Quiz Date: 18 ${ }^{\text {th }}$ March 2020

## Directions (1-5): Study the following information carefully to answer the given questions:

A number arrangement machine when given an input line of numbers rearranges them following a particular rule. The following is an illustration of input and rearrangement.
INPUT-6531 82342813981278232312
STEP I- 135623481238128923781223
STEP II-1223 123812891356
$\begin{array}{llllll}\text { STEP III- } 22 & 23 & 28 & 35 & 34 & 37\end{array}$
$\begin{array}{llllll}\text { STEP IV- } 4 & 5 & 10 & 8 & 7 & 10\end{array}$
Step IV is the last step of the rearrangement. As per the rules followed in the above steps, find out in each of the following questions the appropriate steps for the given input.

Input: $2538 \quad 5628 \quad 8516 \quad 7524 \quad 6325 \quad 2645$
Q1. What will the addition of the numbers which is second, fourth and sixth from the left end in step IV?
(a) 32
(b) 28
(c) 38
(d) 40
(e) None of these

Q2. Which of the following would be the difference of the numbers which is 2nd from left end in step I and forth from right end in Step II?
(a) 113
(b) 128
(c) 113
(d) 212
(e) None of these

Q3. Which of the following element will be $3^{\text {rd }}$ to the left of $6^{\text {th }}$ from the left end in step III?
(a) 34
(b) 37
(c) 25
(d) 35
(e) None of these

Q4. What will the addition of the numbers which is second, fourth and sixth from the right end in step III?
(a) 132
(b) 128
(c) 136
(d) 140
(e) None of these

Q5. Which of the following is the product of all the digits of the number which is $3^{\text {rd }}$ number from the left end in step I?
(a) 240
(b) 315
(c) 235
(d) 189
(e) None of these


Directions (6-10): Study the following information carefully to 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- 212 joint 59 news 7335 army prize 49 direction clear
Step I: army 12 joint 59 news 7335 prize 49 direction clear 2
Step II: army joint 12 news 7335 prize 49 direction clear 259
Step III: army joint news 1235 prize 49 direction clear 25973
Step IV: army joint news clear 35 prize 49 direction 2597312
Step V: army joint news clear direction prize 49259731235
Step IV: army joint news clear direction prize 25973123549
And step IV is the last step of the above input, as per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.

## Input: $\mathbf{3} \mathbf{2 0}$ project 17 drop 6138 grow field 75 make human

Q6. What will be the position of 'field' with respect to 'make' in the step III of the input?
(a) Immediate left
(b) Fourth to the right
(c) None of these
(d) Second to the left
(e) Fourth to the left

Q7. What will be the position of 'human' in the last but one step?
(a) Seventh from the left
(b) Seventh from the right
(c) Fourth from the left
(d) Fifth from the left
(e) Both (b) and (c)

Q8. Which of the following will be the penultimate step?
(a) Step VI
(b) Step V
(c) Step IV
(d) Step III
(e) None of these

Q9. After how many steps no further rearrangement of words is possible?
(a) Five
(b) Four
(c) Six
(d) Seven
(e) Eight

Q10. What will be the position of ' 75 ' in step IV?
(a) Sixth from right
(b) Seventh from right
(c) Seventh from left
(d) Both a and c
(e) None of these

## Directions (11-15): Study the following information carefully and answer the given questions.

In number arrangement machine when given an input line of numbers, it rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.
Input: 75165625483164972257
Step I: 52755648316497225717
Step II: 13527556486497571723
Step III: 75135275566497172349
Step IV: 57751352649717234957
Step V: 79577513521723495765
And step $V$ is the last step of the arrangement.
As per the above rule followed in the above steps, find out in each of the following questions the appropriate step for the input given below;

Input: 86145324451732277493
Q11. Which of the following is the last step of above input?
(a) III
(b) VI
(c) IV
(d) V
(e) None of these

Q12. Which is the following step?
Step: 54727186537493152533
(a) VI
(b) III
(c) IV
(d) V
(e) There is no such step

Q13. What is $4^{\text {th }}$ element from right end in Step IV?
(a) 15
(b) 71
(c) 86
(d) 93
(e) 54

Q14. Which of the following elements lies exactly between 71 and 32 in step II?
(a) 15
(b) 86
(c) 53
(d) 25
(e) 74

Q15. Which of the following is the fifth step for input?
(a) 39152533758735547271
(b) 39352533758754727115
(c) 39727115253335547587
(d) 71152533758739355472
(e) 39355472711525337587


## SOLUTIONS

## Solutions (1-5):

In the given Input-Output question the logic is-
For step I- All the digits of the given numbers are arranged in ascending order within the numbers.
For Step II- All the numbers obtained in step I are arranged in ascending order from the left end.
For Step III- First and last digits of the numbers are omitted.
For step IV- The digits of the numbers obtained in step III are added.
$\begin{array}{llllll}\text { INPUT-2538 } & 5628 & 8516 & 7524 & 6325 & 2645\end{array}$
STEP I- $22358 \quad 25681568 \quad 2457 \quad 2356$
STEP II-1568 2356
STEP III- $56 \quad 35 \quad 35 \quad 45 \quad 45 \quad 56$
$\begin{array}{llllll}\text { STEP IV- } 11 & 8 & 8 & 9 & 9 & 11\end{array}$
S1. Ans. (b)
S2. Ans. (e)
S3. Ans. (d)
S4. Ans (c)
S5. Ans (a)

## Solutions (6-10):

Sol. The machine rearranges one word and one number in each step simultaneously, words are arranged from left end and numbers are arranged from right end.
(i) In this, words are arranged in decreasing manner according to the last letter of the word.
(ii) Numbers are arranged in increasing order, first all prime numbers are arranged after that non-prime numbers are arranged.

## Input- 320 project 17 drop 6138 grow field 75 make human

Step I: grow 20 project 17 drop 6138 field 75 make human 3
Step II: grow project 20 drop 6138 field 75 make human 317
Step III: grow project drop 2038 field 75 make human 31761
Step IV: grow project drop human 38 field 75 make 3176120
Step V: grow project drop human make field 75317612038
Step VI: grow project drop human make field 31761203875
S6. Ans.(d)
S7. Ans.(c)
S8. Ans.(b)
S9. Ans.(a)
S10. Ans.(d)

## Solutions (11-15):

Sol.
In this input output question two numbers are arranged in each step following a certain pattern. Let us understand the logic behind it-

* Even numbers are arranged at the right end, from left to right in ascending order after adding one in each number.
* Odd numbers are arranged at the left end, from right to left in ascending order after the digits are interchanged within the number.
Input: 86145324451732277493
Step I: 71865324453227749315
Step II: 72718653453274931525
Step III: 54727186537493152533
Step IV: 35547271869315253375
Step V: 39355472711525337587
S11. Ans.(d)
S12. Ans.(b)
S13. Ans. (a)
S14. Ans.(c)
S15. Ans.(e)


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