MACHINE INPUT AND OUTPUT

Tricks to Solve Input-Output Reasoning

1. While solving the question of Input-Output, candidates are advised to read the question carefully and analyze the pattern of the question.

2. Carefully check the steps from which output is formed, as this will be helpful in solving the question more easily.

3. Try to use tabular form while solving these questions because the length of the Input is longer and it might make the solution confusing.

4. Avoid using these types of questions verbally as this may result in answering the questions wrongly.

5. Once the pattern is understood, try to apply the same to the input.

Example 1:

INPUT: Train Car Airplane Ship Bus Cycle Autorickshaw

Step 1: Train Ship Car Airplane Bus Cycle Autorickshaw

Step 2: Train Ship Cycle Car Airplane Bus Autorickshaw

Step 3: Train Ship Cycle Car Bus Airplane Autorickshaw

Step 4: Train Ship Cycle Car Bus Autorickshaw Airplane

Based on the above-mentioned Input, Find what should be the Output of the following Input?

INPUT: Diver Actor Astronaut Engineer Therapist Sportsperson Doctor

Solution: If we carefully examine the Input "**Train Car Airplane Ship Bus Cycle Autorickshaw**", Step 4 is the final step and the Output clearly shows that all the words have been arranged in descending order of their appearance in the Alphabetic Series.

Thus, the Output for "**Diver Actor Astronaut Engineer Therapist Sportsperson Doctor**" shall be:

Step 1: Therapist Diver Actor Astronaut Engineer Sportsperson Doctor

Step 2: Therapist Sportsperson Diver Actor Astronaut Engineer Doctor

Step 3: Therapist Sportsperson Engineer Diver Actor Astronaut Doctor

Step 4: Therapist Sportsperson Engineer Doctor Diver Actor Astronaut

Step 5: Therapist Sportsperson Engineer Doctor Diver Astronaut Actor

Step 5, is the final step.

Now, based on the above example, given below are a few sample questions:

Q 1. How many steps does it take to get the final output?

Answer: 5 steps

Q 2. What is the 3rd word from the left in Step 4?

Answer: Engineer

Q 3. What will be Step 2?

Answer: Therapist Sportsperson Diver Actor Astronaut Engineer Doctor

Q 4. What is the position of the word "Astronaut" from left in Step 3?

Answer: 2nd from left

Example 2:

Now, let's take an example of an Input comprising numbers only.

INPUT: 56 72 33 98 12 15 29 49

Step 1: 12 56 72 33 98 15 29 49

Step 2: 12 15 56 72 33 98 29 49

Step 3: 12 15 29 56 72 33 98 49

Step 4: 12 15 29 33 56 72 98 49

Step 5: 12 15 29 33 49 56 72 98

Step 5 is the last step.

Based on the above-mentioned Input, what shall be the Output of the following Input?

INPUT: 74 32 45 90 21 77 80 82

Solution: Based on the input given in the question, it is clear that in the final step, the numbers are arranged in ascending order. So, the answer to the input "**74 32 45 90 21 77 80 82**" will be as follows:

Step 1: 21 74 32 45 90 77 80 82

Step 2: 21 31 74 45 90 77 80 82

Step 3: 21 31 45 74 90 77 80 82

Step 4: 21 31 45 74 77 90 80 82

Step 5: 21 31 45 74 77 80 90 82

Step 6: 21 31 45 74 77 80 82 90

Step 6, being the final step.

<u>Example 3:</u>

Now, moving to a bit complex input-output question, comprising both numbers and words.

INPUT: Herb 30 Shrub 10 Grass 20 40 Tree Planter 50

Step 1: 10 Herb 30 Shrub 20 40 Tree Planter 50 Grass

Step 2: 10 20 30 Shrub 40 Tree Planter 50 Grass Herb

Step 3: 10 20 30 40 Shrub Tree 50 Grass Herb Planter

Step 4: 10 20 30 40 50 Tree Grass Herb Planter Shrub

Step 5: 10 20 30 40 50 Grass Herb Planter Shrub Tree

Step 5, is the last step.

Based on the above Input, what will be the Output of the following information?

INPUT: 11 55 Green Blue Red 33 Orange 22 44 Pink

Solution: If we analyse the input **"Herb 30 Shrub 10 Grass 20 40 Tree Planter 50"** and then each step carefully, we will observe that the change in order is happening both from the left corner and from the right corner.

In step 1, the smallest number "10" is placed at the 1st position from the left and "Grass" which begins with "G" and alphabetically comes first in comparison to the first alphabet of other words moved to the last.

Then, in step 2, the second smallest number, "20", follows 10 and the alphabetical "H", i.e. "Herb" is placed after Grass and so on.

In the final step, all the numbers are arranged in ascending order, followed by the words which are arranged in the Dictionary-order, i.e., alphabetically.

So, the output for "**11 55 Green Blue Red 33 Orange 22 44 Pink**" is as follows:

Step 1: 11 22 55 Green Red 33 Orange 44 Pink Blue

Step 2: 11 22 33 55 Red Orange 44 Pink Blue Green

Step 3: 11 22 33 44 55 Red Pink Blue Green Orange

Step 4: 11 22 33 44 55 Red Blue Green Orange Pink

Step 5: 11 22 33 44 55 Blue Green Orange Pink Red

Step 5, being the final step.

Given below are a set of questions, with respect to example 3, which have been framed in a similar manner as may be asked in the final exam. Candidates can refer to these:

Q 1. How many steps does it take to get the final Output?

1. Four
2. Six
3. Eight
4. Seven
5. Five

Answer: (5) Five

Q 2. What is the second last word/number in Step 2?

1. Pink
2. 44
3. Blue
4. Green

5. 55

Answer: (3) Blue

Q 3. What will be the second step of the Output?

1. 11 22 33 55 Red Orange 44 Pink Blue Green
2. 11 22 55 Green Red 33 Orange 44 Pink Blue
3. 11 33 22 Green Red 33 Orange 44 Pink Blue
4. 11 22 33 44 Red Orange 55 Pink Blue Green
5. None of the above

Answer: (1) 11 22 33 55 Red Orange 44 Pink Blue Green

Q 4. What is the third number/word from left in Step 3?

1. 44
2. 33
3. Blue
4. Red
5. Pink

Answer: (3) Blue