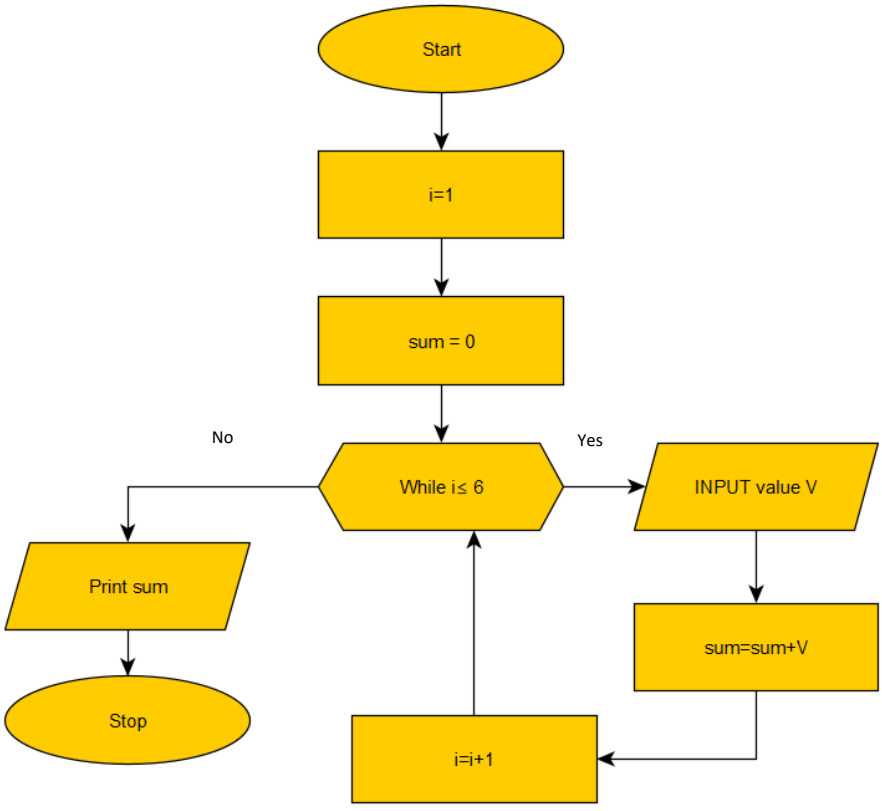
5) Print i

6) i=i+1

7) End / Terminate the program

10. Design an algorithm for adding the test score as 26,49,98,87,62,75.

Sol:



Psuedocode:1) Start

2) i=1

3) sum=0

4) While i≤6:

Input V

sum=sum+V

i=i+1

5) Print sum

6) End

Algorithm:

1) Initiate the program

2) Declare variable i as i=1

3) Declare variable sum as sum=0

4) Repeat steps 5, 6 and 7 until I ≤ 6

5) Input integer V

6) sum=sum+1

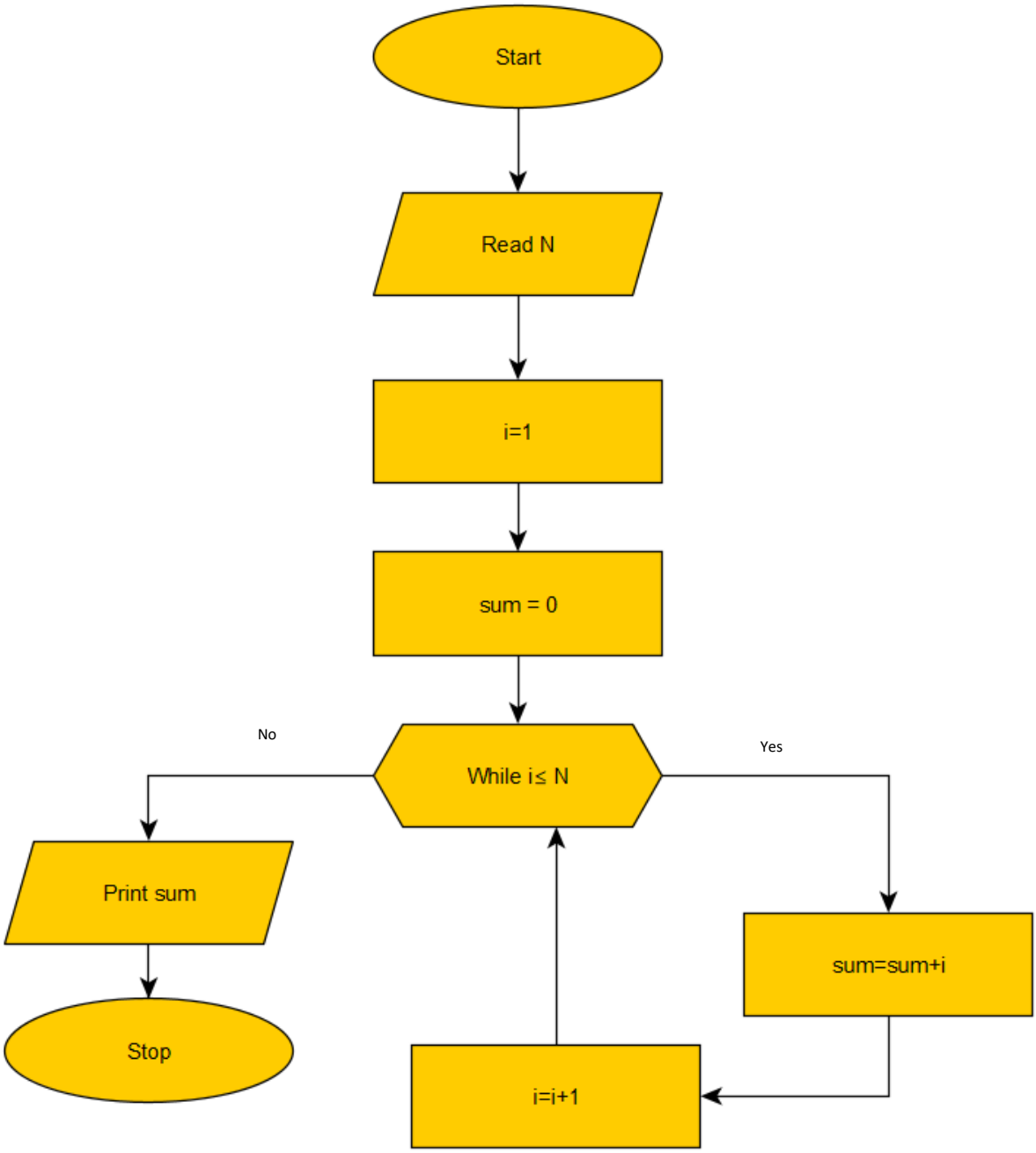
7) i=i+1

8) Print sum

9) End / Terminate the program

Q11. Write an algorithm, pseudo code and flow chart for finding the sum of n natural nos

Sol:



Psuedocode:1) Start

2)Input N

3) i=1

4) sum=0

5) While i≤N:

sum=sum+i

i=i+1

6) Print sum

7) End

Algorithm:

1) Initiate the program

2) Read N

3) Declare variable i as i=1

4) Declare variable sum as sum=0

5) Repeat steps 6 and 7 until I ≤ N

6) sum=sum+i

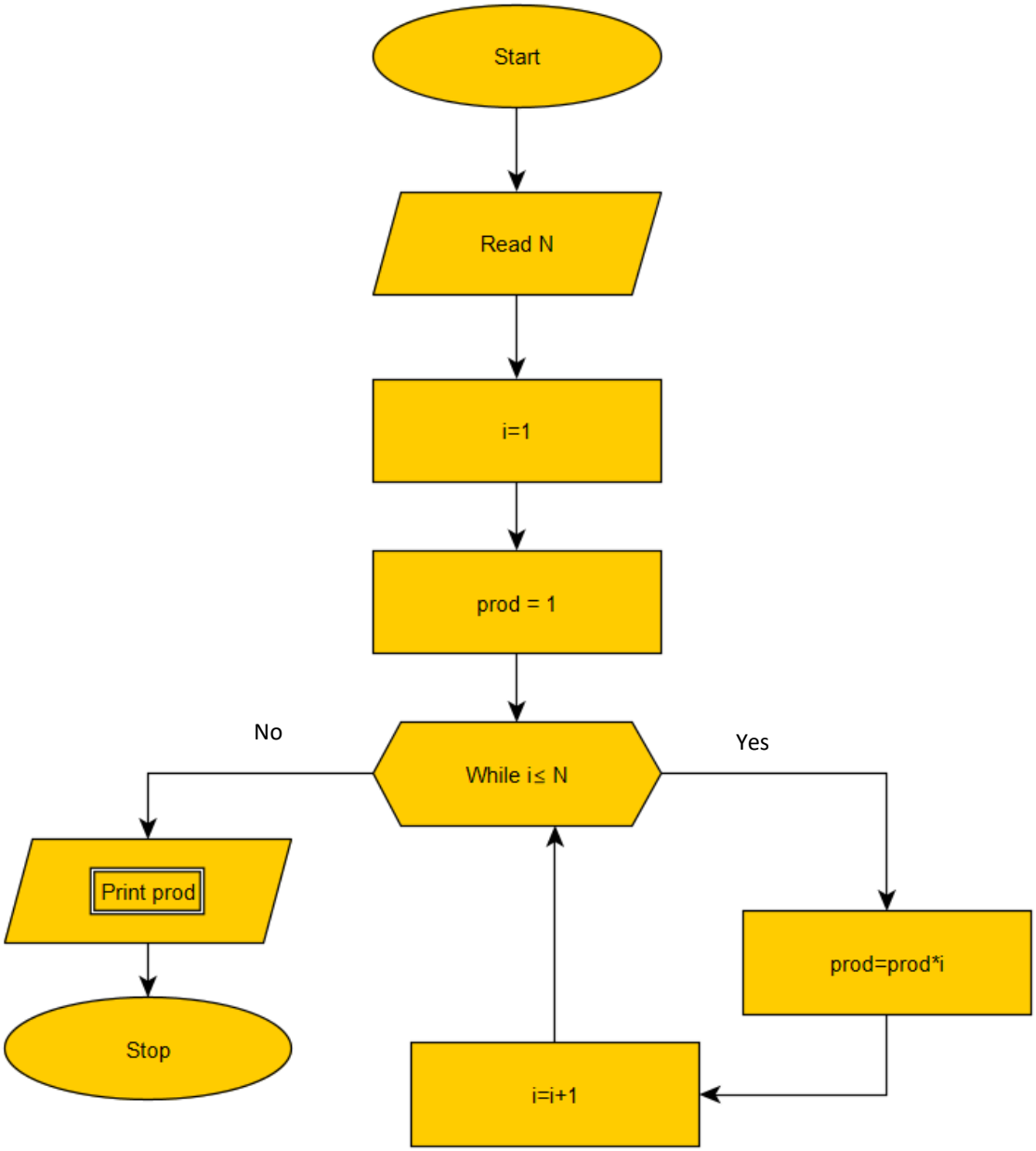
7) i=i+1

8) Print sum

9) End / Terminate the program

Q12. Write an algorithm, pseudo code and flow chart for finding the Factorial of n natural nos

Sol:



Psuedocode:1) Start
2)Input N
3) i=1
4) prod=1
5) While i≤N:
prod=prod*i
i=i+1
6) Print prod
7) End

Algorithm:

1) Initiate the program

2) Read N

3) Declare variable i as i=1

4) Declare variable prod as prod=1

5) Repeat steps 6 and 7 until i ≤ N

6) prod=prod*i

7) i=i+1

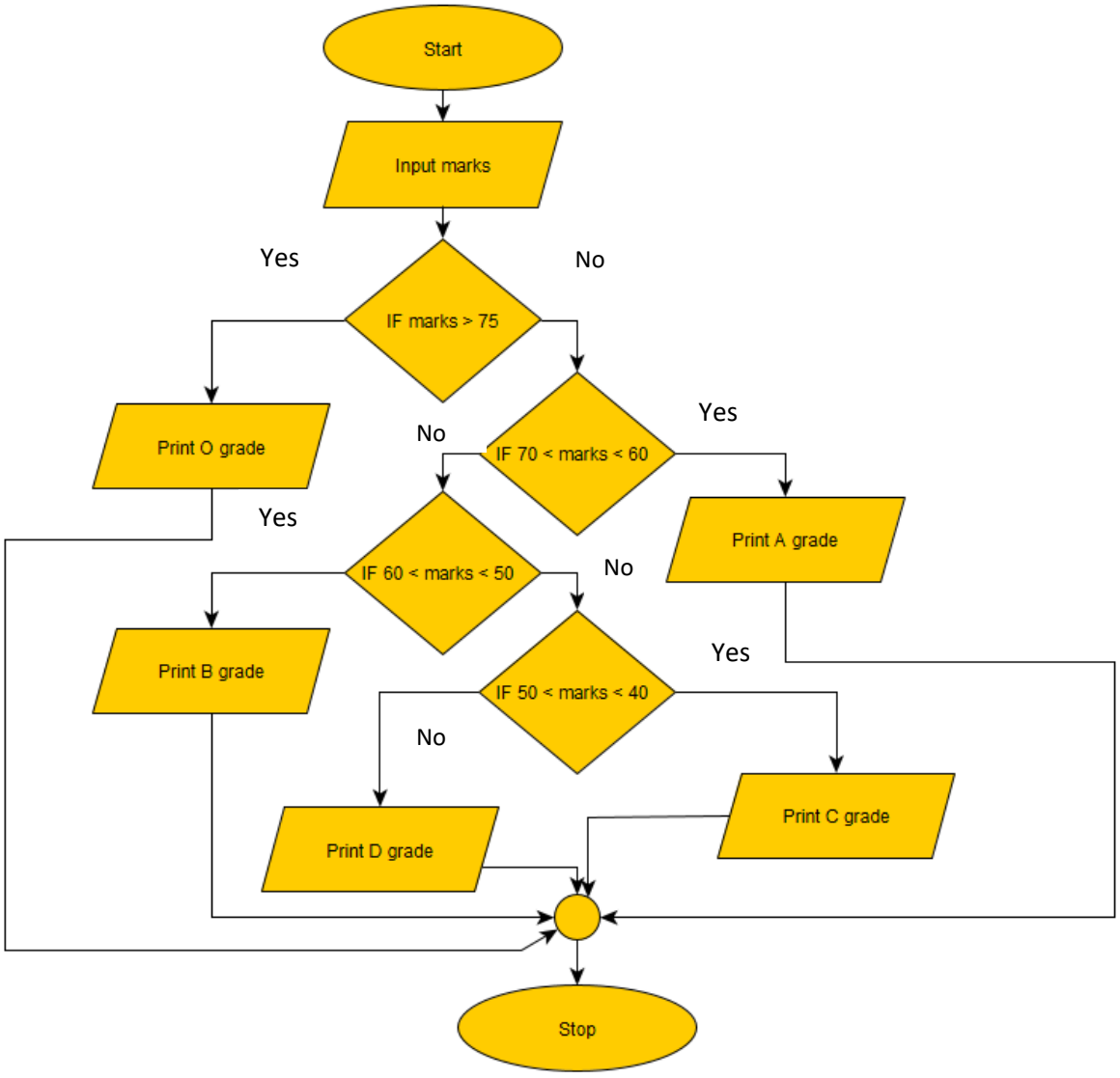
8) Print prod

9) End / Terminate the program

Q13.Write the pseudo code to print the grade obtained by a student using the following rules:

Marks - Grade
above 75 - O
60-70 - A
50-60 - B
40-50 - C
less than 40 – D

Sol:



PseudoCode: 1) Start

2)Input marks

3) If marks >75

Print O grade

4) Else If 70 < marks < 60

Print A grade

5) Else If 60 < marks < 50

Print B grade

6) Else If 50 < marks < 40

Print C grade

7) Else

Print D grade

8) End

Algorithm:

1) Initiate the program

2) Read Marks

3) if marks >75 ,print O grade

4) else If 70 < marks < 60 , print A grade

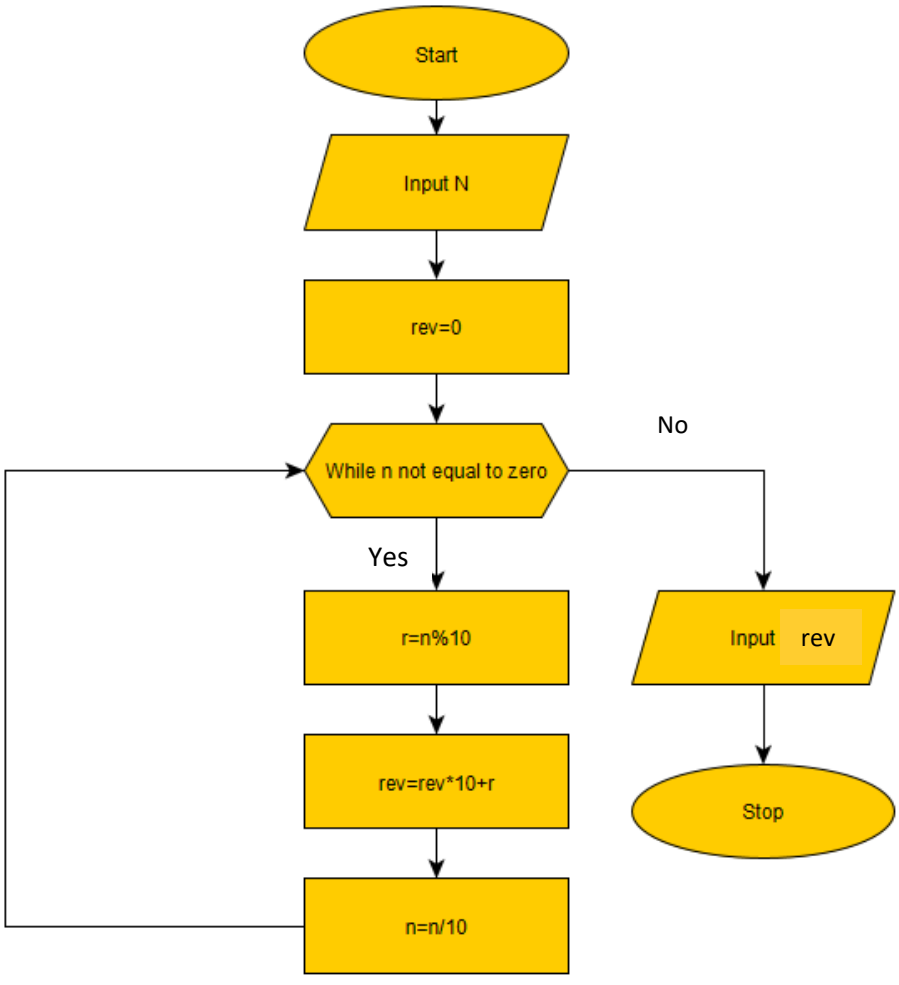
5) else If 60 < marks < 50 , print B grade

6) else If 50 < marks < 40 , print C grade

7) else print D grade

8) End / Terminate the program

Q14.Write the pseudo code to print the reverse of a no.



Psuedocode:1) Start

2)Input N

3) rev=0

4) While i!=N:

r=n%10

rev=rev*10+r

n=n/10

5) Print

6) End

Algorithm

1) start

2) read n

3) Set rev=0

4) repeat steps 5,6 & 7 unit n!=0

5) set r = n % 10

6) set rev = rev*10 + r

7) set n=n/10

8) print rev

9) stop

Q15.Write the pseudo code to add 2 no.s .

Sol:

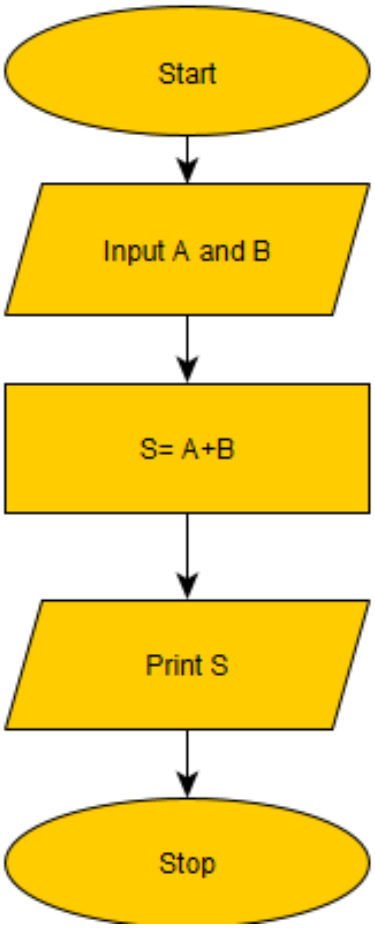
Pseudocode: 1) Input A

2) Input B

3) S=A+B

4) Print S

5) End



Algorithm: 1) Read two integers A and B

2) Declare variable S

3) S= A+B

4) Print S

5) End