INPUT-OUTPUT

INTRODUCTION

These are the problems that test your aptitude. You will be given some input and a machine (its working) using some examples. You have to study this working and accordingly process the data given to you.

Input → [Machine] — Output

In the questions related to this topic, you are expected to be the "machine". You would be told what processing has to be done. You would be given the input, your job would be give the output in accordance to the input.

In the topic of input output there are primarily four types of operation that can be asked in a particular question. The four operations are as follows:

1. **Ordering** input according to given criteria, e.g. alphabetically, in increasing/decreasing order etc.

2. **Mathematical Manipulations** on the output which would in this case obviously be numerical. The operations could be doubling, squaring, adding.

3. **Shifting or Interchanging** positions of characters/alphabets/words etc., in the input according to questions e.g. 'shift 1st character to last' or 'interchange 1st & last' etc.

4. **Others** like making an alphabet capital, replacing alphabet by corresponding number etc.

So, which out of these is being used can be decided as:

• If words (of the input) do not change in the output after an operation, the operations is either reordering or shifting. In this case check for rearrangement first, if it is not the operations performed then check for shifting next.

• If words (of the input) do change in the output, the operation is either Mathematical (if numbers are used) or fall into category of other operations (if alphanumeric data is used).
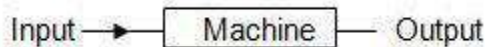
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PSC , Bank(Clerk/PO), SSC, Railways, S.I. , Classes
Director – Rajeev Sir, Mob.& WhatApp No. 9826072042
F – 12, City Bazar,Thatipur, Gwalior (M.P.)www.gourinstitute.**in**

INPUT-OUTPUT

EXERCISE

Directions :- *Study the following information and answer the given questions. A word arrangement machine, When given am input line of words, rearranges them following a particular rule in each steps. The following is an illustration of input and the steps of rearrangement.*

INPUT	**:**	Go for to Thought By easy To Access at
STEP I	**:**	Access Go for to Thought By easy To at
STEP II	**:**	Access at Go For to Thought By easy To
STEP III	**:**	Access at By Go for to Thought easy To
STEP IV	**:**	Access at By easy Go for to Thought To
STEP V	**:**	Access at By easy for Go to Thought To
STEP VI	**:**	Access at By easy For Go Thought to To
STEP VII	**:**	Access at By easy for Go Thought To to

(and step VII is last step for this input). As per the rules followed in the above steps, find out in the following questions the appropriate step for the given input.

1.   Input : "Together over series on feast the so."
       Which of the following steps will be the last but one ?
       (a) II
       (b) III
       (c) IV
       (d) V
       (e) None of these

2.   Input : "every and peer to an for"
       Which of the following steps would be 'an and every for peer to' ?
       (a) II
       (b) IV
       (c) V
       (d) III
       (e) None of these

3.   The step II of an input is as follows :
       "and Do pet to on that."
       Which of the following would definitely be the input ?
       (a) Do and pet to on that
       (b) Do pet to and that on
       (c) Do on pet to and that
       (d) Can not be determined
       (e) None of these

4. Input : "Over Go For through at one."
   (a) III
   (b) VI
   (c) IV
   (d) VII
   (e) II

5. Input : "story for around on was He at."
   Which of the following will be step IV for the given input ?
   (a) around at He for story on was
   (b) around at for He story on was
   (c) around at for He on story was
   (d) around at for Hw on was story
   (e) None of these

Directions (Q. 6-9): Study the following information carefully and answer the given questions: (From IBPS PO/MT Exam 2012)

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. (All the numbers are two-digit numbers.)

Input: tall 48 13 rise alt 99 76 32 wise jar high 28 56 barn
Step I: 13 tall 48 rise 99 76 32 wise jar high 28 56 bam alt
Step II: 28 13 tall 48 rise 99 76 32 wise jar high 56 alt barn
Step III: 32 28 13 tall 48 rise 99 76 wise jar 56 alt barn high
Step IV: 48 32 28 13 tall rise 99 76 wise 56 alt barn high jar
Step V: 56 48 32 28 13 tall 99 76 wise alt barn high jar rise
Step VI: 76 56 48 32 28 13 99 wise alt barn high jar rise tall
Step VII: 99 76 56 48 32 28 13 alt barn high jar rise tall wise And Step VII is the last step of the above input, as the desired arrangement is obtained.

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: 84 why sit 14 32 not best ink feet 51 27 vain 68 92 (All the numbers are two-digit numbers.)

6. Which step number is the following output?
32 27 14 84 why sit not 51 vain 92 68 feet best ink
1) Step V
2) Step VI
3) Step IV
4) Step III
5) There is no such step.

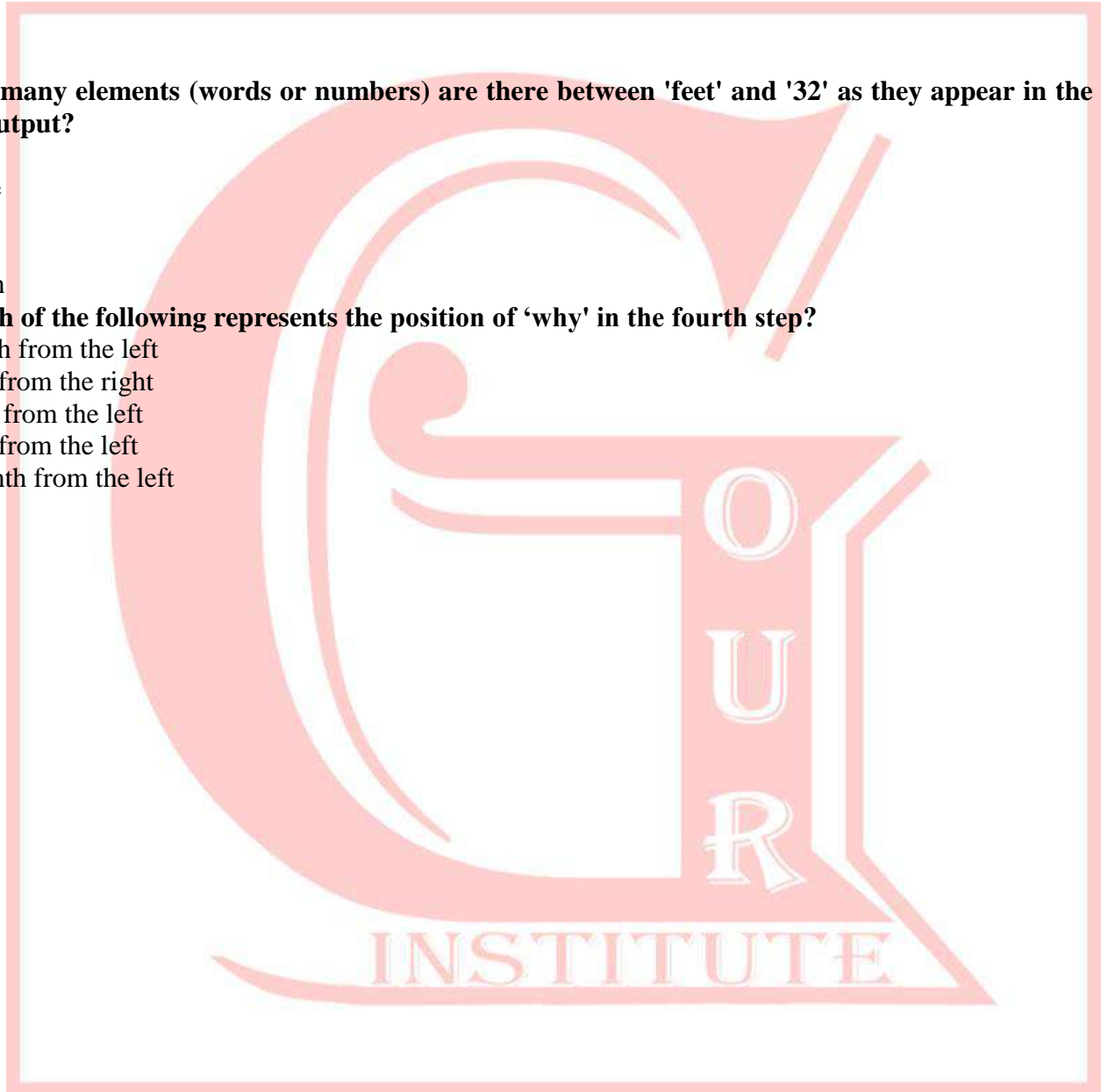**7. Which word/number would be at 5th position from the right in Step V?**
1) 14
2) 92
3) feet
4) best
5) why

8. How many elements (words or numbers) are there between 'feet' and '32' as they appear in the last step of the output?
1) One
2) Three
3) Four
4) Five
5) Seven

9. Which of the following represents the position of 'why' in the fourth step?
1) Eighth from the left
2) Fifth from the right
3) Sixth from the left
4) Fifth from the left
5) Seventh from the left

ANSWER SHEET

INPUT-OUTPUT EXERCISE

1	2	3	4	5	6	7	8	9
E	D	C	E	B	E	D	B	C