A logical reasoning test is a form of psychometric testing that is widely used by corporate employers to help assess candidates during their recruitment process. 'Psychometric' is just a fancy way of saying 'measuring mental ability' and logical reasoning tests are designed to measure your non-verbal skills.

What is the position of '21'...?

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

Eight people K, L, M, N, O, P, Q and R are seated in a straight line facing north but not necessarily in the same order.

L sits third from the left end of the line. Only three people sit between L and R. O sits on the immediate left of Q. Only one person sits between L and P. P sits on the immediate left of K. Only one person sits between M and Q. P sits third to the left of N. L is not an immediate neighbour of K.

1. What is the position of Q with respect to P?
1) Second to the left
2) Third to the left
3) Second to the right
4) Third to the right
5) Fifth to the left

2. Which of the following pairs represents the persons seated at the two extreme ends of the line?
1) L, K
2) Q, R
3) Q, N
4) O, N
5) O, R

3. How many persons are seated between M and R?
1) Two
2) Four
3) One
4) Three
5) More than four

4. Who among the following sits exactly between L and O?
1) M
2) R
3) P
4) N
5) Q

5. If each of the persons is made to sit in alphabetic order from left to right the positions of how many will remain unchanged as compared to the original seating arrangement?
1) Two
2) Four
3) Three
4) One
5) None

Directions (Q.6-7): Read the following information carefully and answer the given questions.

B is father of W and T. R is son of W. R is the only brother of C. M is mother of C. M is daughter-in-law of Z. Z has only one daughter and only one son.

6. Which of the following is definitely true based upon the given relationships?
1) None of the given options is definitely true.
2) W is son-in-law of Z.
3) W has only one daughter.
4) T is aunt of C.
5) T is married to M.

7. Which of the following is / are required to establish that C is daughter of M?
1) No extra information is required as the relation can be established from the given information.

2) T is unmarried
3) Z is mother of T
4) M has only one son
5) R is grandson of B

Directions (Q.8-12): Study the given 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 an input and rearrangement (All the numbers are two-digit numbers.)

Input: 24 method 87 67 of data 34 collection 45 12 specified now

Step I: 12 method 87 67 of data 34 collection 45 specified now 24

Step II: 34 12 method 87 67 of data collection specified now 24 45

Step III: 67 34 12 method of data collection specified now 24 45 87

Step IV: collection 67 34 12 method of specified now 24 45 87 data

Step V: method collection 67 34 12 of specified 24 45 87 data now

Step VI: of method collection 67 34 12 24 45 87 data now specified

And step VI is the last step of the above arrangement as the intended arrangement is obtained.

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

Input: chemical 68 11 reaction 87 is 21 hard to 53 92 detect.

8. In which step are the elements 'to 92 detect 21' found in the same order?
1) Sixth
2) Third
3) The given order of elements is not found in any step
4) Second
5) Fifth

9. What is the position of '21' from the right end in the last step?
1) Tenth
2) Eighth
3) Fifth
4) Fourth
5) Sixth

10. How many steps are required to complete the rearrangement of the given input?
1) Five
2) Six
3) Seven
4) Eight
5) More than seven

11. Which element is fifth to the left of the element which is ninth from the left end of the fourth step?
1) 11
2) 87
3) 53
4) reaction
5) chemical

12. Which element is exactly between 'chemical' and '87' in the second step of the given arrangement?
1) 53
2) hard
3) reaction
4) is
5) 68

Directions (Q.13-17): In this question two / three statements followed by two conclusions numbered I and II have been given. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

13. Statements: Some rooms are stores.
All stores are godowns.
All godowns are warehouses.
Conclusions: I. All rooms are godowns.
II. All stores are warehouses.
1) Only conclusion II is true
2) Either conclusion I or II is true
3) Neither conclusion I nor II is true
4) Both conclusions I and II are true
5) Only conclusion I is true

14. Statements: Some rooms are stores.
All stores are godowns.
All godowns are warehouses.
Conclusions:
I. All warehouses being rooms is a possibility.
II. At least some godowns are rooms.
1) Only conclusion I is true
2) Only conclusion II is true
3) Both conclusions I and II are true
4) Either conclusion I or II is true
5) Neither conclusion I nor II is true

15. Statements: All kittens are cubs.
No kitten is a puppy.
Conclusions: I. All puppies being cubs is a possibility.
II. All cubs are kittens.
1) Only conclusion I is true
2) Only conclusion II is true
3) Both conclusions I and II are true
4) Either conclusion I or II is true
5) Neither conclusion I nor II is true

16. Statements: No sea is a lake.
Some lakes are rivers.
All rivers are oceans.
Conclusions: I. No sea is a river.
II. All oceans are lakes.
1) Both conclusions I and II are true
2) Either conclusion I or II is true
3) Only conclusion II is true
4) Neither conclusion I nor II is true
5) Only conclusion I is true

17. Statements: No sea is a lake
Some lakes are rivers.
All rivers are oceans.
Conclusions:
I. At least some oceans are lakes.
II. All rivers are lakes.
1) Either conclusion I or II is true
2) Neither conclusion I nor II is true
3) Only conclusion II is true
4) Only conclusion I is true
5) Both conclusions I and II are true

Key					
1-2	4-5	7-4	10-2	13-1	16-4
2-4	5-5	8-4	11-1	14-3	17-4.
3-1	6-4	9-5	12-3	15-1	

Explanations

(Q.1-5):

O Q L M P K R N — Facing North
1-2   2-4   3-1   4-5

5-5; After arranging in alphabetical order

O Q L M P K R N — Original arrangement

K L M N O P Q R — After Arrangement

(Q.6-7):

B(+) ⟺ Z(−)
M(−) ⟺ W(+)
C ⟺ R(+) ⟵ T(−)

6-4   7-4

(Q.8-12): The machine first arranges numbers and then words. In step I the smallest number goes to the left and the second smallest to the right. In the next step the third smallest number goes to the left and the fourth smallest to the right. And so on till all the numbers have been arranged.

★ After this we come to words. First the first word in alphabetical order goes to the left and the second word to the right. In the next step the third word in alphabetical order goes to the left and the fourth to the right. And so on till the words have been arranged.

Input: chemical 68 11 reaction 87 is 21 hard to 53 92 detect
Step I: 11 chemical 68 reaction 87 is hard to 53 92 detect 21
Step II: 53 11 chemical reaction 87 is hard to 92 detect 21 68
Step III: 87 53 11 chemical reaction is hard to detect 21 68 92
Step IV: chemical 87 53 11 reaction is hard to 21 68 92 detect
Step V: hard chemical 87 53 11 reaction to 21 68 92 detect is
Step VI: reaction hard chemical 87 53 11 21 68 92 detect is to
8-4   9-5   10-2   11-1   12-3

13-1; Some rooms are stores (I) + All stores are godowns (A) = I + A = I = Some rooms are godowns (I). Hence conclusion I does not follow.
★ Again, All stores are godowns (A) + All godowns are warehouses (A) = A + A = A = All stores are warehouses (A). Hence conclusion II follows.

14-3; Some rooms are stores (I) + All stores are godowns (A) = I + A = I = Some rooms are godowns (I) → Conversion → Some godowns are rooms (I). Hence conclusion II follows.
★ Again, Some rooms are godowns (I) + All godowns are warehouses (A) = I + A = I = Some rooms are warehouses (I). Thus, the possibility in I exists. Hence conclusion I follows.

15-1; All kittens are cubs (A) → Conversion → Some cubs are kittens (I) + No kitten is a puppy (E) = I + E = O = Some cubs are not puppies. It means All puppies being cubs is a possibility. Hence the possibility in I exists. But conclusion II does not follow.

16-4; No sea is a lake (E) + Some lakes are rivers (I) = E + I = O* = Some rivers are not seas (O*). Hence conclusion I does not follow.
★ Again, Some lakes are rivers (I) + All rivers are oceans (A) = I + A = I = Some lakes are oceans (I) → Conversion → Some oceans are lakes (I). Hence conclusion II does not follow.

17-4; Some lakes are rivers (I) + All rivers are oceans (A) = I + A = I = Some lakes are oceans (A) → Conversion → Some oceans are lakes (I). Hence conclusion I follows.
★ Again, Some lakes are rivers (I) → Conversion → Some rivers are lakes (I). Hence conclusion II does not follow.