

## ORDER AND RANKING

### Ranking Test

The position of a thing/person etc. in a definite order is called as 'Rank'. In this type of question, generally a set, group or series of numerals of numerals is given and the candidates is asked to trace out numerals following certain given conditions or lying at specific mentioned positions after shuffling according to a certain given pattern

### Types of Order and Ranking

**(a) Rank from Left/Right:** In this type of order and ranking reasoning, candidates need to find the position or rank of a person from left or right end, according to the given question.

**(b) Total Person in a Row:** In this type of order and ranking reasoning, candidates need to find the total number of people in a row or a class.

**(c) Person between two people:** This type of order and ranking reasoning is also known as overlapping based reasoning. In this type of order and ranking reasoning, candidates need to find the number of persons between two people when their rank satisfies the condition of overlapping.

**(d) Persons between two people:** This type of order and ranking reasoning is also known as non-overlapping based reasoning. In this type of order and ranking reasoning, candidates need to find the number of persons between the two people when their rank does not satisfy the condition of overlapping.

**(e) Interchanging the positions:** In this type of order and ranking reasoning, candidates need to find the position of person or the total number of persons in the row when 2 people change their positions.

**(f) Ratio Based Problems:** In this type of order and ranking reasoning, candidates need to find the position or rank of a girl or a boy when the ratio of them is given.

### How to Solve Question Based on Order and Ranking Reasoning

Tip 1: Position can be from either side of the row, and rank is always from top or bottom of the row.

Tip 2: Candidates can calculate the total number of persons in a row or column by using the formula: Total Person = Rank from left + Rank from right - 1

Tip 3: For non-overlapping type questions, number of persons between two people = The total number of persons - Sum of positions of two different people from opposite sides.

Tip 4: For overlapping type questions, number of persons between two people = Sum of positions of two different persons from opposite end - total number of persons - 2

Tip 5: Condition for overlapping is, the sum of positions of the two persons from opposite ends > total number of persons

## Examples

**1. In a row of 60 cars, car A is 32<sup>nd</sup> from the right end. What is its position from the left end?**

Solution: Position from left end = ( Total number of cars +1) – Position from right end  
 Position from left end =  $(60 + 1) - 32 = 61 - 32 = 29$ .

Hence, the position of car A from left end is 29.

**2. Aruna ranks twelfth in a class of forty-six. What will be her rank from the last?**

Rank of Aruna from the last = [Total student – her rank

from first] + 1 =  $(46 - 12) + 1 = 35$ th.

**3. Ravi is 7 ranks ahead of Sumit in a class of 39. If Sumit's rank is 17<sup>th</sup> from the last, what is Ravi's rank from the start?**

Rank of Ravi from the last =  $17 + 7 = 24$ <sup>th</sup> Rank of Ravi from the start =  $(39 - 24) + 1 = 16$ th.

**4. Sonal ranks 7<sup>th</sup> from the top and 28<sup>th</sup> from the bottom in a class How many students are there in the class?**

Total no. of students =  $[7 + 28] - 1 = 34$ .

**5. In a class of 35 students Kiran is placed 7<sup>th</sup> from the bottom whereas Sohan is placed 9<sup>th</sup> from the top. Mohan is placed exactly in between the two. What is Kiran's position from Mohan ?**

(A) 10      (B) 11

(C) 13      (D) 12

(A) Position of Kiran from the top =  $[35 - 7] + 1 = 29$  th

Position of Sohan from the top = 9th.

Difference of their positions =  $29 - 9 = 20$

⇒ Mohan's position from top =  $9 + 10 = 19$ th

Hence, Kiran's position from Mohan =  $29 - 19 = 10$ th

Total no. of persons = [Position of person from upward/right + Position.

person from downward/left] – 1

**6. Radha selected the 27<sup>th</sup> card from the left in a row of 50 cards. What will be the position of the same card from the right?**

Solution: Total number of cards = Position of the card from right + Position of the card from left - 1

$50 = \text{Position of Radha's card from right} + 27 - 1$

Position of Radha's card from right =  $50 - 27 + 1 = 24$ .

Hence, the position of the card from the right end is 24.

**7. Radhika ranks 16th from the top and 13th from the bottom in a certain examination. How many students are there in the class?**

Solution: Number of students in the class =  $16 + 13 - 1 = 29 - 1 = 28$ .

Hence, "28" is the correct answer.

**8. In a row of 54 persons, A is 35 from left side and B is 22 from right. Find the total number of persons between them.**

Solution:  $35 + 22 = 57 >$  total number of persons i.e. 54

Total number of persons between them =  $(35 + 22) - 54 - 2 = 1$

Hence, there is only one person between them.

**9. In a row 54 persons, A is 15 th from left side and B is 20 th from right side. Find the total number of persons between A and B**

Solution:  $15 + 20 = 35 <$  Total number of persons.

Number of persons between the two end persons: =  $54 - (15 + 20) = 19$ .

Hence, there are only 19 persons between them.

**10. Sahil and Gaurav are standing in a row of persons. Sahil is 12th from left side and Gaurav is 18th from the right side of the row. If they interchanged their positions Sahil becomes 25 th from left. What is the total number of persons standing in the row?**

Solution: Total person = Position from Left + Position from right  $-1$

Position of Sahil from Left = 25 (after interchanging)

Position of Sahil from Right = 18 (position of Sahil from right end is same as Gaurav after interchanging)  $-1$

Total person =  $25 + 18 - 1 = 42$

Hence, there are 42 persons in the row.

**11. In a School, there are 147 people, the ratio of girls : boys is 1:6. Soumya is a girl who stands 15 th from the top of that row and 7 girls are in front of her. How many boys are behind her?**

Solution: Total number of students = 147

Girls : Boys = 1:6

$$x + 6x = 147$$

$$7X = 147$$

$$X = 21$$

Girls = 21 and boys = 126

Now Soumya is in 15 th position from the top and 7 girls are in front of her.

Now boys are behind him = 7 as total 14 students are in front of him.

So, the number of boys, behind him is  $126 - 7 = 119$

Hence, the correct answer is 119.

**12. Height of five students A, K, L, M and T are compared. Height of K is more than only two students. Height of M is greater than T and Height of T is greater than K. How many students are smaller than T?**

Solution: Five students - A, K, L, M and T are compared.

1. Height of K is more than only two students.

$$_ > K > _ > _$$

2. Height of M is greater than T and Height of T is greater than K.  $M > T > K$

From 1 and 2, we get:

$$M > T > K > _ > _$$

So, 3 students are smaller than T.

## Exercise

1. Veer Das ranks 7th from the top and 28th from the bottom in a class. Then how many students are there in that class?

(a) 32                      (b) 33                      (c) 34                      (d) 35
2. During assembly the students are standing in a line. Salman Khan is 21st in order from both the ends. How many students are there in the line?

(a) 31                      (b) 41                      (c) 40                      (d) 30
3. Priyanka Chopara ranks 17th in a class of 49 students. What is her ranks from the last?

(a) 31                      (b) 32                      (c) 33                      (d) 37
4. Hritik is 7th ranks ahead of Aamir Khan in a class of 39 students. If Aamir Khan's rank is 17th from the last, what is Hritik's rank from the start?

(a) 10                      (b) 15                      (c) 12                      (d) 16
5. The positions of how many digits in the number 2451479638 will remain same when the first half and the second half of the digits are arranged in ascending order separately?

(a) Only one                      (b) Two                      (c) None                      (d) Three
6. In a row where all are facing north, Priya is 15th from the left end and Garima is 19th from the right end. They interchange their positions, and Ram who sits 24th from the left end sits at the 5th place to the left of Priya's new position. How many persons were there in the row?

(a) 36                      (b) 42                      (c) 47                      (d) 56
7. During a prize distribution ceremony, Vikram was ninth from the left while Janhvi was eighth from the right in the front row. If Hariom was thirteenth from the left and was exactly in the middle of Vikram and Janhvi in the same row then what was the total number of people in the front row?

(a) 18                      (b) 19                      (c) 21                      (d) 24
8. In a north facing row of NCC Cadets, Trisha is 9th from the left end and Tina is 12th from the right end. There are 5 cadets between Trisha and Tanya which is equal to the number of cadets between Tanya and Tina. Find how many cadets are there in the row?

(a) 34                      (b) 32                      (c) 31                      (d) 33
9. In a queue of students facing north, Ayesha and Anisha are standing at 10th and 8th position from the left and right end respectively. If another student Ariva who is 12th from the left end is exactly in between Ayesha and Anisha then find the position of Ayesha from right end?

(a) 10th                      (b) 12th                      (c) 15th                      (d) 8<sup>th</sup>

Directions: (10-12) Study the following information carefully and answer the questions given beside: Six books – English, Hindi, Science, Computer, Math's, and Sanskrit each contains different number of pages. Computer book contains fewer pages than only two books. English book contains more pages than Science book but less than Sanskrit book. Science book does not contain least pages. Sanskrit book contains fewer pages than Hindi book. The book which contain third lowest pages contain 28 pages.

**10.** How many book (s) contain more pages than Science book?

- (a) 1                                      (b) 2                                      (c) 3                                      (d) 4

**11.** If Sanskrit and Computer books contain 89 pages together and Computer and English book contains 63 pages together then what is the number of pages that Sanskrit book contains?

- (a) 63                                      (b) 54                                      (c) 70                                      (d) 57

**12.** How many books have more pages than English book but less pages than Hindi book?

- (a) 1                                      (b) 2                                      (c) 3                                      (d) 4

Directions: (13-14) Study the following information carefully and answer the questions given beside: A certain number of persons were sitting in a row facing north such that number of persons on the right of Roop was same as the number of persons on the left of Gaur. Gaur sits on the left of Roop. Deep sits exactly in the middle of Roop and Gaur. Number of persons between Deep and Roop were twice the number of persons on the right of Roop, who was 58th from the left end.

**13.** How many total person(s) were there in the row?

- (a) 35                                      (b) 55                                      (c) 69                                      (d) 72

**14.** What is the position of Deep from the right end of the row?

- (a) 20th                                      (b) 25th                                      (c) 30th                                      (d) 35th

Directions: (15-19) In each of the following questions two rows of numbers are given, the resultant number in each row is to be worked out separately based on the following rules and the question below the rows of numbers is to be answered, the operation of numbers progresses from left to right. Conditions: (I) If an even number is followed by an odd number, then 25 is added to the difference of both numbers. (II) If an odd number is followed by an even number, then 20 is subtracted from the sum of both numbers. (III) If an even number is followed by an even number or an odd number is followed by an odd number, then 25 is subtracted from the product of both numbers.

**15.** Find the value of  $(x - y)$ .  $x = 88\ 27\ 12$ ,  $y = 43\ 24\ 28$

- (a) 875                                      (b) 1067                                      (c) 952                                      (d) 997

**16.** Find the value of b.  $a = 17\ 24\ 50$ ,  $b = 82\ a\ 20$

- (a) 1175                                      (b) 980                                      (c) 1035                                      (d) 1095

17. Find the value of  $(p + q)^{1/2}$ .  $p = 36\ 13\ 29$ ,  $q = 73\ 22\ 19$

- (a) 40                      (b) 38                      (c) 24                      (d) 34

18. Find the value of  $(m + n) \div 2$ .  $m = 96\ 43\ 20$ ,  $n = 57\ 36\ 44$

- (a) 714                      (b) 816                      (c) 936                      (d) 526

19. Find the value of  $(d \div 4 - c) \div 3$ .  $c = 28\ 11\ 25$ ,  $d = 63\ 18\ 17$

- (a) 78                      (b) 46                      (c) 67                      (d) 89

20. What will be the difference between the third last digit and fourth digit from the left end of the number '947823165' after arranging all its digits in ascending order?

- (a) 4                      (b) 5                      (c) 3                      (d) 7

21. What will be the addition of the third digit from the right end and the fourth digit from the left end of the number '768395241' after arranging all its digits in descending order?

- (a) 8                      (b) 12                      (c) 17                      (d) None of these

22. In a class, there are 36 very tall boys. If these constitute three-fourths of the boys and the total number of boys is two-thirds of the total number of students in the class, what is the total number of girls in the class?

- (a) 36                      (b) 72                      (c) 24                      (d) 48

23. There are 25 students in a class and all of them are sitting in a row to do yoga. Meena is 11th from the top and Sneha is 6th from the bottom. Two students are sitting between Ananya and Reena. What is the position of Reena from the top.

- (a) 12th                      (b) 13th                      (c) CND                      (d) None of these

24. How many such pairs of Numbers are there in the 5947680213, each of which has as many numbers between them in the number, as they have in the numeric series?

- (a) Four                      (b) Five                      (c) More than five                      (d) None

Directions: (25-29) Study the following information carefully and answer the questions given below: Seven persons – Kajal, Bhagat, Mandeep, Kiran, Rinku, Pranav, and Shreya have different height and weight such that the tallest one is not the heaviest one. Kiran is taller than Kajal but not heavier than Shreya. Bhagat is heavier than Rinku but not as much tall as Mandeep. Pranav is heavier than Bhagat and Rinku but shorter than Mandeep and Bhagat. Kiran is not taller than Pranav. Shreya is not taller than Kajal and also not heavier than Rinku. Kajal is not lighter than Mandeep who is heavier than Bhagat. Mandeep is shorter than only one person. Pranav is not the second heaviest and is lighter than Mandeep.

25. Who among the following is the second lightest?

- (a) Pranav                      (b) Rinku                      (c) Kajal                      (d) Shreya

26. How many person(s) are heavier than the one who is second shortest?

- (a) None (b) 1 (c) 2 (d) 3

27. Who among the following is the heaviest?

- (a) Shreya (b) Mandeep (c) Kajal (d) Pranav

28. Which of the following statements is/are true?

- (a) Kiran is heaviest (b) Shreya is shortest (c) Bhagat is third heaviest (d) All are true

29. Which of the following persons is the tallest?

- (a) Kiran (b) Kajal (c) Rinku (d) Shreya

Directions (30-31): Read the given information carefully and answer the given questions. There are six boxes U, V, W, X, Y and Z in a room, each having a different number of toffees. X has more toffees than only 2 boxes. U has more toffees than Y but less toffees than Z. U has more toffees than W but less toffee than V. Y is not the box which has the lowest number of toffees. V doesn't have odd number of toffees. The box which has 2nd highest number of toffees has 35 toffees.

30. If the box X has 27 toffees, then what will be the possible number of toffees U have?

- (a) 37 (b) 38 (c) 28 (d) 24

31. If Box W has 5 toffees and Box U has 5 times toffees of Box W then what will be the possible toffees does Y have?

- (a) 26 (b) 29 (c) 27 (d) 14

## Answer Key

<b>Q.No</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Ans.</b>	C	B	C	D	C	C	D	B	B	D	B	B	C	D	C	D	B	B	C	C
<b>Q.No</b>	21	22	23	24	25	26	27	28	29	30	31									
<b>Ans.</b>	D	C	C	C	D	A	C	B	C	C	D									