Seating Arrangement Questions for IBPS RRB SCLAE-I (Mains) Exams.

Set No 178

Directions: Read the given information carefully and answer the questions given beside:

Six persons are sitting in a row. Some of them are facing north and some are facing south. They are of different ages. Person whose age is even numbered doesn't sit immediate right of the person whose age is even numbered. Two persons sit between P and T and one of them sits at extreme ends. Three persons are sitting between the persons whose age is 14 and 42. Person, whose age is 15, sits second to the left of T. There are as many persons sit between T and person whose age is 15 as between the persons whose ages are 15 and 28. Q sits immediate right of the person whose age is 15. One person sits between S and U and neither of them sits at extreme end. Q is older than R. T whose age is even numbered is older than U, who faces north. Person, whose age is 20, sits third to the left of the person whose age is 19.

1. What is the position of T with respect to the one, whose age is 14?

A. Fifth to the right   B. Fifth to the left   C. Fourth to the left   D. Fourth to the right   E. Cannot be determined

2. What is the age difference between the persons, who are immediate neighbors of U?

A. 5 years   B. 22 years   C. 6 years   D. 23 years   E. Cannot be determined

3. How many persons face south direction?

A. One   B. Two   C. Three   D. More than three   E. Cannot be determined

4. Which among the following statement (s) is/are not True?

I. T sits fourth to the left of S
II. Number of persons sit between U and T is same as between R and P
III. Difference between the age of the persons sitting on extreme ends is 6

A. Only I   B. Only II   C. Only III   D. Only II and III   E. None of these

5. If person R changes direction of sitting then what will be the difference between the total age of the persons who face North and the total age of the persons who face South?

A. 16   B. 24   C. 9   D. 17   E. None of these

Correct Answers:

1	2	3	4	5
B	D	C	A	A

Common Explanation (1-5):

References:

Six persons are sitting in a row. Some of them are facing north and some are facing south. They are of different ages.

Two persons sit between P and T and one of them sits at extreme ends.

Inferences:

From above statements,

Let the position of the persons be numbered as 1 to 6 from left end as per north direction.

As per 2nd reference point, we get 4 possibilities either P or T sit at right or left end as shown,

Case-1: When P sits at 1 & T sits at 4

Case-1					
Direction					
Person	P			T	
Age					
Position	1	2	3	4	5	6

Case-2: When P sits at 6 & T sits at 3

Case-2					
Direction					
Person			T			P
Age					
Position	1	2	3	4	5	6

Case-3: When T sits at 1 & P sits at 4

Case-3					
Direction					
Person	T			P	
Age					
Position	1	2	3	4	5	6

Case-4: When T sits at 6 & P sits at 3

Case-4					
Direction					
Person			P			T
Age					
Position	1	2	3	4	5	6

References:

Person, whose age is 15, sits second to the left of T.

Q sits immediate right of the person whose age is 15.

Inferences:

From above statements,

Here we don't know the direction of T. Therefore T faces either north or south. Thus we get one more possibility for case-1 & 2 as shown,

Case-1: Here T faces north (1st possibility) and the person, whose age is 15, sits at 2 (i.e. second to the left of T). Here, the person, whose age is 15, must face north since Q sits immediate right of the person whose age is 15 i.e. Q sits at 3 (only possibility) as shown,

Case-1					
Direction		North		North		
Person	P		Q	T		
Age		15				
Position	1	2	3	4	5	6

Case-1-A: Here T faces south (2nd possibility) and the person, whose age is 15, sits at 6 (i.e. second to the left of T). Here, the person, whose age is 15, must face south since Q sits immediate right of the person whose age is 15 i.e. Q sits at 5 (only possibility) as shown,

Case-1-A						
Direction				South		South
Person	P			T	Q	
Age						15
Position	1	2	3	4	5	6

Case-2: Here T faces north (1st possibility) and the person, whose age is 15, sits at 1 (i.e. second to the left of T). Here, the person, whose age is 15, must face north since Q sits immediate right of the person whose age is 15 i.e. Q sits at 2 (only possibility) as shown,

Case-2						
Direction	North		North			
Person		Q	T			P
Age	15					
Position	1	2	3	4	5	6

Case-2-A: Here T faces south (2nd possibility) and the person, whose age is 15, sits at 5 (i.e. second to the left of T). Here, the person, whose age is 15, must face south since Q sits immediate right of the person whose age is 15 i.e. Q sits at 4 (only possibility) as shown,

Case-2-A						
Direction			South		South	
Person			T	Q		P
Age					15	
Position	1	2	3	4	5	6

Case-3: Here T must face south (only possibility) and the person, whose age is 15, sits at 3 (i.e. second to the left of T). Here, the person, whose age is 15, must face south since Q sits immediate right of the person whose age is 15 i.e. Q sits at 2 (only possibility) as shown,

Case-3						
Direction	South		South			
Person	T	Q		P		
Age			15			
Position	1	2	3	4	5	6

Case-4: Here T must face north (only possibility) and the person, whose age is 15, sits at 4 (i.e. second to the left of T). Here, the person, whose age is 15, must face north since Q sits immediate right of the person whose age is 15 i.e. Q sits at 5 (only possibility) as shown,

Case-4						
Direction				North		North
Person			P		Q	T
Age				15		
Position	1	2	3	4	5	6

Note: Totally we have 6 cases to continue further.

References:

There are as many persons sit between T and person whose age is 15 as between the persons whose ages are 15 and 28.

One person sits between S and U and neither of them sits at extreme end.

Inferences:

From above statements,

Note: In all above 6 cases, there is only one person sit between T and person whose age is 15. Therefore there must be only one person between the persons whose ages are 15 and 28 (reference point-1)

Case-1: As per 1st reference point, the person, whose age is 28 must sit at 4 i.e. T as per seating. Given, one person sits between S and U and neither of them sits at extreme end. This condition can't be satisfied in this case. Hence this case-1 can be eliminated.

Case-1 [Eliminated]						
Direction		North		North		
Person	P		Q	T		~~SU~~
Age		15		28		
Position	1	2	3	4	5	6

Case-1-A: As per 1st reference point, the person, whose age is 28 must sit at 4 i.e. T as per seating. Given, one person sits between S and U and neither of them sits at extreme end. This condition can't be satisfied in this case. Hence this case-1-A can be eliminated.

Case-1-A [Eliminated]						
Direction				South		South
Person	P			T	Q	SU
Age				28		15
Position	1	2	3	4	5	6

Case-2: As per 1st reference point, the person, whose age is 28 must sit at 3 i.e. T as per seating. Given, one person sits between S and U and neither of them sits at extreme end. This condition can't be satisfied in this case. Hence this case-2 can be eliminated.

Case-2 [Eliminated]						
Direction	North		North			
Person	SU	Q	T			P
Age	15		28			
Position	1	2	3	4	5	6

Case-2-A: As per 1st reference point, the person, whose age is 28 must sit at 3 i.e. T as per seating. Given, one person sits between S and U and neither of them sits at extreme end. This condition can't be satisfied in this case. Hence this case-2-A can be eliminated.

Case-2-A [Eliminated]						
Direction			South		South	
Person	SU		T	Q		P
Age			28		15	
Position	1	2	3	4	5	6

Case-3: As per 1st reference point, the person, whose age is 28, sits at 1 i.e. T as per seating (1st possibility). Given, one person sits between S and U and neither of them sits at extreme end. Here S and U will sit at 3 and 5 but not in same order as shown,

Case-3						
Direction	South		South			
Person	T	Q	S/U	P	U/S	SU
Age	28		15			
Position	1	2	3	4	5	6

Case-3-A: As per 1st reference point, the person, whose age is 28, sits at 5 (2nd possibility). Given, one person sits between S and U and neither of them sits at extreme end. Here S and U will sit at 3 and 5 but not in same order as shown,

Case-3-A						
Direction	South		South			
Person	T	Q	S/U	P	U/S	S̶U̶
Age			15		28	
Position	1	2	3	4	5	6

Case-4: As per 1st reference point, the person, whose age is 28, sits at 6 i.e. T as per seating (1st possibility). Given, one person sits between S and U and neither of them sits at extreme end. Here S and U will sit at 2 and 4 but not in same order as shown,

Case-4						
Direction				North		North
Person	S̶U̶	S/U	P	U/S	Q	T
Age				15		28
Position	1	2	3	4	5	6

Case-4-A: As per 1st reference point, the person, whose age is 28, sits at 2 (2nd possibility). Given, one person sits between S and U and neither of them sits at extreme end. Here S and U will sit at 2 and 4 but not in same order as shown,

Case-4-A						
Direction				North		North
Person	S̶U̶	S/U	P	U/S	Q	T
Age		28		15		
Position	1	2	3	4	5	6

Note: Out of 8 cases, only case-3 & 3-A, case-4 & 4-A are left and the remaining cases get eliminated.

References:
Three persons are sitting between the persons whose age is 14 and 42.
Q is older than R.
Person, whose age is 20, sits third to the left of the person whose age is 19.

Inferences:

From above statements,

Case-3: R sits (only person left among given) at 6. Given, three persons are sitting between the persons whose age is 14 and 42. To satisfy this condition, the persons whose age is 14 and 42 will sit at 2 and 6, but not in same order. Given, Q is older than R. Therefore Q's age must be 42 and R's age must be 14 (only possibility). Given, person, whose age is 20, sits third to the left of the person whose age is 19. This condition can't be satisfied in this case. Hence this case-3 can be eliminated.

Case-3 [Eliminated]					
Direction	South		South			
Person	T	Q	S/U	P	U/S	R
Age	28	42	15			14
Position	1	2	3	4	5	6

Case-3-A: R sits (only person left among given) at 6. Given, three persons are sitting between the persons whose age is 14 and 42. To satisfy this condition, the persons whose age is 14 and 42 will sit at 2 and 6, but not in same order. Given, Q is older than R. Therefore Q's age must be 42 and R's age must be 14 (only possibility).

Given, person, whose age is 20, sits third to the left of the person whose age is 19. Here we don't know the direction of P. Therefore the persons whose age is 19 and 20 will sit at 1 and 4, but not in same order as shown,

Case-3-A					
Direction	South		South			
Person	T	Q	S/U	P	U/S	R
Age	19/20	42	15	20/19	28	14
Position	1	2	3	4	5	6

Case-4: R sits (only person left among given) at 1. Given, three persons are sitting between the persons whose age is 14 and 42. To satisfy this condition, the persons whose age is 14 and 42 will sit at 1 and 5, but not in same order. Given, Q is older than R. Therefore Q's age must be 42 and R's age must be 14 (only possibility). Given, person, whose age is 20, sits third to the left of the person whose age is 19. This condition can't be satisfied in this case. Hence this case-4 can be eliminated.

Case-4 [Eliminated]					
Direction				North		North
Person	R	S/U	P	U/S	Q	T
Age	14			15	42	28
Position	1	2	3	4	5	6

Case-4-A: R sits (only person left among given) at 1. Given, three persons are sitting between the persons whose age is 14 and 42. To satisfy this condition, the persons whose age is 14 and 42 will sit at 1 and 5, but not in same order. Given, Q is older than R. Therefore Q's age must be 42 and R's age must be 14 (only possibility).

Given, person, whose age is 20, sits third to the left of the person whose age is 19. Here we don't know the direction of P. Therefore the persons whose age is 19 and 20 will sit at 3 and 6, but not in same order as shown,

Case-4-A					
Direction				North		North
Person	R	S/U	P	U/S	Q	T
Age	14	28	19/20	15	42	20/19
Position	1	2	3	4	5	6

Note: Only case-3-A and case-4-A are left to continue & the remaining cases get eliminated.

References:

T whose age is even numbered is older than U, who faces north.

Person, whose age is 20, sits third to the left of the person whose age is 19.

Person whose age is even numbered doesn't sit immediate right of the person whose age is even numbered.

Inferences:

From above statements,

Case-3-A: Given, T's age is even number. This implies that T's age is 20 (even number) and P's age is 19. Given, T is older than U & U faces north. This implies that S sits at 3 i.e. S faces south and U must sit at 5.

Here U's age is 28 and T's age is 20. Given, T is older than U. This condition is not satisfied in this case. Hence this case-3-A can be eliminated.

Case-3-A [Eliminated]					
Direction	South		South		North	
Person	T	Q	S	P	U	R
Age	20	42	15	19	28	14
Position	1	2	3	4	5	6

Case-4-A: Given, T's age is even number. This implies that T's age is 20 (even number) and P's age is 19. Given, T is older than U & U faces north. To satisfy this condition, U's age must be 15 i.e. U must sit at 4 [U's age is 15 & T's age is 20 i.e. T>U, condition satisfied with only possibility]

Therefore S sits at 2 and S's age as per seating is 28.

Given, person, whose age is 20, sits third to the left of the person whose age is 19. Here P's age is 19 and P must face south to satisfy this condition.

Given, person whose age is even numbered doesn't sit immediate right of the person whose age is even numbered. To satisfy this condition, R must face south (R's age is 14, S's age is 28 & S sits immediate left of R), S must face the north (S's age is 28, R's age is 14 & R sits immediate left of S) and Q must face south (Q's age is 42, T's age is 20 & T sits immediate left of Q)

All the given conditions get satisfied and we get the completed seating.

Case-4-A					
Direction	South	North	South	North	South	North
Person	R	S	P	U	Q	T
Age	14	28	19	15	42	20
Position	1	2	3	4	5	6

Answers :

1. Following the common explanation, we get "Fifth to the left".

R's age is 14. T sits 5th to the left of R.

Hence, option B is correct.

2. Following the common explanation, we get "23 years".

P and Q are the immediate neighbors of U

P's age is 19 and Q's age is 42

Difference, Q – P = 23 years

Hence, option D is correct.

3. Following the common explanation, we get "Three persons face south direction i.e. R, P & Q".

Hence, option C is correct.

4. Following the common explanation, we get "Only I".

Statement I is not True.

Hence, option A is correct.

5. If R changes direction of sitting then R will face north direction.

Total age of R, S, U and T who are facing north is 77 years.

Total age of P and Q who are facing south is 61 years.

So, the required difference is (77 – 61) = 16 years.

Option A is the correct option.