Important Concepts and Tips to Solve Input & Output Problems in Reasoning:

**DIRECTIONS:** Study the following information carefully and answer the given questions

A word and number arrangement machine when given an input line of words and numbers, rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement

**Input:** based 18 scheme 49 after 9 interested 25 aadhar 4 payment 42

**Step I:** aadhar 4 based 18 scheme 49 after 9 interested 25 payment 42

**Step II:** aadhar 4 after 9 based 18 scheme 49 interested 25 payment 42

**Step III:** aadhar 4 after 9 based 18 interested 25 scheme 49 payment 42

**Step IV:** aadhar 4 after 9 based 18 interested 25 payment 42 scheme 49

Step IV is the last step of the above input as the desired arrangement is obtained. As per the rules followed in the above question find the appropriate step for the given input

**Input:** people 100 India 24 added 9 countries 12 democratic 16 eligible 19

1). How many steps will be required to complete the above input?

   a) Five  
   b) Six  
   c) Eight  
   d) Nine  
   e) Four  

2). In Step III what will be the position of 16 from left?
a) Third
b) Seventh
c) Fifth
d) Sixth
e) Eighth

3). How many numbers exist between 9 and 24 in Step V?

a) Two
b) Three
c) Four
d) Six
e) Five

4). In Step IV, if 16 is related to 19 then which number or word will 9 be related to?

a) 24
b) People
c) 12
d) 100
e) Eligible

5). Which of the following steps would be the last step but one?

a) VI
b) IV
c) II
d) V
e) VII
An input-output sequence
An input for which output should be determined following the given input-output sequence

SOLUTION:

Consider the given input-output sequence

**Input:** based 18 scheme 49 after 9 interested 25 aadhar 4 payment 42

**Step I:** aadhar 4 based 18 scheme 49 after 9 interested 25 payment 42

**Step II:** aadhar 4 after 9 based 18 scheme 49 interested 25 payment 42

**Step III:** aadhar 4 after 9 based 18 interested 25 scheme 49 payment 42

**Step IV:** aadhar 4 after 9 based 18 interested 25 payment 42 scheme 49

Here Step IV is the output

We should analyse the above sequence in order to obtain the output for the given input sequence

- From the output we can see that the words and numbers of the input are arranged alternatively
- The words are arranged as per the alphabetical order from left to right
- The number are arranged in ascending order from left to right
- Now we should analyse the Step by Step rearrangement of the input to obtain the output
- It should be noted that a word and a number are rearranged jointly in each Step
The 1st word as per the alphabetical order and the lowest number (aadhar 4) are shifted from their original positions to the left end of the sequence in Step I.

Similarly the 2nd word as per the alphabetical order and the 2nd lowest number (after 9) are shifted from their positions next to ‘aadhar 4’ in Step II and so on.

This rearrangement will be done until the words and numbers are arranged as per the alphabetical order and ascending order respectively.

The same pattern of rearrangement should be followed to obtain the required output from the given input.

Input: people 100 India 24 added 9 country 12 democratic 16 eligible 19

In Step I, the 1st word as per the alphabetical order and the lowest number should be shifted to the left end.

Here the combination of word and number that should be rearranged is ‘added 9’

Step I: added 9 people 100 India 24 country 12 democratic 16 eligible 19

In Step 2, the 2nd word as per the alphabetical order and the second lowest number i.e., ‘country 12’ should be rearranged after the combination ‘added 9’

Step II: added 9 country 12 people 100 India 24 democratic 16 eligible 19

In Step 3, the combination ‘democratic 16’ i.e., 3rd word as per the alphabetical order and the 3rd lowest number should be rearranged.

Step III: added 9 country 12 democratic 16 people 100 India 24 eligible 19
In Step 4, the next combination ‘eligible 19’ should be rearranged as eligible is next available word after democratic as per the alphabetical order and 19 is the next highest number after 16.

Step IV: added 9 country 12 democratic 16 eligible 19 people 100 India 24

The next combination of word and number that should be rearranged after eligible 19 is India 24. Therefore

Step V: added 9 country 12 democratic 16 eligible 19 India 24 people 100

All the words and numbers are arranged as per the output requirement where the words are arranged as per the alphabetical order and the numbers are in ascending order from left to right.

Therefore Step V – Output

**ANSWER:**

**Input:** people 100 India 24 added 9 country 12 democratic 16 eligible 19

**Step I:** added 9 people 100 India 24 country 12 democratic 16 eligible 19

**Step II:** added 9 country 12 people 100 India 24 democratic 16 eligible 19

**Step III:** added 9 country 12 democratic 16 people 100 India 24 eligible 19

**Step IV:** added 9 country 12 democratic 16 eligible 19 people 100 India 24

**Step V:** added 9 country 12 democratic 16 eligible 19 India 24 people 100

**QUESTION 1:** Five steps is required to complete the given input

a) Five
QUESTION 2:

Step III: added 9 country 12 democratic 16 people 100 India 24 eligible 19

The position of 16 from the left is SIXTH from the left

d) Sixth

QUESTION 3:

Step V: added 9 country 12 democratic 16 eligible 19 India 24 people 100

There are ‘three’ numbers between 9 and 24 (12, 16 and 19)

b) Three

QUESTION 4:

Step IV: added 9 country 12 democratic 16 eligible 19 people 100 India 24

If 16 is related to 19, then 9 is related to ‘12’ as they are consecutive pairs in ascending order of the given numbers

c) 12

QUESTION 5:

Step 4 is the last but one step of the given input

b) IV