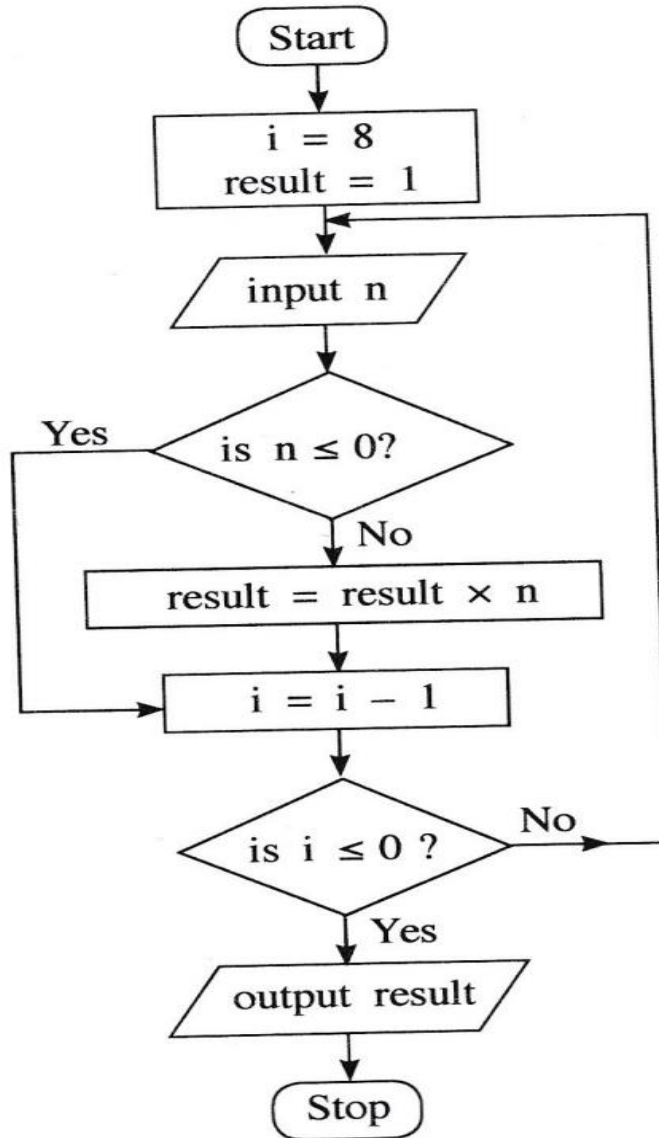


Consider the following flowchart to answer the question 1 -3.



1. Which of the following statements is/are correct about the algorithm expressed by the flowchart?

A- It takes 8 inputs.

B- It outputs the product of the positive numbers in the input.

C- If every input is zero, then the output will be zero.

1) A only 2) B only 3) C only 4) A and B only 5) B and C only

2. If the following is fed as the input to the algorithm, what will be the output?

3 2 -4 4 1 -9 5 -6 -1

1) -25920 2) -216 3) 120 4) 216 5) 25920

3. Which of the following Python programs has/have the same functionality (i.e., the same output for a given input) as the algorithm in the flowchart above?

```
A - i = 8
    result = 1
    while (i > 0):
        n = int(input())
        if (n > 0):
            result = result * n
        i = i - 1
    print (result)
```

```
B - result = 1
    for i in range(8):
        n = int(input())
        if (n > 0):
            result = result * n
    print (result)
```

```
C - result = 1
    i = 8
    while 1:
        n = int(input())
        if (not(n <= 0)):
            result = result * n
        i = i - 1
        if (i <= 0):
            break
    print (result)
```

1) A only 2) B only 3) C only 4) A and B only 5) All A, B and C

3. Which of the following statements is correct?

- 1) A high-level language program that is translated into machine code and executed on computer X will not execute on another computer having the same processor as X.
- 2) A program in a high-level language must be first converted into assembly language code before converting into machine code.
- 3) Interpreted programs run faster than compiled ones.
- 4) Programs in some high-level languages are translated into a form called byte-code because such byte-codes execute faster than machine codes obtained by usual compilations.
- 5) Some modern processors execute programs in high-level languages without translating them into machine code.

4. What is the value of the following Python expression?

$(100//3) \% 4 \mid 8$

- 1) 0 2) 0.125 3) 3 4) 8 5) 9

5. What will be the output if the following Python code is executed with “abcabc” as the input?

```
result = 1
s = input()
if (len(s) > 3):
    result = 2
if (len(s) < 6):
    result = 3
elif (len(s) > 6):
    result = 4
else:
    result = 5
print(result)
```

- 1) 1 2) 2 3) 3 4) 4 5) 5

6. What will be the output of the following Python code?

```
x = 100
for i in range(1,5):
    x = x - i
print(x)
```

- 1) 0 2) 5 3) 85 4) 90 5) 100

7. What will be the output of the following Python code segment?

```
L = [1,-2,4,3,2,-7,11,2,8,-1]
x = 0
for i in range(len(L)):
    if (L[i] < 0):
        continue
    if (L[i] > 10):
        break
    x = x + L[i]
print(x)
```

- 1) 0 2) 1 3) 10 4) 21 5) 31

8. What will be the result when the following Python code is executed?

```
x = 50
def func(y):
    x = 2
    y = 4
func(x)
print(x)
```

- 1) 50
2) 2
3) 4
4) Syntax error
5) Name error

9. Consider the following Python program:

```
x = 0
n = int(input())
while (n > 0):
    if n > x:
        x = n
    n = int(input())
print(x)
```

i) Write the output of the program if the input is 4 6 3 2 8 -1.

.....

.....

.....

ii) What is the purpose of the program?

.....

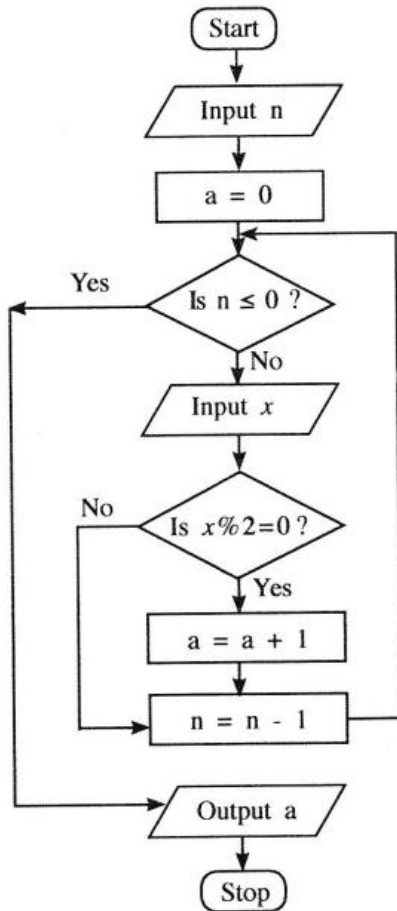
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10. (a) The ICT teacher in a school needs to process the marks obtained by all the students in a class for the ICT subject and compute the average mark for the class. Construct a flow chart to express an algorithm for this purpose. Assume that the first input is the number of students in the class, n. Next, the marks of n students will be input one -by-one.

(b) Consider the flow chart given below. Note that $x \% 2$ represents $(x \bmod 2)$.



(i) What would be the output if the first input (n) was 6 and the next inputs were 3, 6, 4, 12, 11, 9?

(ii) What is the purpose of this algorithm?

(iii) Develop a Python program to implement the algorithm expressed by the flow chart.