There are variety of problems under Analytical Reasoning. Broadly, they can be categorised under the following headings.

1. **Seating Arrangements**

   (a)In a row (b)Around a table

   (i)Circular (ii)Any other shape (square, rectangular, etc.)

2. **Sequencing**
3. **Combinations**
4. **Comparisons**
5. **Selections**
6. **Series-based**
7. **Ranking**

Let us discuss and understand the details involved under each of these categories.

1. SEATING ARRANGEMENT:

In these kinds of problems, some people are sitting in a row or around a table in a desired formation. The conditions provide clues towards the actual arrangement and you have to make use of these clues to reach to the final arrangement.

(a) Seating arrangement in a row: Let us understand the type with the help of the following example.

Directions for questions 1 to 5: Answer the questions based on the following information.

i. A, B, C, D, E, F and G are sitting on a bench and all of them are facing East.

ii. C is to the immediate right of D, but not next to F.

iii. B is at the extreme end and has E as his neighbour.

iv. G is between E and F.

v. D is sitting third from the South end.

1. Who is sitting to the right of E?

   (1)A (2) C (3) D (4) None

2. Which of the following pairs is sitting at the extreme ends?

(1)A, B (2) A, E (3) C, B (4) F, B

3. The person sitting third from the North end is_.

(1)E (2) F (3) G (4) D

4. Between which of the following pairs is D sitting?

(1)A, C (2) A, F (3) C, E (4) C, F

5. Which of the conditions from i to v given above is not required to find out the place where A is sitting?

(1) i (2)ii (3) iii (4) All are required.

Solutions for questions 1 to 5:

From (i): A, B, C, D, E, F, G are sitting on a bench and all of them are facing East.

----------↑ East

From (ii): DC

From (iii): BE ----------

OR

----------EB

From (IV): E G for FG E

From (v):----------D---------- ↑⟶ south

Let us start with the arrangement obtained from condition (v).

1 2 3 4 5 6 7 T

Now, from (ii), we get that C will occupy seat 6. From (iii). B and E will occupy seats 1 and 2, respectively. From (iv), G and F will occupy 3 and 4 and finally the last seat 7 will be occupied by the remaining person A. From the above reasoning, we get the following final arrangement.

B E G F D C A ↑ East

1.4 G is sitting to the right of E.

2. 1 A and B are sitting at the extreme ends.

3. 3 G is sitting 3, d from the North end.

4.4 D is sitting between C and F.

5.4 All are required.

(b) Seating arrangement around a table: Let us consider the following example for circular arrangements.

Directions for questions 6 to 10: Read the given information carefully and answer the questions given below:

Six persons A, B, C, D, E and F are sitting around a circular table facing the centre.

i. C is sitting exactly between A and F.

ii. B is sitting two places to the left of E.

iii. D is sitting two places to the right of F.

6. Between which two persons is D sitting?

(1). F-B (2) E-B (3) C-B (4) A - B

7. Who is sitting opposite A?

(1)F (2) C (3) E (4) None of these

8. Which of the following is A's neighbour to his right?

(1)C (2) F (3) B (4) D

9. Who is sitting opposite E?

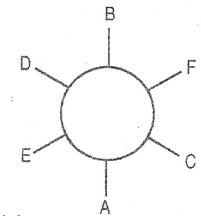
(1)A (2) B (3) C (4) F

10. Between which of the two persons is F sitting?

(1) C - D (2) C - A (3) D-A (4) C-B

Solutions for questions 6 to 10:

Start with any fixed position. Statement i does not give any fixed position since the order could be A-C-F or F-C-A. Starting with ii, we will have the positions of B and E. Now, C has to be in between A and F in such an order that D is two places to the right of F. The order in the clockwise direction has to be F-C-A, else A will fall 2 places to the right of F.



Thus, we have the arrangement as shown below.

6.2 D is sitting between E and B

7.4 B is sitting opposite A.

8.1 C is to the immediate right of A.

9. 4 F is sitting opposite E.

10.4 F is sitting between C and B.

2. SEQUENCING:

In such type of problems, certain things or events have to be arranged in a sequence or an order as per the conditions. Let us look at the following example for better understanding.

Directions for questions 11 to 14: Read the following information carefully and answer the questions given below:

i. Seven meetings - A, B, C, D, E, F, and G are to be scheduled, one on each day of a week that begins on Monday.

ii. Meeting A must take place on Monday and meeting B on the last day.

iii. Meeting B immediately takes place after meeting C which is scheduled immediately after meeting D.

iv. Meeting E, F and G must take place on three consecutive days, in that order.

11. Which is the earliest day of the week on which meeting C can take place?

(1) Wednesday (2) Thursday (3) Friday (4) Saturday

12. Which of the following must be true about the order of meetings?

(1) C takes place immediately after A. (2) C takes place immediately after F.

(3)E takes place immediately after A. (4) E takes place immediately after G.

13. If meeting A is on Wednesday, which is the first day that meeting B must take place on?

(1) Tuesday (2) Wednesday (3) Thursday (4) Friday

14. Which of the following represents a possible order of meetings on three consecutive days?

(1) ADB (2) BCF (3) DEA (4) AEF

Solution:

The given information can be summarized as follows:

Days Meetings

1 - Monday — A ...from statements (i) and (ii)

2-Tuesday— E

3 - Wednesday— F... from the statement (iv)

4-Thursday — G

5- Friday — D ... from statement (iii)

6- Saturday — C

7- Sunday — B ...from statements (i) and (iii)

11.4 —Saturday

12. 3 — E takes place immediately after A.

13.1 — from statement (ii), we know that meeting A takes place on Monday i.e., the first day, and B takes place on the last day i.e., Sunday, if the first day changes from Monday to Wednesday, then the last day becomes Tuesday.

14.4 — AEF, as can be observed from the arrangement.

Directions for questions 15 and 16: These questions are based on the following information.

Five friends - Hemant, Ram, Krishna, Pramod and '.lahesh participated in a race. Ram finished the race tefore Krishna but after Hemant. Hemant finished :ne race before Mahesh and Pramod. Pramod • nished the race after Krishna but before Mahesh.

15. Who finished the race in the fourth position?

(1) Krishna (2) Mahesh (3) Pramod (4) Ram

16. Who was the first person to finish the race?

(1) Hemant (2) Pramod (3) Ram (4) Mahesh

Solution:

Ram finished the race before Krishna but after Hemant who finished the race before Mahesh and Pramod means Hemant must finished the race first. Pramod finished the race after Krishna but before Mahesh.

So, the order we get in ranks is as follows.

Hemant	Ram	Krishna	Pramod	Mahesh
1	2	3	4	5

15.3 Pramod finished the race in the fourth position.

16.1 Hemant finished the race first.

3. COMBINATIONS:

Here, the elements in some groups are to be combined, as per the given conditions. In the following example, the groups are of (a) Men, (b) Professions and (c) Musical Instruments. As per the conditions, these are mixed and matched.

Let us look at the following example.

Directions for questions 17 to 21: Read the following information carefully and answer the questions given below:

i. Five gentlemen (Mr. Ajay, Mr. Bijay, Mr. Vinay, Mr Sanjay and Mr. Akshay) are practising five different professions (Engineering, Medical, Law, Chartered Accountancy and Architecture). Each one can play only one of the five different instruments: Tabla, Violin, Sarod, Sitar and Flute.

ii. Mr Ajay is a Doctor and can play Sarod.

iii. The Sitarist is not an Engineer.

iv. Mr Vinay and Mr Bijay are not Architects and Vinay cannot play Tabla.

v. Mr Bijay can play Violin.

vi. Mr Akshay is a Lawyer and can play Flute.

17. Which instrument does Mr. Vinay play?

(1) Sarod (2) Sitar (3) Violin (4) Flute

18. What is the profession of Mr. Bijay?

(1) Architect (2) Doctor (3) Lawyer (4) Engineer

19. Who is an Architect?

(1) Mr. Ajay (2) Mr. Akshay (3) Mr. Bijay (4) Mr. Sanjay

20. What is the profession of Mr. Vinay?

(1) Doctor (2) Engineer (3) Lawyer (4) CA

21. Which instrument can the Doctor learn from the Architect?

(1) Flute (2) Sitar (3) Tabla (4)Sarod

Solution:

Let us represent the three groups in a table. By taking the group of gentlemen as the base, because most of the information given is with regard to the gentlemen, we will try filling in the other details/ elements of the other two groups in the table, as shown below.

From ii, we get the combination Ajay-Doctor-Sarod.

From iii, we get to know that Sitar ≠ Engineer.

From iv, (Vinay, Bijay) ≠ Architects and Vinay≠ Tabla.

From v, Bijay = Violin.

From vi, we get the combination Akshay - Lawyer -Flute.

Putting the above details in the table as shown below.

Gentleman	**Professional**	**Instrument**
Ajay	Doctor	Sarod
Bijay	×Architech	Violin
Vinay	×Architech	×Tabla
Sanjay		
Akshay	Lawyer	Flute

Now, here we observe that neither Bijay nor Vinay is the Architect; hence the remaining person Sanjay is the Architect. Similarly, Sanjay plays Table and hence Vinay plays Sitar. This means that Bijay is the Engineer (from iii) and Vinay is the CA. We get the final arrangement as shown below:

Gentleman	Professional	Instrument
Ajay	Doctor	Sarod
Bijay	Engineer	Violin
Vinay	CA	Sitar
Sanjay	Architect	Tabla
Akshay	Lawyer	Flute

Now, based on the above table, let us answer the questions.

17.2 Mr. Vinay plays Sitar.

18.4 Mr. Bijay is the Engineer.

19.4 Mr. Ajay is the Architect.

20.4 Mr. Vinay is the CA.

21.3 The Doctor can learn Table from the Architect

4. COMPARISONS:

In such kind of problems, some elements are compared with each other in terms of measurable (like height, weight, speed, size marks, etc.). Let us have a look at the following example.

22. Among five boys, Vasant is taller tha Manohar, but not as tall as Raju. Jayant i taller than Dutta, But shorter than Manoha Who is the tallest in the group?

(1) Raju (2) Manohar (3) Vasant (4) Can't be determine

Solution:

Arranging the given information, we get Raju > Vasant > Manohar > Jayant > Dutta So, Raju is the tallest.

5. SELECTIONS:

`In these problems, some teams are made from the given people in accordance with the conditions. The most common statement are: 1. A and B are in the same team. 2. and B cannot be in the same team. 3. A and B are in different teams. Let us look at following example.

23. Two teams of three members each have to be selected from among six persons - P, Q, R, S, T and U. P and R cannot be in the same team. Q and S must be in the same team. R and T cannot be in the same team. Which of the following must be one of the two teams selected?

(1). P, T and U 2. P, Q and T 3. P, S and R 4. Q, R and T

Solution:

As P and R can not be in the same team and R and T cannot be in the same team, R must be with Q and S. Hence, the other team is P,T and U.

6. SERIES-BASED:

In these kind of problems, you'll see a series consisting of numbers, letters or symbols as the elements. Any one of these is selected and the following type of questions is posed.

(i) How many X are such that each is immediately preceded by Y and immediately followed withZ_X?

(ii) How many X and are such that each is immediately preceded by Y but not immediately followed with Z?

(iii) How many X are such that each is not immediately preceded by Y but immediately followed with Z?

(iv) How many X are such that each is neither immediately preceded by Y nor immediately followed with Z?

Let us look at the following example.

24 . How many 6's are there in the following series of numbers which are preceded by 7 but not immediately followed by 9?

679569768767869467769567 63

(1) One (2) two (3) three (4) four

Solution:

All the 6's that satisfy the given condition are underlined in the series. 67956976876786946776956ZJ3 so, in above series, 3 times, 6's are preceded by 7 but not immediately followed by 9.

7. RANKING:

Here, a student may have a rank from the top or bottom of the result ranking list. The following generalisation can be used while solving such questions.

T = R_T +R_B -1

Where,

T → Total number of students in the class.

R_T → Rank from the top of the ranking list.

R_B → Rank from the bottom of the ranking list.

Let us look at the following example for better clarity.

25. In a class, Krishna is ranked 8th from the top and 48th from the bottom. How many students are there in his class?

(1)56 (2)55

(3)57 (4) None of these

Solution: 2

Using the formula T = R_T+ R_B −1, we get T = 8 + 48 -1 = 55. Hence, there are 55 students in Krishna's class.

Now, please solve questions in the exercise based on the concepts discussed.

Exercise

Directions for questions 1 to 5: Answer the questions based on the following information.

i. There are five friends.

ii. They are standing in a row facing north.

iii. Jayesh is to the immediate right of Alok.

iv. Pramod is exactly between Bhagat and Subodh.

v. Subodh is exactly between Jayesh and Pramod.

1. Who is at the extreme left end?

(1) Alok (2) Bhagat (3) Subodh (4)Jayesh

2. Who is in the middle?

(1) Bhagat (2) Jayesh (3) Pramod (4) Subodh

3. To find the answer to the above two questions, which of the given statements can be dispensed with?

(1) None (2) Only ii (3) Only iii (4) Only iv

4. If five of them were to stand in a circle with the same arrangement, between which two people would Bhagat stand?

(1) Alokand Subodh (2) Jayesh and Pramod (3) Subodh and Pramod (4) Alok and Pramod

5. If a new friend Sukhdev joins the group, and is standing to the right of Bhagat, who is his other neighbour (in the original linear arrangement)?

(1) Jayesh (2) Pramod (3) Subodh (4) None

Directions for questions 6 to 10: Study the following information carefully and answer the questions given below it.

i. Eleven students A, B, C, D, E, F, G, H, I, J and K are sitting in the first row of the class facing the teacher.

ii. D, who is to the immediate left of F, is second to the right of C.

iii. A is second to the right of E, who is at one of the ends.

iv. J is the immediate neighbour of A and B and third to the left of G.

v. J is second to the left of I.

6. Who is sitting in the middle of the row?

(1)C (2) I (3)B (4)G

7. Which of the following group of friends could be sitting to the right of G?

(1) IBJA (2) ICHDF (3) CHDF (4) CKDE

8. In the above seating arrangement, which of the following statements is superfluous? (1)1 (2) H (3)111 (4) None of superfluous

9. Which of the following statements is TRUE in the context of the above seating arrangement?

(1) There are three students sitting between D and G.

(2) G and C are neighbours sitting to the immediate right of H.

(3) B is sitting between J and I.

(4) K is between A and J.

10. If E and D, C and B, A and H and K and interchange their positions, which of the following pairs of students is sitting at the ends?

(1) D and E (2) E and F (3) D and K (4) K and F

Directions for questions 11 to 15: Read the giver information carefully and answer the questions giver below:

Eight persons L, M, N, P, Q, R, S and T are sitting for a round table conference facing the centre.

i. R sits between L and S.

ii. S, who is the neighbour of Q, sits 3 places to the right of T.

iii. Q sits 2 places to the right of T.

iv. M sits 3 places to the left of R.

11. Who sits opposite M?

(1) P (2) L (3) 0 (4) T

12. Between which two persons is S sitting?

(1) L-Q (2) M-Q (3) R – Q (4) L - M

13. Who sits opposite S?

(1) N (2) P (3) T (4) Either N or P

14. Who among the following is Q's neighbour?

(1) P (2)R (3)L (4) S

15. Who Is L's neighbour on his left?

(1) R (2) S (3) 0 (4) T

Directions for questions 16 to 20: Answer the questions based on the following information.

B C, D, E, F and G are to be seated at a round able. The following apply to the seating arrangement.

i D must sit next to F.

ii B cannot sit next to F.

iii C cannot sit next to G.

16. If D is one of the two people who sit next to E, then which of the following can sit next to E?

(1)B (2) C (3) G (4) either C or G

17. Who must sit on the chairs on either side of E ,if B sits next to D and C sits next to F?

(1) B and G (2) B and C

(3) Band F (4) C and G

18. Who must sit directly across the table from F, if C sits next to D and E sits next to F?

(1) C (2) B

(3) D (4) E

19. If C sits to the immediate left of F, what is the total number of seating arrangements possible?

(1) 1 (2) 2 (3) 3 (4) 4

20. Who must sit in the chairs on either side of G, if C sits directly across the table from E?

(1) C arid D (2) D and E (3) E and F (4) B and E

Directions for questions 21 to 25: Read the Information given carefully and answer the questions that follow.

Eight persons L, M, N, P, Q, R, S and T are sitting around a square table such that there are two on each side and they are all facing the centre the table.

i. P sits between L and S.

ii. Q sits two places to the left of L.

iii. R and T are sitting along one side of the square table. R sits opposite L.

iv. M sits two places to the left of R.

21. Who sits opposite P?

(1) S (2) M (3) N (4) T

22. Who sits two places to the right of S?

(1) P (2) M (3) T (4) L

23. Between which two persons is L sitting?

(1) M-P (2) N-P (3) N-R (4) T-Q

24. Which of the following is a neighbour of L?

(1) S (2) Q (3) P (4) R

25. Who sits opposite Q?

(1) S (2) P (3) T (4) M

Directions for questions 26 to 30: Read the given information carefully and answer the questions given below:

Five books A, B, C, D and E have to be proofread ir, 6 hours where one hour needs to be spent per book.

i. A break of one hour has to be taken in the third or the fourth hour.

ii. The proofreading cannot start with A and has to end in C.

iii. D has to immediately follow B with no break in-between.

iii. A cannot be done immediately after D.

iv. A has to immediately proceed E with no break in-between...

26. Which hour is the break?

(1) Sixth (2) Fourth (3) Fifth (4) Third

27. Which is the first book to be proofread?

(1) D (2) A (3) B (4) C

28. Which book is to be proofread immediately after the break?

(1) D (3) B (2) A (4) C

29. Which book is to be proofread immediately after D?

(1) B (2) E (3) C (4) None

30. Which book is to be proofread immediately after E?

(1) A (2) E (3) C (4) B

Directions for questions 31 to 35: Read the given information carefully and answer the questions given below:

Six lectures on 6 different subjects Physics, Chemistry, Biology, Algebra, Geometry and Astronomy have to be scheduled (one on each day) across 7 days starting Sunday and ending Saturday. The schedule has to be drawn out for the subjects such that

i. One day has to be a holiday and it can be neither Sunday nor Saturday.

ii. Geometry has to be scheduled immediately after Algebra.

iii. Physics cannot start the series in the week and has to be done exactly 2 days before Astronomy.

iv. Biology has to be scheduled for Thursday and cannot immediately follow Physics.

31. What subject will start the series of lectures?

(1) Algebra (2) Chemistry (3) Physics (4) Biology

32. Which of the following days is a holiday?

(1) Monday (2) Tuesday (3) Wednesday (4) Thursday

33. On which day is the lecture in Physics scheduled?

(1) Monday (2) Tuesday (3) Wednesday (4) Friday

34. On which day is the lecture in Geometry scheduled?

(1) Monday (2) Tuesday (3) Wednesday (4) Saturday

35. How many days after Physics is Biology scheduled?

(1) One (2) Three (3) Four (4) Two

Directions for questions 36 to 40: Read if following information carefully and answer the questions given below.

i. There are seven teachers 'A', 'B', 'C\ 'D\ 'E 'F' and 'G' in a college. Each one of them teaches a different subject.

ii. There are three female and four ma teachers, and out of these, there are two pairs of couples.

iii. 'C who teaches Social Sciences is married to the teacher who teaches Chemistry.

iv. 'E' and 'G' are female teachers who tea© Zoology and Physics respectively.

v. 'A' teaches Mathematics and his wife doe not teach Physics.

vi. 'B' does not teach Chemistry or Commerce

vii. 'F and 'D' are male teachers. 'F is unmarried

36. Which subject does 'F teach? (1) Mathematics (2) Chemistry (3) Commerce (4) Social Sciences

37. Which subject does 'B' teach?

(1) Physics (2) Commerce (3) Social Sciences

(4) Cannot be determined

38. Which of the following are two pairs couples?

(1) DC and AE (2) AC and DE (3) GA and CD (4) cannot be determined

39. Which subject does A's wife teach?

(1) Chemistry (2) Zoology (3) Social Sciences (4) cannot be determined

40. Who among the following are the males among the two couples?

(1) AC (2) AE (3) AD (4) Cannot be determined

Directions for questions 41 to 45: Read the information given carefully and answer the questions 'fiat follow.

Amit, Bharati, Cheryl, Deepak and Eric are five fiends sitting in a restaurant. They are wearing caps {five different colours - yellow, blue, green, white and red. Also, they are eating five different snacks burgers, sandwiches, ice-cream, pastries and pizza.

i. The person wearing a red cap is eating pastries.
ii. Amit does not eat ice-cream and Cheryl is eating sandwiches.
iii. Bharati is wearing a yellow cap and Amit is wearing a blue cap.
iv. Eric is eating pizza and is not wearing a green cap.

41. What is Amit eating?

(1) Burgers (2) Sandwiches (3) Ice cream (4) Pastries

42. Who is wearing the green cap?

(1) Amit (2) Bharati (3) Cheryl (4) Deepak

43. Who is eating ice-cream?

(1) Amit (2) Bharati (3) Cheryl (4) Deepak

44. Which colour cap is Eric wearing?

(1) Yellow (2) Blue (3) Green (4) White

45. Which of the following combinations is not correct?

(1)Yellow cap + ice crea

(2)Red cap + pastries

(3)White cap + pizza

(4)Bharati + burger

Directions for questions 46 to 50: Answer the following questions.

46. Ramesh is taller than Vinay, who is not as tall as Karan. Sanjay is taller than Anupam but shorter than Vinay. Who among them is the tallest?

(1)Ramesh (2)'Karan (3)Vinay (4) Cannot be determined

47. Among A, B, C and D, it is known that B is heavier than A and C but C is taller than B. D is not as tall as C, while A is the shortest. C is not as heavy as A. D is heavier than B but shorter than him. Who are the heaviest and the tallest, respectively?

(1) B,C (2) A, D (3) D, C (4) C, D

48. A ranks 5th from the top in the class. B is 8th from the last. If C is ranked 6th after A and just in the middle of A and B, how many students are there in the class?

(1) 25 (2) 26 (3) 23 (4) 24

49. Three girls P, Q and R played 3 games of carom. Each player is ranked in each game according to the points earned in that game. A player with the highest point is ranked first, and so on. Each girl got a different rank in each game. P got the second rank in the first game and R got the first rank in the second game, then who got the 3rd rank in the third game?

(1) P (2) Q (3) R (4) Can't determined

50. Six students are sitting in a row. K is sitting exactly between V and R. V is sitting next to M. M is sitting next to B, who is sitting on the extreme left end and Q is sitting next to R. Who are sitting adjacent to V?

(1) Q and K (2) R and Q (3) B and M (4) M and K

51. Six persons A, B, C, D, E and F are sitting around a circle facing towards centre. B is sitting exactly between F and C. A is sitting exactly between E and D. F is to the left of D. Who is sitting between A and F?

(1) B (2) C (3) D (4) E

52. Six books are kept one above the other. History book is just above the Computer book. The Math book is between the Civics book and the Physics book. The English book is between the History book and the Civics book, then which subject book is at the bottom of the pile of books?

(1) History (2) Physics (3) Computer (4) Civics

53. In a concert, a musician had sung four classical Raagas viz. Bhairavi, Kedar, Todi and Durbari. Durbari was not sung before Bhairavi. Kedar was sung before Bhairavi. Todi was sung immediately after Durbari, then which Raaga was sung immediately after Bhairavi?

(1) Todi (2) Kedar (3) Durbari (4) Can't say

54. Three students are to be selected in a team, from a group of six students - Ram, Shyam, Raju, Amit, Rohit and Dinesh - by satisfying the following conditions.

i. Ram and Shyam cannot be in the same team.

ii. Raju and Amit must be selected together.

iii. Rohit and Dinesh cannot be in the same team.

Who among the following must be in the team?

(1) Ram (2)Shyam (3) Amit (4) Dinesh

55. Three persons must be selected from among five persons - A, B, C, D and E. A and B cannot be together. A and D cannot be together. Band C must be together. Which of the followings the correct team?

(1) B, A and E (2) A, Band C (3) A, D and B (4) B, C and F

56. If it is possible to make a meaningful word with the third, sixth and ninth letters of the word RESTAURANT, then what will be the first letter of the word? If no such word is possible, mark 'X' as your answer. If more than one such word are possible, mark 'M' as your answer.

(1) U (2) M (3) S (4) X

57. If starting the left, the first and the seventh, the second and so on, letters of the word RELATIONSHIP are interchanged; what will be the third letter from the right, if the second half of the new word thus formed is reversed?

(1) T (2) L (3) A (4) E

58. How many pairs of letters are there in the word NECESSARY which have as many letters between them in the word as there are between them in the alphabet and in the same order? 1 3 4 6 7 5 4 6 9 8 3 5 6 9 1 7 3 6 5 8 5 6

(1) 1 (2) 4 (3) 2 (4) Nill

60. How many A's are there in the following sequence which are immediately followed by B as well as immediately preceded by Z? A M B Z A B M N A B Z A B A Z B A M Z B A

(1) 1 (2) 3

(3) 2 (4) 4

Answer key

1	1	2	4	3	1	4	4	5	4	6	2	7	3	8	4	9	3	10	3
11	2	12	3	13	4	14	4	15	1	16	4	17	4	18	1	19	4	20	4
21	4	22	3	23	2	24	3	25	4	26	4	27	3	28	2	29	4	30	3
31	2	32	2	33	1	34	4	35	2	36	3	37	4	38	1	39	2	40	3
41	1	42	3	43	2	44	4	45	4	46	4	47	3	48	4	49	2	50	4
51	3	52	3	53	3	54	3	55	4	56	3	57	2	58	1	59	4	60	2

Analytical Reasoning

For questions 1 to 5:

From (i) and (ii):

From (iii):

Alok Jayesh

From(iv): (a) Bhagat Pramod Sobodh OR (b)Soubodh Pramod Bhagat

From (v): (a) Jayesh Subodh Pramod OR (b) Pramod Subodh Jayesh

Let us start with the arrangement obtained from condition (iii). Alok Jayesh

Hence, (v) (a) can't be possible.

From the above reasoning, we get the

following final arrangement.

Alok Jayesh Subodh Pramod Bhagat

1. 1 Alok is at the extreme left end.

2. 4 Subodh is in the middle.

3. 1 All statements are necessary.

4. 4 Bhagat stands between Alok and Pramod.

5. 4 As Sukhdev stands at the extreme right end, he has only one 21eighbor, Bhagat,

For questions 6 to 10:

1 2 3 4 5 6 7 8 9 10 ↑

From (ii):

C __ D F

From (iii): $\frac{E}{1}\ 2\ \frac{A}{1}$

From (iv) and (v): (a) A J B i G O R (b) B J A i G

Let us start with the arrangement obtained from condition (iii).

$\frac{E}{1}\ 2\ \frac{A}{1}$

Hence, (v) (b) can't be possible.

From (iii), (iv) and (v) (a), we get the

following arrangement.

_ _ _ _ _ _ _

Now, from (i), we get that C will occupy seat 8. Hence, we will get the following arrangement.

_ ___ _ _ __ _ _ ___ _ _

So, H can occupy either seat 2 or seat 9. Also, K can occupy seat 2 or seat 9.

6. 2 I is sitting in the middle of the row.

7. 3 The group of friends sitting to the right of G could be CHDF.

8. 4 None is superfluous.

9. 3 B is sitting between J and I.

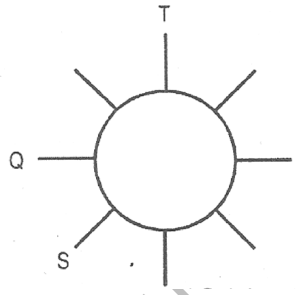
10.3 The new arrangement is

D F H J G B A E K

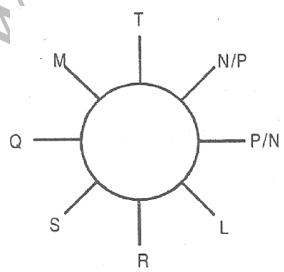
So, D and K are sitting at two ends.

For questions 11 to 15:

S sits 3 places to the right of T and Q, 2 places to the right of T. Fix up these positions first.



Now, if R has to sit between L and S, it has to be to the right of S else Q will clash with R. We can also get the position of M relative to R. However, the positions of N and P cannot be determined for sure.



11.2 L sits opposite M.

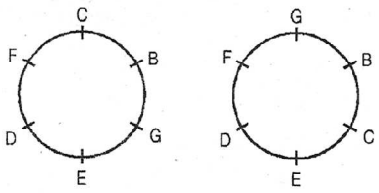
12.3 S is sitting between R and Q.

13. 4 Either Nor P sits opposite S.

14. 4 S is Q's neighbour.

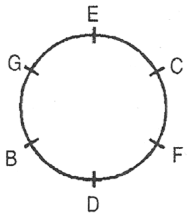
15.1 R is to the left of L.

16.4 There are two arrangements possible.



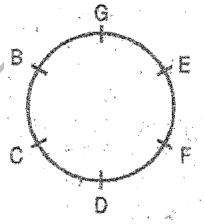
Hence, ether C or G sites next to E.

17.4



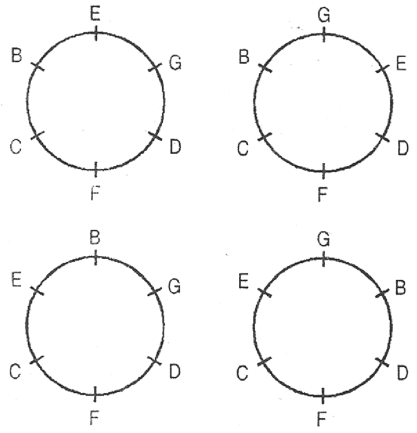
Hence, C and G sit next to E.

18.1

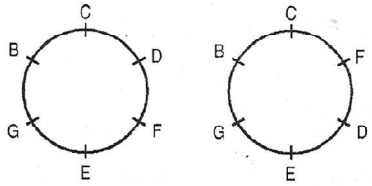


B sits opposite F.

19.4 There are arrangements possible.



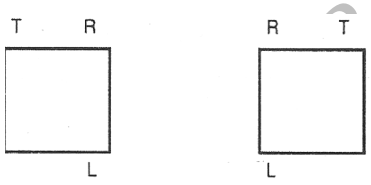
20.4 There are 2 arrangements possible.



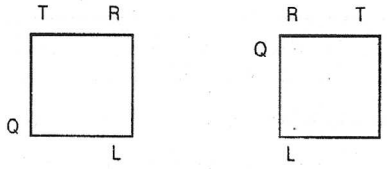
In both the arrangements position og G is between B and E only.

For questions 21. To 25:

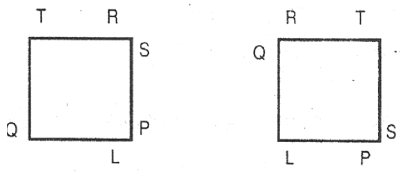
Start by fixing the position of one of the persons. The best statement to start with is (iii), since the two opposite positions are fixed simultaneously and the remaining positions can be derived relative to these positions. There are two possible arrangements.



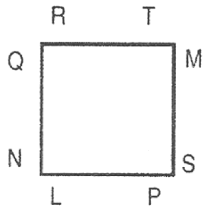
Using statement (ii), we get



Using statement (i), we get



Now, according to statement (iv) M sits 2 places to the left of R which is not possible in arrangement 1 as p is already present three. So, only arrangement 2 is possible. The final arrangement is as follows:



21.4 T sits opposite P.

22.3 T sits two places to the right of S.

23. 2 L is sitting between N and P.

24. 3 P is L's neighbour.

25. 4 M sits opposite Q.

For questions 26 to 30:

C is the last book. The combinations B-D and A-E in that order have to compulsorily exist. Now, the order will have to start with B-D, since A cannot be started with (from (ii)).

1	2	3	4	5	6
B	D				C

If the fourth hour is the break, then the combination A-E cannot be fitted without a break in-between.

1	2	3	4	5	6
B	D		X		C

Again, if the fifth hour is the break, we will have the following sequence.

1	2	3	4	5	6
B	D	A	E	X	C

However, this is not possible since A cannot follow D immediately. Hence, the break has to be in the third hour and the arrangement is as follows:

1	2	3	4	5	6
B	D	X	A	E	C

26. 4 3rd hour is the break.

27. 3 B is the first book to be proofread.

28. 2 A is to be proofread immediately after the breakfast.

29. 4 None of these.

30. 3 C is to be proofread immediately after E.

For questions 31 to 35:

From (i), we see that the holiday has to be between Monday and Friday (both days included). Biology has to be done on Thursday. Since Physics cannot immediately precede Biology and also cannot start the series, it cannot be scheduled on either Wednesday or Sunday. Also, Physics has to be done two days before Astronomy. So, Physics cannot be done on Tuesday, else Astronomy would clash with Biology. Therefore, Physics has to be scheduled for Sunday and thus, Astronomy on Wednesday. Algebra has to be immediately before Geometry. The only space available for this combination is Friday-Saturday. That leaves Chemistry. Since Sunday cannot be free, the holiday has to be on Tuesday and Chemistry on Sunday. Therefore, we get the following as the final table.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Chemistry	Physics	X	Astronomy	Biology	Algebra	Geometry

31. 2 Chemistry will start the series of lectures.

32. 2 Tuesday is the holiday.

33.1 Physics lecture is on Monday.

34. 4 Geometry lecture is on Saturday.

35. 2 Biology is scheduled 3 days after Physics.

For questions 36 to 40:

1 - C - S. Sciences x Chemistry ... from (iii) 2-E - Female, Zoology ... from (iv)

3 - G - Female, Physics ... from (iv)

4- A - Maths not married to Physics teacher... from (v

5 - B - Does teach Chemistry or Commerce ... from (vi)

6 - F - Male, unmarried ... from (vii)

7- D - Male ... from (vii)

8- 3 females and 4 males, 2 married couples ... from (ii)

'F' is unmarried; therefore, 'C is married to 'D'... (using 8) And given that 'C is married to Chemistry teacher, therefore

D is male (using vii) and teaches Chemistry C is female ... [using (iii) and (vii)]

B is male ... (using 8)

F teaches Commerce ... [using (vi)] Therefore, the final table would look like as shown below.

Teachers	Sex	Subjects	Married to
A	Male	Maths	E – Zoology
B	Male	—	Unmarried
C	Female	S.Sciences	D – Chemistry
D	Male	Chemistry	C – S.Sciences
E	Female	Zoology	A – Maths
F	Male	Commerce	Unmarried
G	Female	Physics	Unmarried

The correct choices are:

36. 3 F teaches commerce.

37. 4 Can't be determined.

38. 1 DC and AE are the two pairs of c couples.

39. 2 A's wife teaches Zoology.

40. 3 A and D are married males.

For questions 41 to 45:

Fill up all the absolutes data given. You will get the following table:

	Caps	**Snacks**
Amit	Blue	
Bharti	Yellow	
Cheryl		Sandwich
Deepak		
Eric		Pizza

Now from (i), red cap and pastries have to be a combination, can not fit in anywhere but for Deepak it fits, since parts e other combinations have filled. That leaves us with two 5 of caps - green and white and two snacks - ice-and burgers. For caps, Eric does not wear green cap; tee out of the colours left, he has to wear the white cap. In, Amit does not eat ice-cream; therefore, he has to eat burger. So, we get the following table.

	Caps	**Snacks**
Amit	Blue	
Bharti	Yellow	Ice-cream
Cheryl	Green	Sandwich
Deepak	Red	Pastries
Eric	White	Pizza

41.2 Amit is eating burgers.

42.3 Cheryl is wearing the green cap.

43.2 Bharati is eating the ice-cream.

44.4 Eric is wearing the white cap.

45.4 'Bharati + Burger' is not the right combination.

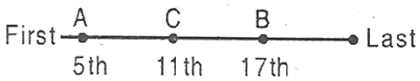
46.4 Ranking of Karan is not defined, as R and K > V > S > A consequently either Ramesh or Karan is tallest.

47.3 There is a comparison in height and weight of persons. Arranging the given information in decreasing order, we get

Weight: D > B > A > C Height: C > B > D > A

D and C are the heaviest and the tallest, respectively.

48.4



Total no. of students in the class

$\Rightarrow 5 + 6 + 6 + 7 \Rightarrow 24$

49.2 As P gets the first rank in game, he has to get Ist and IIIrd ranks in the other two games. As R gets the Ist rank in the second game, he has to get IInd and IIIrd ranks in the other two' games. From above statements, P gets IIIrd rank in game II and Ist in game III.

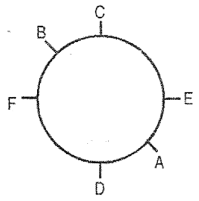
Game	Rank		
	I st	II nd	III rd
I	Q	R	P
II	P	Q	R
III	R	P	Q

So, Q got the IIrd rank game III.

50. 4 By arranging the given information, we will get the following seating arrangement.
SMYKRQ

So, V is sitting between M and K.

51. 3 Seating arrangement:



Clearly, D is sitting between A & F.

52. 3 Books are kept from top to bottom in the following sequence.

Physics Maths Civics English History Computer

Hence, the Computer book is at the bottom of the pile.

53. 3 Order in which a musician had sung four classical

Raagas is as follows:

(1) Kedar (2) Bhairavi (3) Durbari (4) Todi

So, Durbari was sung immediately after Bhairavi.

54.3 Given:

(i) Ram and Shyam cannot be in the same team.
(ii) Raju and Amit must be selected together.
(iii)Rohit and Dinesh can't be in the same team.

As at least one of Ram and Shyam must be rejected and at least one of Rohit and Dinesh must be rejected, both Raju and Amit must be selected. So, Amit must be in the team.

55.4 Given:

A and B cannot be together. A and D cannot be together. B and C must be together. Hence, the correct team is B, C and F.

56. 3 S, U and N are the third, sixth and ninth letters of the

word RESTAURANT. SUN is the only meaningful word.

57. 2 When the first and the seventh, the second and the

eighth, and so on ... letters are interchanged, the new word is ONSHIPRELATI.

Now, the third letter from the right, if the second half of this word is reversed, [ONSHIPITALER] will be L.

58. 1 Clearly, such a letter-paff is N and S. In the word

NECESSARY, there are four letters between them: E, C, E and S. In the alphabet too, N and S have four letters between them: O, P Q and R.

59. 4 Numbers satisfying the given condition are underlined

in the given series:

13467546983569173658 56 There are four such numbers.

60. 2 The As that satisfy the given condition are underlined

in the sequence.

AMBZABMNABZABAZBAMZBABZAB There are three such As.