CHAPTER 13

Number, Ranking and Time Sequence Test

In this chapter, we deal with questions which are followed with a sequence consisting numbers, ranking and time. We have to find answers on the basis of given condition. The importance of such types of questions cannot be over-emphasised as their presence in a test of reasoning is almost certain. Though no explanations are required as how to attempt these questions in exams.

In this chapter, generally we will deal three types of questions. They are based on

Type 1 Number Test

In these types of questions, a number, a set of numbers, series of digit is given and the candidate is asked to trace out digit following certain given conditions.

Example 1 How many 5s are there in the following number sequence which are immediately preceded by 7 and immediately followed by 6?

7 5 5 9 4 5 7 6 4 5 9 8 7 5 6 7 6 4 3 2 5 6 7 8

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

Solution. (a) Here, 7 5 5 9 4 5 7 6 4 5 9 8 7 5 6 7 6 4 3 2 <u>5</u> 6 7 8

Preceded by 7 and followed by 6

So, there is only one such 5.

Example 2: How many even numbers are there in the following series of numbers, each of which is immediately preceded by an odd number, but not immediately followed by an even number?

5 3 4 8 9 7 1 6 5 3 2 9 8 7 3 5

(a) Nil   (b) 1
(c) 2   (d) 3

Solution. (d) There are three such even numbers 6, 2, 8 each of which is preceded by an odd number and not followed by an even number.

5 3 4 8 9 7 1 6 3 2 9 8 7 3 5

Example (Q. Nos. 3 to 4) Following questions are based on the five three-digit numbers given below

5 1 9 3 6 4 2 8 7 1 5 8 8 3 5

Example 3: If the positions of the first and the third digit within each number are interchanged, which of the following will be the third digit of the second lowest number?

(a) 9   (b) 4

(c) 7   (d) 5

Solutions. (d) According to the question, after the position of the first and third digit interchanged new numbers are

$$519 \Rightarrow 915,\ 364 \Rightarrow 463,\ 287 \Rightarrow 782,\ 158 \Rightarrow 851,\ 835 \Rightarrow 538$$

So,   second lowest number = $538 \Rightarrow 835$

Hence,   third digit of the second lowest number = 5

Example 4: Which of the following is the difference between the second digit of the lowest and the highest of these numbers?

(a) 3   (b) 1

(c) 2   (d) 0

Solutions. (c) According to the question, difference between the second digit of the lowest and the highest number = 5 – 3 = 2

Example 5: The positions of how many digits in the number 3 5 1 4 6 2 9 8 7 will remain unchanged after the digits are rearranged in ascending order within the number?

(a) None   (b) One

(c) Two   (d) Three

Solution.(c) Hence, 4 and 8 digit remains unchanged after the rearrangement.

Example 6: The positions of the first and the sixth digit in the number 5 1 0 9 2 3 8 6 7 4 are interchanged. Similarly, the positions of the second and the seventh digit are interchanged and so on. Which of the following will be the third digit from the right end after the rearrangement?

(a) 9   (b) 0

(c) 6   (d) 3

Solution. (b) Given number = 5109238674

According to the question, after interchanging digits, new number = 3867451092

Hence, third digit from the right end = 0

Type 2 Ranking Test

In these types of questions, generally the ranks of a person both from the top and from the bottom are mentioned and the total number of persons is asked.

Example 7: A class of boys stands in a single line. One boy is nineteenth in order from both the ends. How many boys are there in the class?

(a) 27   (b) 37

(c) 38   (d) 39

Solution.(b)

19th from left   19th from right

Clearly, number of boys in the row = (18 + 18 + 1) = 37

The question can be solved by formula also, total number of boys in the row = 19 + 19 - 1 = 37

Formula Total number of persons in a row or class = (Rank of a person from upper end or left end) + (Rank of that person from lower or right end) - 1

Example 8 Anu and Vinay are ranked seventh and eleventh respectively from the top in a class of 31 students. What will be their respective ranks from the bottom in the class?

(a) 20th and 24th   (b) 24th and 20th

(c) 25th and 21st   (d) None of these

Solution. **(c)** Number of students behind Anu in rank = (31 – 7) = 24

So, Anu is 25th from the bottom.

So, Number of students behind Vinay in rank = (31 – 11) = 20

So, Vinay is 21st from the bottom.

This question can be solved by formula also,

Anu's rank from the bottom = 31 – 7 + 1 = 25th

Vinay's rank from the bottom = 31 – 11 + 1 = 21st

Formula Rank of a person from lower or right end = (Total number of persons in row) - (Rank of that person from upper or left end) + 1

Example 9: **In a class of 42 students, Mahesh's rank is 16th from the bottom. What is his rank from the top?**

(a) 25th
(b) 26th
(c) 24th
(d) 27th

Solution. **(d)** Number of students ahead Mahesh in rank = 42 – 16 = 26

So, Mahesh's rank is 27th from the top.

This question can he solved by formula also. Mahesh's rank from the top = 42 – 16 + 1 = 27th

Formula Rank of a person from upper or left end = (Total number of persons in row) - (Rank of that person from lower or right end) + 1

Type 3 Time Sequence Test

This test is set up to test a candidate's ability in time reasoning.

'Smart Facts'

- A year has 365 days.
- A leap is divisible by 4.
- February in a leap year has 29 days.
- The last day of a year is the same as first day. (Ordinary year)

Example 10: **Sunita leaves her house at 20 minutes to seven in the morning, reaches Vineeta's house in 25 minutes, they finish their breakfast in another 15 minutes and leave for their office which takes another 35 minutes. At what time do they leave Vineeta's house to reach their office?**

(a) 7.40 AM
(b) 7.20 AM
(c) 7.45 AM
(d) 8.15 AM

Solution. **(b)** Sunita leaves her house at 6.40 AM

She reaches Vineeta's house in 25 minutes, i.e., at 7.05 AM

Both leave for office 15 minutes after 7.05 AM i.e., at 7.20 AM

Example 11. **If every second Saturday and all Sundays are holidays in a 30 days month beginning on Saturday, then how many working days are there in that month?**

(a) 20
(b) 21
(c) 22
(d) 23

Solution. **(d)** As the month begins on Saturday. So, 2nd, 9th, 16th, 23rd, 30th days are Sundays, while 8th and 22nd days are second Saturdays. Thus, there are 7 holidays in all.

Number of working days = 30 – 7 = 23