CHAPTER 7

Time Sequence, Number & Ranking Test

TIME SEQUENCE

To solve problems related to time sequence, let us gather 1st the following informations :

1 Minute = 60 seconds
1 Hour = 60 minutes
1 Day = 24 hours
1 Week = 7 days
1 Month = 4 weeks
1 Year = 12 months
1 Ordinary year = 365 days
1 Leap year =366 days
1 Century = 100 years

REMEMBER

★ A day is the period of the earth's revolution on its axis.

★ A 'Solar year' is the time taken the earth to travel round the sun. It is equal to 365 days, 5 hours, 48 minutes and $47\frac{1}{2}$ seconds nearly.

★ A 'Lunar month' is the time taken by the moon to travel round the earth. It is equal to nearly 28 days.

Leap Year

- If the number of a given year is divisible by 4, it is a leap year. Hence, the years like 1996, 2008, 2012 are leap years. But years like 1997, 1991, 2005, 2007 are not divisible by 4 and therefore, such years are not leap years.
- In a leap year, February has 29 days.
- A leap year has 52 weeks and 2 days. Therefore, a leap year has 2 odd days.

Ordinary year

- An ordinary year has 12 months.
- An ordinary year has 365 days.
- An ordinary year has 52 weeks and 1 day. Therefore, an ordinary year has 1 odd day.

Century (100 years)

- A century has 76 ordinary years and 24 leap years.
- A century has 5 odd days.

Odd days

Odd days in an ordinary year = 1
Odd days in a leap year = 2
Odd days in 100 years = 5
Odd days in 200 years = (5×2) = 1 week + 3 days = 3
Odd days in 300 years = (5×3) = 2 weeks + 1 day = 1
Odd days in 400 years = $(5 \times 4 + 1)$ = 21 days
= 3 weeks + 0 day = 0
Similarly, each 800, 1600, 2000, 2004, etc. has 0 odd days.

EXAMPLE 1. Neena returned house after 3 days earlier than the time she had told her mother. Neena's sister Veena reached five days later than the day Neena was supposed to return. If Neena returned on Thursday, on what day did Veena return ?

(a) Friday **(b) Saturday**
(c) Wednesday **(d) Sunday**
(e) None of these

Sol. Neena returned home on Thursday. Neena was supposed to return 3 days later, i.e., on Sunday.

Veena returned five days later from Sunday. i.e., on Friday.
∴ Option (a) is the correct option.

EXAMPLE 2. Vandana remembers that her father's birthday is between 14th and 15th of June. Whereas her brother remembers that their Father's birthday is between 14th and 18 th of June. On which day is their Father's birthday ?

(a) 14 th June **(b) 16 th June**
(c) 15 th June **(d) 18 th June**
(e) None of these

Sol. According to Vandana her father's birthday is on one of the days among 14 th and 15 th June. According to Vandana's brother, the father's birthday is on one of the days among 15 th, 16th and 17th June.

It is obvious that the father's birthday is on the day common to both the above groups. The common day is 15th June. Hence, the father's birthday falls on 15 th June.
∴ Option (c) is the correct option.

EXAMPLE 3. January 5, 1991 was a Saturday. What day of the week was March 4, 1992 ?

(a) Wednesday **(b) Thursday**
(c) Saturday **(d) Friday**
(e) None of these

Sol. Total number of days between Jan 5, 1991 and March 4, 1992

= 360 days in 1991 + (31 + 29 + 4) days in 1994.
=360 + 64 = 424
= 60 weeks + 4 days = 4 odd days
∴ March 4, 1992 is 4 days beyond Saturday i.e., Wednesday
∴ Correct option is (a).

NUMBER TEST

In such test, generally you are given a long series of numbers. The candidate is required to find out how many times a number satifying the conditions specified in the question occurs.

EXAMPLE 4. How many 8s are there in the following number sequence which are immediately preceded by 5 but not immediately followed by 3?

3 8 5 8 4 5 8 3 9 8 8 5 8 8 8 9 3

(a) One **(b) 4**
(c) 3 **(d) 2**
(e) None of these

Sol. Let use see the following :

3 8 8 4 5 **8** 3 9 8 8 **5** **8** 8 8 9 3

Clearly, two such 8s are there.

∴ Option (b) is correct.

EXAMPLE 5. What will be last digit of the 3rd number from top when the numbers given below are arranged in descending order after reversing the position of the digits within each number?

517 325 639 841 792

(a) 2 **(b) 5**
(c) 7 **(d) 3**
(e) None of these

Sol. The given numbers are :

517 325 639 841 792

After reversing, the numbers becomes as follows :

715 523 936 148 297

When arranged in descending order the numbers become as follows :

936 715 523 297 148

Now, the third number from top is 523. Hence, the last digit of 523 is 3.

∴ Option (d) is correct.

RANKING TEST

In such problems, the ranks of a person both from the top and from the bottom are given and on the basis of this the total number of persons is asked. Sometimes question is twisted also and position of a particular person is asked.

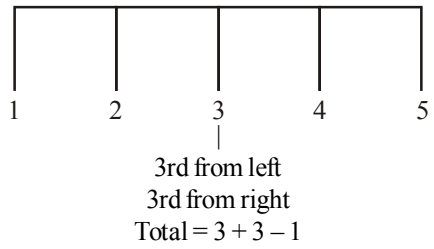
☞ Shortcut Approach

Formulas to determine the positioning of a person

(1) Left + Right = Total + 1
(2) Left = Total + 1 – Right
(3) Right = 1 + 1 – left
(4) Total = left + Right

Note : *The above formulas are only for a single person's position*

E.g.



3rd from left
3rd from right
Total = 3 + 3 – 1

☞ Shortcut Approach

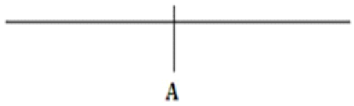
Same for vertical & Horizontal

(1) Total + 1 = top + Bottom
(2) Top = Total + 1 – Bottom
(3) Bottom = Total + 1 – Top
(4) Total = Top + Bottom

EXAMPLE 6. In a row of 40 students, A is 13th from the left end, find the rank from right end.

(a) 27 **(b) 28**
(c) 29 **(d) 30**
(e) None of these

Sol. (b) Total = 40



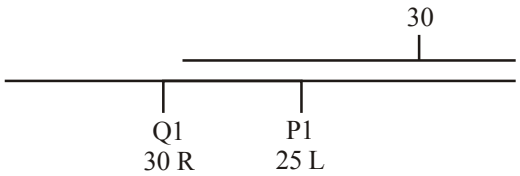
13L
A's rank from right side = Total + 1 – left
= 40 – 13 + 1
= 27 + 1
= 28

EXAMPLE 7: In a row 'P' is 25th from left end, Q is 30th from right end. Find the total number of students in all.

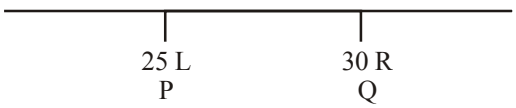
(a) 25 **(b) 30**
(c) 45 **(d) Cannot be determined**
(e) None of these

Sol. (d) Can't be Determined as there are more than 1 possibilities

Case 1



Case 2



Note : *When total is not given and 2 persons positions from left and right are given, then answer is Cannot be determined.*

EXAMPLE 8 : In a row of some children, S is 25th from left, T is 60th from right. If they interchanged their positions, then T becomes 70th from right end

Find

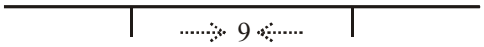
(i) What is S's right-hand position in new position

(ii) What is T's left hand position in earlier position.

(iii) How many numbers of persons between S and T.

(iv) What is the total strength

(v) If 'Q' is placed exactly between S & T then what is his rank from left end?



S1 25L T2 70R T1 60R S2 35L

Sol.

(1) S's new position from left end = 35

(2) T's left hand position in earlier position = 35 L

i.e. L = 25 + 9 + 1

= 35

Or

L = 94 + 1 – R

= 95 – 60

= 35

(3) Persons in between = 70 – 60 – 1

= 9

Or

Persons in between = Total – 25 – 60

= 94 – 25 – 60

= 94 – 85

= 9

(4) Total strength = 25 + 60 + 9

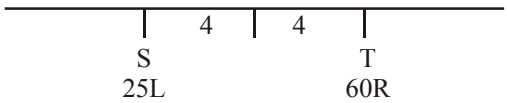
= 95

Or

Total = 70 + 25 – 1

= 94

(5)



Sol. 25 + 4 + 1 = 30 from left

EXAMPLE 9. Karishma ranks 10 th from the top and 15 th from the bottom in an examination. Find the total number of students in Karishma's class.

(a) 35 **(b) 31**

(c) 28 **(d) 30**

(e) None of these

Sol. As per the example; the class has

(i) 9 students higher than Karishma

(ii) 14 students lower than Karishma

(iii) Karishma

∴ Total number of students = 9 + 14 + 1 = 24

or 10 + 15 – 1 = 24

Hence, option (e) is correct.

EXERCISE

1. Mohan and Suresh study in the same class. Mohan has secured more marks than Suresh in the terminal examination. Suresh's rank is seventh from top among all the students in the class. Which of the following is **definitely true?**
   (a) Mohan stood first in the terminal examination.
   (b) There is at least one student between Mohan and Suresh in the rank list.
   (c) There are at the most five students between Mohan and Suresh in the rank list.
   (d) Suresh is five ranks lower than Mohan in the rank list.
   (e) None of these
2. Fifteen children are standing in a row facing north. Ravi is to the immediate left of Prabha and is eighth from the left end. Arjun is second from the right end. Which of the following statements is not true?
   (a) Prabha is 7th from right end.
   (b) There are four children between Prabha and Arjun.
   (c) There are five children between Ravi and Arjun.
   (d) Arjun is 13th from the left end.
   (e) Ravi is exactly in the middle.
3. Rajnish is older than Rajesh and Raman. Ramesh is older than Rajesh but younger than Rajeev. Raman is older than Rajeev. Who among them is oldest?
   (a) Rajeev (b) Rajesh
   (c) Rajnish (d) Ramesh
   (e) None of these
4. If every seconds Saturday and all Sundays are holidays in a 30 days month beginning on Saturday, then how many working days are there in that month? (Month starts from Saturday)
   (a) 20 (b) 21
   (c) 22 (d) 23
   (e) 24
5. If the positions of the first and the fifth digits of the number 83721569 are interchanged, similarly, the positions of the second and the sixth digits are interchanged, and so on, which of the following will be the third from the right end after the rearrangement?
   (a) 6 (b) 3
   (c) 2 (d) 7
   (e) None of these
6. The train for Lucknow leaves every two and half hours from New Delhi railway station. An announcement was made at the station that the train for Lucknow had left 40 minutes ago and the next train will leave at 18.00 hrs. At what time was the announcement made?
   (a) 15.30 hrs (b) 17.10 hrs
   (c) 16.00 hrs (d) 15.50 hrs
   (e) None of these
7. If the positions of the first and the sixth digits of the group of digits 5904627813 are interchanged, similarly, the positions of the second and the seventh are interchanged, and so on, which of the following will be the fourth from the right end after the rearrangement?
   (a) 4 (b) 9
   (c) 1 (d) 0
   (e) None of these
8. In a row of boys Akash is fifth from the left and Nikhil is eleventh from the right. If Akash is twenty-fifth from the right then how many boys are there between Akash and Nikhil?
   (a) 14 (b) 13
   (c) 15 (d) 12
   (e) None of these
9. The positions of the first and the sixth digits in the number 3597280164 are interchanged. Similarly, the positions of the second and the seventh digits are interchanged, and so on. Which of the following will be the fourth digit from the right end after the rearrangement?
   (a) 5 (b) 3
   (c) 9 (d) 4
   (e) None of these
10. In a shop, there were 4 dolls of different heights M, N, O and P. 'P' is neither as tall as 'M' nor as short as 'O'. 'N' is shorter than 'P' but taller than 'O'. If Anvi wants to purchase the tallest doll, which one should she purchase?
    (a) Either M or P (b) Either P or N
    (c) Only P (d) Only M
    (e) None of these
11. Ketan takes casual leave only on first working day of every month. The office has weekly offs on Saturday and Sunday. In a month of 30 days, the first working day happened to be Tuesday. What will be the day for his next casual leave?
    (a) Wednesday (b) Thursday
    (c) Friday (d) Monday
    (e) None of these
12. Abhay gave an application for a new ration card to the clerk on Monday afternoon. Next day was a holiday. So the clerk cleared the papers on the next working day on resumption of duty. The senior clerk checked it on the same day but forwarded it to the head clerk on next day. The head clerk decided to dispose the case on the subsequent day. On which of the following days was the case put up to the head clerk by the senior clerk?
    (a) Wednesday (b) Thursday
    (c) Friday (d) Saturday
    (e) None of these
13. "Jayant could not reach Pune from Mumbai on last Saturday day because of non-availability of tickets". Which of the following, if true, would support and strengthen this statement?
    (i) Last Friday evening, he had booked a luxury car for 3 days for going to a picnic spot near Vasal for his boss.

(ii) He was seen at railway reservation counter requesting for a ticket for Pune on Saturday morning.
(iii) His secretary had contacted several travel agents to get a seat for Jayant on last Thursday, Friday and even Saturday morning.
(iv) Jayant attended a dinner party last Saturday evening.
(v) Jayant's wife was reluctant to go to Pune last week.
(a) Only (i), (ii) and (v) (b) Only (ii) and (iii)
(c) Only (iv) and (v) (d) Only (i), (iii) and (iv)
(e) None of these

14. In a class of 180, when girls are twice the number of boys, Rupesh (a boy) ranked 34th from top. If there are 18 girls ahead of Rupesh, how many boys are after him in rank ?
(a) 45 (b) 44
(c) 60 (d) Cannot be determined
(e) None of these

15. If it is possible to make a number which is perfect square of a two-digit odd number with the second, the sixth and ninth digits of the number 187642539. which of the following is the digit in the unit's place of that two-digit odd number ?
(a) 1
(b) 7
(c) 9
(d) No such number can be made
(e) More than one such number can be made

16. A, B, C, D and E, when arranged in descending order of their weight from top, A becomes third, E is between D and A, C and D are not at the top. Who among them is the second?
(a) C (b) B
(c) E (d) Data inadequate
(e) None of these

17. Mohini went to the movies nine days ago. She goes to the movies only Thursday. What day of the week today?
(a) Thursday (b) Saturday
(c) Sunday (d) Tuesday
(e) None of these

18. Nitin was counting down from 32. Sumit was counting upwards the numbers starting from 1 and he was calling out only the odd numbers. What common number will they call out at the same time if they were calling out at the same speed?
(a) 19
(b) 21
(c) 22
(d) They will not call out the same number
(e) None of these

19. Count 9 in the numbers sequence which is followed by 7 and preceded by either 4 or 5. How many 9 are there in the sequence ?
1 2 3 7 8 9 1 4 9 7 3 6 9 8 1 5 3 5 9 7
(a) 1 (b) 2
(c) 3 (d) 4
(e) None of these

20. Find out how many times 2, 3 and 7 have present together, and always 3 in middle and 2 and 7 places either side of 3 ?
1 1 1 1 3 3 2 2 2 3 7 7 3 3 3 6 6 4 7 3 2 4 9 8 7 7 3 2 3 3 3 4 4 2 3 7
(a) 1 (b) 2
(c) 3 (d) 4
(e) None of these

21. Some boys are sitting in a line. Mahendra is on 17th place from left and Surendra is on 18th place from right. There are 8 boys in between them. How many boys are there in the line?
(a) 43 (b) 42
(c) 41 (d) 44
(e) None of these

22. In a line of boys, Ganesh is 12th from the left and Rajan is 15th from the right. They interchange their positions. Now, Rajan is 20th from the right. What is the total no. of boys in the class?
(a) 30 (b) 29
(c) 32 (d) 31
(e) None of these

23. In a queue, Vijay is fourteenth from the front and Jack is seventeenth from the end, while Mary is in between Vijay and Jack. If Vijay be ahead of Jack and there be 48 persons in the queue, how many persons are there between Vijay and Mary?
(a) 8 (b) 7
(c) 6 (d) 5
(e) None of these

24. Malay Pratap is on 13th position from the starting and on 17th position from the end in his class. He is on 8th position from the starting and on 13th position from the end among the students who passed. How many students failed?
(a) 7 (b) 8
(c) 9 (d) Can not be determined
(e) None of these

25. In a row of students, Ramesh is 9th from the left and Suman is 6th from the right. When they both interchange their positions then Ramesh will be 15th from the left. What will be the position of Suman from the right?
(a) 12th (b) 13th
(c) 15th (d) 6th
(e) None of these

26. In a row of children, Bhusan is seventh from the left and Motilal is fourth from the right. When Bhusan and Motilal exchange positions, Bhusan will be fifteenth from the left. Which will be Motilal's position from the right ?
(a) Eighth (b) Fourth
(c) Eleventh (d) Twelfth
(e) None of these

27. In a line of students Madhukar is on 15th position from right and Dhirendra is on 18th position from left. When they both interchange their positions then Madhukar is on 20th position from right. What will be the position of Dhirendra from left?
(a) 18th (b) 24th
(c) 23rd (d) 20th
(e) None of these

28. In a class of 45 students, among those students who passed, Anmol secured 11th position from upwards and 15th from downwards. How many students failed?
(a) 19 (b) 20
(c) 15 (d) 18
(e) None of these

29. In a row at a bus stop, A is 7th from the left and B is 9th from the right. Both of them interchange their positions and thus A becomes 11th from the left. How many people are there in that row?
(a) 18 (b) 19
(c) 20 (d) 21
(e) None of these

30. In a row of boys facing the North, A is sixteenth from the left end and C is sixteenth from the right end. B, who is fourth to the right of A, is fifth to the left of C in the row. How many boys are there in the row ?
(a) 39 (b) 40
(c) 41 (d) 42
(e) None of these

31. In a class of 60, where girls are twice that of boys, kamal ranked seventeenth from the top. If there are 9 girls ahead of kamal, how many boys are after him in rank ?
(a) 3 (b) 7
(c) 12 (d) 23
(e) None of these

32. Ravi is 7 ranks ahead of Sumit in a class of 39. If Sumit's rank is seventeenth from the last, what is Ravi's rank from the start?
(a) 14th (b) 15th
(c) 16th (d) 17th
(e) None of these

33. In a queue, A is eighteenth from the front while B is sixteenth from the back. If C is twentieth from the front and is exactly in the middle of A and B, then how many persons are there is the queue ?
(a) 45 (b) 46
(c) 47 (d) 48
(e) None of these

34. In a row of 21 girls, when Monika was shifted by four place towards the right, she became 12 th from the left end. What was her earlier positions from the right end of the row ?
(a) 9th (b) 10th
(c) 11th (d) 14 th
(e) None of these

35. In a row of girls, Rita and monika occupy the ninth place from the right end and tenth place from the left end respectively. If the interchange their places, then Rita and monika occupy seventh place from the right and eighteenth place from the left respectively How many girls are there in the row ?
(a) 25 (b) 26
(c) 27 (d) Data inadequate
(e) None of these

36. How many 3 are there in the following list in which followed by 9 and preceded 2, 3 or 4 ?
1 1 2 3 9 4 4 5 5 5 5 3 3 9 8 7 7 7 8 8 8 5 5 4 3 9 6 6 6 6
(a) 1 (b) 2
(c) 3 (d) 4
(e) None of these

37. Adi remember that his sister Ana's date of birth falls after 20th September but before 23rd September, while his father remember that Ana's birthday falls after 21st and before 24th September. What is the correct date of birth of Ana?
(a) 21st September (b) 22nd September
(c) 23rd September (d) 24th September
(e) None of these

38. Outside of an assembly house Jatin was told by a person taht each meeting takes place after 3hr 15min last meeting has been over just before 45 minutes and next meeting will take place at 2 pm. At what time did jatin receive this information?
(a) 10.20 am (b) 11.45 am
(c) 12.30 am (d) 11.30 am
(e) None of these

39. Meeta correctly remembers that her father's birthday is after 8th July but before 12th July. Her brother correctly remembers that their father's birthday is after 10th July but before 15th July. On which day of July was definitely their father's brithday?
(a) 10th (b) 11th
(c) 10th or 11th (d) Can't be determined
(e) None of these

40. Abha correctly remembers that her mother's birthday is before Friday but after Monday. Her brother Abhay correctly remembers that their mother's birthday is after Wednesday while before Saturday. On which of the following days does their mother's birthday definitely fall?
(a) Tuesday (b) Wednesday
(c) Thursday (d) Friday
(e) Can't be determined

ANSWER KEY

1	(c)	5	(b)	9	(a)	13	(b)	17	(b)	21	(a)	25	(a)	29	(b)	33	(c)	37	(b)
2	(d)	6	(e)	10	(d)	14	(b)	18	(d)	22	(d)	26	(d)	30	(b)	34	(d)	38	(d)
3	(c)	7	(b)	11	(b)	15	(b)	19	(b)	23	(b)	27	(c)	31	(c)	35	(b)	39	(b)
4	(d)	8	(b)	12	(b)	16	(a)	20	(d)	24	(c)	28	(b)	32	(c)	36	(c)	40	(c)

Hints & Explanations

2. (d) 8th, 9th, 14th
Ravi Prabha Arjun

3. (c) Rajnish > Rajesh, Raman... (i)
Rajeev > Ramesh > Rajesh ... (ii)
Raman > Rajeev ... (iii)
Combining all, we get
Rajnish > Raman > Rajeev > Ramesh > Rajesh

4. (d) As month begins on Saturday, so 2nd, 9th, 16th, 23rd, 30th days will be Sundays. While 8th and 22nd days are second Saturdays. Thus, there are 7 holidays in all.
Hence, no. of working days = 30 - 7 =23

5. (b) New arrangement of numbers is as follows: 15698372
Hence, third number from right end is 3.

6. (e) Clearly, the last train left two and half hours before 18.00 hrs i.e., at 15.30 hrs. But this happened 40 minutes before the announcement made . So, the announcement made at 16.10 hrs.

7. (b) In the original group of digits '7' is fourth from the right, which is interchanged with '9'. The new series is 2781359046.

8. (b) There are (25 – 11– 1) = 13 boys between Akash and Nikhil.

9. (a) After interchanging the number becomes as follows:
8 0 1 6 4 3 **5** 9 7 2
Hence, the fourth digit from the right end is 5.

10. (d) The correct order of dolls according to descending order of their heights are:
M > P > N > O
Therefore, Anvi will purchase the doll M.

11. (b) If the first working day happened to be Tuesday then 8th, 15th, 22nd and 29th of the month will be Tuesday. Hence, the last day of the month will be Wednesday (since, number of days in the month is 30). Thus, the next casual leave will be on Thursday.

12. (b) (i) Submitted application form : Monday
(ii) Holiday : Tuesday
(iii) Clearance from clerk : Wednesday
(iv) Clearance from senior clerk : Wednesday
(v) Submitted to the head clerk : Thursday

13. (b) Here (i) weakens the statement whereas (ii) and (iii) support and strengthen the statement. But (iv) and (v) neither weaken nor strengthen the statement.
In order to decide whether a statement strengthens(or weakens) an argument, follow these steps.
Step I: Break up the argument mentally. See what is the supporting premise, what is the assumption and what is the conclusion.
Step II: If a suggested statement supports any of the three it would be a strengthening statement. If it contradicts any of the three it would be a weakening statement.
In order to decide which statement strengthens (or weakens) an argument the most, follow an additional step:
Step III: If a suggested statement supports (or weakens) the basic assumption of an argument, it would be the most strengthening (weakening) argument.
Or
If a suggested statement provides a very strong proof (or contradictory proof) in favour of (or in contradiction to) the conclusion of the argument, it would be the most strengthening (or weakening) statement.

14. (b) No. of boys upto 34^{th} rank = 34 – 18 = 16
Total number of boys = $\frac{180}{2+1} \times 1 = 60$
Number of boys after the rank of Rupesh = 60 – 16 = 44

15. (b) The specified digits are 8, 2 and 9. Now, we know a perfect square number does not have 8 and 2 at unit's place. Therefore, we can make only two three-digit numbers from it, i.e., 829 and 289. Among these two numbers, 289 is a perfect square number, i.e., square of 17. Thus, unit's digit is 7 and ten's digit is 1.

16. (a) ------
----A----
DEA - - [It is not possible as D is not at the top.]
---AED
BCAED
Hence, C is second among them.

17. (b) Clearly, nine days ago, it was Thursday.
Today is Saturday.

18. (d) Nitin : 32 31 30 29 28 27 26 25 24 23 22 21 20...
Sumit : 1 3 5 7 9 11 13 15 17 19 21 23 25...
Clearly, both will never call out the same number.

19. (b) Two 9 are present which is followed by 7 and preceded by either 4 or 5.
1 2 3 7 8 1 **[4 9 7]** 3 6 9 8 1 5 3 **[5 9 7]** 1 1 27

20. (d) Four times 3 present together with 2 and 7, where 2 and 7 present either side of 3.
1 1 1 1 3 3 2 2 **[2 3 7]** 7 3 3 3 6 6 4 **[7 3 2]** 4 9 8 7 **[7 3 2]** 3 3 3 4 4 **[2 3 7]**

21. (a) Total boys

$$= \left[\begin{array}{c}\text{Mahendra's}\\ \text{place}\\ \text{from left}\end{array} + \begin{array}{c}\text{Surendra's}\\ \text{place}\\ \text{from right}\end{array}\right] + \left[\begin{array}{c}\text{Boys between}\\ \text{them}\end{array}\right]$$

$= [17 + 18] + 8 = 43$

22. (d) Total students
$= [\text{First position of Ganesh} + \text{Second position of Rajan}] - 1$
$= [12 + 20] - 1 = 31$

23. (b) Number of persons between Vijay and Jack
$= 48 - (14 + 17) = 17$
Now, Mary lies in middle of these 17 persons i.e., at the eighth position.
So, number of persons between Vijay and Mary = 7.

24. (c) Total boys
= [Malay's place from starting + Malay's place from end] –1
$= [13 + 17] - 1 = 29$
Number of passed students
= [Malay's place from starting + Malay's place from end] –1
$= [8 + 13] - 1 = 20$
$\therefore$ Number of failed students $= 29 - 20 = 9$

25. (a) Position of Suman from right

$$= \left[\begin{array}{c}\text{Difference of}\\ \text{Ramesh's position}\end{array} + \begin{array}{c}\text{First position}\\ \text{of Suman}\end{array}\right]$$

$= [(15 - 9) + 6] = 12\text{th}$

26. (d) After exchanging positions, Bhusan becomes fifteenth instead of seventh from the left, it means there are 7 students between them. So Motilal's position from the right will become twelfth. [i.e., $(15 - 7) + 4 = 12$]

27. (c) Second place of Dhirendra from left

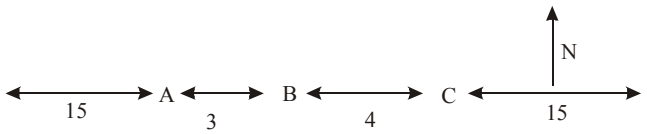
$$= \left[\begin{array}{c}\text{Difference of}\\ \text{places of}\\ \text{Madhukar}\end{array} + \begin{array}{c}\text{First place}\\ \text{of Dhirendra}\end{array}\right]$$

$= [(20 - 15) + 18] = 23\text{rd}$

28. (b) Failed Students
= [Total students] – [(Anmol's position from upwards) + (Anmol's position from downwards) – 1]
$= 45 - [(11 + 15) - 1] = 20$

29. (b) After interchanging their positions, position of A from left = 11
Then positions of A from right = 9.
$\therefore$ The total no. of people in the row
$= (9 + 11) - 1 = 19.$

30. (b)

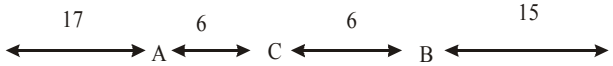


Clearly, according to the given conditions, there are 15 boys to the left of A , as well as to the right of C. Also, B lies between A and C such that there are 3 boys between A and B and 4 boys between B and C. So, number of boys in the row = (15 + 1 + 3 + 1 + 4 + 1 + 15) = 40.

31. (c) Let the number of boys be x.
Then, number of girls = 2x.
$\therefore$ x + 2x = 60 or 3x = 60 or x = 20.
So, number of boys = 20 and number of girls = 40.
Number of students behind Kamal in rank (60 – 17) =43.
Number of girls ahead of Kamal in rank = 9.
Number of girls behind Kamal in rank = (40 – 9) = 31
$\therefore$ Number of boys behind Kamal in rank
$= (43 - 31) = 12.$

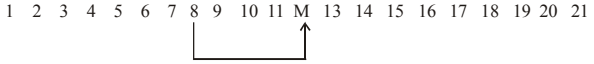
32. (c) Sumit is 17 th from the last and Ravi is 7 ranks ahead of sumit. So, Ravi is 24 th from the last.
Number of students ahead of Ravi in rank
$= (39 - 24) = 15.$
So, Ravi is 16th from the start.

33. (c) A is 18th from front and C is 24th
Number of persons between A and C = 6.
Since C is exactly in middle of A and B, so number of persons between C and B = 6.



$\therefore$ Number of persons in the queue
$= (17 + 1 + 6 + 1 + 6 + 1 + 15) = 47.$

34. (d) The change of place by Monika can be shown as under.



Clearly, Monika's earlier position was 8th from the left and 14th from the right end.

35. (b) Since Rita and Monika exchange places, so Rita's new position is the same as Monika's earlier positions. This position is 17th from the right and 10th from the left
$\therefore$ Number of girls in the row = (16 + 1 + 9) = 26.

36. (c) Three numbers in which followed by 9 and preceded 2, 3 or 4
1 1 **[2 3 9]** 4 4 5 5 5 5 **[3 3 9]** 8 7 7 7 8 8 8 5 5 **[4 3 9]** 6 6 6 6

37. (b) The possible date of birth of Ana according to Adi are 21st and 22nd September. But according to his father Ana's date of birth should be 22nd and 23rd September. Now after both conclusion there is 22nd September common date, so answer is that (b).

38. (d) 2pm = 14.00 so, = (14.00-3.15) + 0.45 = 11.30 am is answer.

39. (b) Look at Meeta's father's and brother's statement carefully. According to their statement it is clear that Meeta's father birthday is after 10th July but before 12th July. Thus, we can conclude that the birthday was on 11th July.

40. (c) According to the given statement it is clear that Abha's mother's birthday was after Wednesday but before Friday. Hence, we conclude that birthday was on Thursday.