Input Output

Input Output is a process of rearrangement of data or sequence or message consisting of words or number or both based on some rule. In Input Output reasoning questions, a sequence of words, letters or both is considered as an input and then this input is passed through a processing machine or reorganized to give the sequential outputs.

Candidates need to trace the pattern used in reorganizing the different elements of the input and subsequently determine the required final output or last step, "elements" position, in some specified way. Based on the elements present at input and the process followed for rearrangement or these elements, there can be many patterns on which questions can be asked.

Types of Input Output

As now we have a basic idea of questions related to the Input Output section. Let us see the various types of questions that you may come across from below.

1. Single Shifting

In this type of Input Output, letters or numbers rearrangement will take place from only one end such as either from right end or left end.

2. Double Shifting

In this type of Input Output, letters or numbers rearrangement will take place from both ends simultaneously.

3. Operation Based

In this type of Input Output, different operations will be performed on words and numbers while rearrangements take place.

4. Box Based

In this type of Input Output, numbers will be given and different operations need to be applied on it in each step.

How to Solve Question Based on Input Output- Know all Tips and Tricks

Candidates can find various tips and tricks from below for solving the questions related to the Input Output section.

Tip # 1: The easiest and fastest way to figure out a pattern is to identify the pattern of arrangement in the last step, and then work backwards to find how the processing is to be done.

Tip # 2: In shifting type input output the shifting can be various types and can involve various steps, so to conclude, all such steps would not be possible, some examples are given below to have a more clear idea about the type of questions asked in exams.

Tip # 3: Candidates should look for the patterns given below in sequence to solve the questions related to Input Output reasoning.

- By arranging the given words in forward or reverse alphabetical order
- By arranging the given numbers in ascending or descending order
- By writing a particular set of words in the reverse order, stepwise
- By changing places of word/numbers according to a set pattern

Input Output Sample Questions

Question 1: Study the following information carefully and answer the given questions.

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

Input: expected 20 more funniest 31 42 sea 51 rings 26 79 joyful

Step I: expected funniest 20 more 31 42 sea 51 rings 26 79 joyful

Step II: expected funniest 79 51 20 more 31 42 sea rings 26 joyful

Step III: expected funniest 79 51 joyful more 20 31 42 sea rings 26

Step IV: expected funniest 79 51 joyful more 42 31 20 sea rings 26

Step V: expected funniest 79 51 joyful more 42 31 rings sea 20 26

Step VI: expected funniest 79 51 joyful more 42 31 rings sea 26 20

And Step VI is the last step of the above input, as the desired arrangement is obtained.

As per the hides followed in the above steps, find out in each of the following questions the appropriate step for the given input.

Input: blood 21 all 25 my 57 91 equals 59 strengthens 24 and

How many elements are there between 25 and 24 in step V?

Solution:

In the given illustration:

In Step I, Two words were picked and arranged in alphabetical order and were finally placed at the left corner

In Step II, Two numbers were picked and arranged in descending order next to words and so on.

Before answering any of the questions, first we will solve the Input String that will help us to solve questions much more easily and much faster.

Input: blood 21 all 25 my 57 91 equals 59 strengthens 24 and

Step I: all and blood 21 25 my 57 91 equals 59 strengthens 24

Step II: all and 91 59 blood 21 25 my 57 equals strengthens 24

Step III: all and 91 59 blood equals 21 25 my 57 strengthens 24

Step IV: all and 91 59 blood equals 57 25 21 my strengthens 24

Step V: all and 91 59 blood equals 57 25 my strengthens 21 24

Step VI: all and 91 59 blood equals 57 25 my strengthens 24 21

Hence, in this illustration Step VI is the final step.

There are 3 elements between 24 and 25.

Question 2 : Study the following information carefully and answer the questions given below.

A word and number arrangement machine, when given a particular input, rearranges it following a particular rule.

Input: gate 20 86 just not 71 for 67 38 bake sun 55

Step I: bake gate 20 just not 71 for 67 38 sun 55 86

Step II: for bake gate 20 just not 67 38 sun 55 86 71

Step III: gate for bake 20 just not 38 sun 55 86 71 67

Step IV: just gate for bake 20 not 38 sun 86 71 67 55

Step V: not just gate for bake 20 sun 86 71 67 55 38

Step VI: sun not just gate for bake 86 71 67 55 38 20

And step VI is the last step of the above input as the desired arrangement is reached

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

Input: 31 rise gem 15 92 47 aim big 25 does 56 not 85 63 with moon

How many steps will be required to complete the rearrangement?

Solution:

In the given illustration:

Numbers are arranged in descending order and Words are arranged in descending order as per their position in the dictionary.

A word and number is arranged simultaneously in each step.

In the first step, the lowest word as per dictionary is arranged at the leftmost position i,e. the first position and highest number is arranged at rightmost position, which is the last position of the sentence, both word and number are arranged simultaneously and else all are shifted accordingly.

In step 2, next lowest word as per dictionary is placed again at first position such as immediate left to the previously arranged word and next highest number is placed at last position such as immediate right to previously arranged number and else all are shifted accordingly.

The same process is followed till all the words and numbers are rearranged as all words at left side in decreasing order as per dictionary, and all numbers at right side of the lowest word in decreasing order.

We will follow the same rule for given input.

Input: 31 rise gem 15 92 47 aim big 25 does 56 not 85 63 with moon

Step I: aim 31 rise gem 15 47 big 25 does 56 not 85 63 with moon 92

Step II: big aim 31 rise gem 15 47 25 does 56 not 63 with moon 92 85

Step III: does big aim 31 rise gem 15 47 25 56 not with moon 92 85 63

Step IV: gem does big aim 31 rise 15 47 25 not with moon 92 85 63 56

Step V: moon gem does big aim 31 rise 15 25 not with 92 85 63 56 47

Step VI: not moon gem does big aim rise 15 25 with 92 85 63 56 47 31

Step VII: rise not moon gem does big aim 15 with 92 85 63 56 47 31 25

Step VIII: with rise no moon gem does big aim 92 85 63 56 47 31 25 15 Step VIII is the last step of the given input.

Hence 8 steps are required to complete the rearrangement.

Question 3 : Study the following information carefully and answer the given questions.

A Machine arranges the given input in the following way.

Input: 18 Quickly Teacher Pacer 40 28 86 Heaven

Step 1: Heave Quickl Teache Pace 40 28 86 18

Step 2: Heave 18 Quickl Teache Pace 40 28 86

Step 3: Heav 18 Pac 28 Quick Teach 40 86

Step 4: Hea 18 Pa 28 Teac 40 Quic 86

Step 5: He 18 P 28 Tea 40 Qui 86

And Step 5 is the last step of the above input.

As per the pattern followed in the above steps, find out in each of the following ques- tions the appropriate step for the given input.

Input: 20 Quicker towel Parker 41 29 87 Harness

Which of the following is second to the right of the one that is 4th from the right end in Step IV?

Solution:

In the given illustration:

In step 1, we arrange the smallest word as per alphabetical order in the left end and the smallest number in the right end. All the words are written with one letter being removed.

From the second step, we arrange the smallest word as per alphabetical order and the smallest number from left to right with one letter being removed from every word till the end. A word and number are arranged simultaneously in each step.

Note: In the second step, there will be no removal of words. Now given input is:

Input: 20 Quicker towel Parker 41 29 87 Harness

Step 1: Harnes Quicke Towe Parke 41 29 87 20

Step 2: Harnes 20 Quicke Towe Parke 41 29 87

Step 3: Harne 20 Park 29 Quick Tow 41 87

Step 4: Harn 20 Par 29 Quic 41 To 87

Step 5: Har 20 Pa 29 Qui 41 T 87

Fourth from the right end in Step IV is 'Quic' and second to the right of 'Quic' is 'To'.

Hence, 'To' is the right answer.

EXERCISE

Direction (1 to 5). Study the following information carefully and answer the given questions. When a word and number arrangement machine is given an input line of words and numbers, it arranges them following a particular rule. The following is an illustration of Input and rearrangement.(All the numbers are two digit numbers.)
Input: 41 snow 10 eagle 97 nose 26 65 animal date
Step I: 97 41 10 eagle nose 26 65 animal date snow
Step II: nose 97 41 10 eagle 26 animal date snow 65
Step III: 41 nose 97 10 26 animal snow 65 eagle
Step IV: date 41 nose 97 10 animal snow 65 eagle 26
Step V: 10 date 41 nose 97 snow 65 eagle 26 animal

Step V is the largest step of above arrangement as the intended arrangement as the intended arrangement is obtained

As per the rules followed in the given steps, find out the appropriate steps for the Input.

Input: orange 36 59 yellow 41 exam test 12 lemon 85

1. Which of the following combinations represent the first two and last two elements in step V of the given input?

(A) 12, lemon and 36, exam

(B) 41, test and orange, 36

(C) lemon, 41 and 59, orange

(D) 12, lemon and orange, 36

(E) lemon, 41 and 36, exam

2. Which element comes exactly between 85 and lake in Step III of the given input?

(A) yellow

(B) 59

(C) exam

(D) test

(E) orange

3. Which of the following element is fourth to the right of the one which is ninth from the right end in step V of the given input?

(A) yellow

(B) 36

(C) 12

(D) exam

(E) 85

4. If in the first step, '59' interchanges its position with 'lemon' and 'orange' also interchanges its position with '12' then which element will be to the immediate left of '41'?

(A) orange

(B) 59

(C) lemon

(D) 12

(E) exam

5. In which step are the elements 'test 85 yellow 59' found in the same order?

(A) Fourth

(B) Third

(C) Fifth

(D) The given order of elements is not found in any step

(E) Second

Answer Key

1. A

2. C

3. A

4. C

5. C