



Explanations

Assignment 1

Set 1:

Clue i: E _ _ _ A

The position for this group is 1 to 5 or 2 to 6.

Clue ii: H _ _ _ D.

Clue iv: H is to the left of A. Thus the above two groups can be combined as

E _ _ H A _ _ D

Also B is A's other neighbour.

Clue iii: C and F are neighbours of B and E respectively.

Thus, the final arrangement is:

E C G H A B F D

1. (3), 2. (2), 3. (1), 4(4)

Set 2:

The common error in this set is for students to confuse ‘Agarwals living two floors below Chaterjees’ as two floors between Agarwals and Chaterjees. ‘Living two floors below’ means they would be separated by one floor. If I say, ‘I stay one floor below’, I would mean on the floor below. Similarly if I say ‘I stay two floors below’, I would mean the floor below the lower one i.e. separated by one floor. If this confusion did not exist, the set is an easy one.

5. (4)

1	2	3	4	5	6
Agarwals		Chaterjees			

Bhandaris and Deodhars are on neighbouring floors and hence have to be on two consecutive floors among 4, 5 and 6.

Bhandaris staying on floor 5 is a possibility but need not be true.

Also floor 2 need not necessarily be vacant. The fifth family, whose name is not mentioned, could live on this floor.

Thus none of the options are true.

6. (1)

Agarwals cannot be on 1st floor, since there needs to be exactly one floor between them and Chaterjees, but floor 3 is occupied by Ahlualias. Also neither of Bhandaris and Deodhars can be on floor 1 since they are on a floor above Ahlualias.

Thus, first floor has to be vacant. In fact the only possible arrangement is:

1	2	3	4	5	6
---	Agarwals	Ahlualias	Chaterjees	Banerjees/ Deodhars	Deodhars/ Banerjees

7. (3)

Bhandaris are on floor 1. Hence Deodhars have to be on floor 2. Thus, Agarwals can be on floor 3 or 4. They cannot be on floor 5 or 6 because Chaterjees have to be two floors above them.

8. (3)

Two floors between Deodhars and Agarwals imply that Agarwals have to be on floor 4 or higher. But since Chaterjees are two floor above

9. (4)

Statement I: Since Deodhars and Bhandaris are on consecutive floors, both of them cannot be on odd-numbered floor. Hence this statement must be false.

Statement II: Since one floor separates the Agarwals and Chaterjees, either both of them will be odd numbered floor or both on even numbered floor. Hence this statement is true.

Statement III: Agarwals and Chaterjees are separated by one floor. The floor between them has to be vacant or occupied by the fifth family. In either case the fifth family and the vacant floor can never be successive floors.

Thus this statement is false.

Set 3:

Arun does not play Hockey. So he must play Cricket. Also it is given that he is not a painter. And since the dancer plays Hockey, Arun cannot be the dancer. Hence he has to be the singer.

Bharat and Dharma do not play Cricket. Hence they have to play Hockey. Thus Chandu has to be the other person who plays Cricket.

Bharat does not dance and the dancer plays Hockey. So this dance has to be Dharma.

Thus, we will have

Arun	Bharat	Chandu	Dharma
Cricket	Hockey	Cricket	Hockey
Singer	Painter	Painter	Dancer

10. (3), 11. (2), 12. (4), 13. (4)

Set 4:

14. (1)

Clue IV states that Tata Docomo sponsors the 3rd program. Checking for this condition among the options, (2) and (4) are eliminated.

Clue III tells that Reliance sponsors a broadcasted earlier than the program sponsored by Hutch. Hence option (2) is also eliminated.
Thus an acceptable order of sponsors could be (1)



15. (3)

From clues IV and V, we know that the 3rd program I sponsored by Tata Docomo, whereas th cookery show is sponsored by idea. Hence the cookery show cannot be the 3rd program to be broadcasted.

16. (4)

Travel program has to be the 1st or the 2nd program since it is sponsored earlier than the program sponsored by Tata Docomo, which is 3rd in sequence.

Reality show is sponsored before the travel show (clue I). Hence first program to be broadcasted has to be reality show, option (4)

17. (4)

Travel show is sposored by Airtel and travel show is not the 1t program, so Airtel cnnot be the sponsors of first program, ruling out option (1).

Option (2) is also ruled out since Tata Docomo sponsors the 3rd program.

Idea sponsors cookery show (clue V) and cookery show is not the first to be broadcasted (clue 1). Hence Idea, option (3) also cannot be the answer. Thus answer has t be (4)

18. (4)

4th program: News show sponsored by Airtel.

5th program: Cookery show sponsored by Idea (clue I and V)

3rd program: Sponsored by Tata Docomo.

Hence of the remaining two sponsors, Reliance and Hutch, since clue III states that program sponsored by Reliance is before that sponsored by Hutch, hence the 1st program has to be sponsored by Reliance, option (4).

19. (4)

Since cookery program, sponsored by Idea, cannot be the 1st program (clue I) and nor 2nd (questions states 2nd program is reality show), it has to be post 2nd program (it will be the 4th program, but that is not of importance to us).

Thus the three sponsors, Tata Docomo, Idea, Airtel, have to be those who sponsors 3rd, 4th 5th program (actually in order, but again not important).

Among the remaining two sponsors, Reliance and Hutch, since clue III states that program sponsored by Reliance is before that sponsored by Hutch, hence the 2nd program, reality show, has to be sponsored by Hutch, option (4).

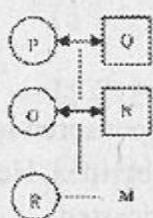
Set 5:

Since there is a grandmother involved, there are 3 generations.

P is a grandmother and Q has a grand-daughter. So one can start with the assumption that P and Q are a couple of the 1st generation.

O is wife of N and these are the second couple.

Thus, we have (all circles are female members and squares are male members, horizontal full line denotes husband wife and dotted line denotes brother-sisters)



20. (3)

O is the mother of M

21. (4)

We cannot determine the sex of M and hence cannot answer the question.

22. (4)

Since we do not know the sex of M, we cannot state any of the given options are true.

23. (2)

Read directly from the family tree.

**Assignment 2****Set 1:**

Clue ii and v: The tiger should have no animal in a cage adjacent to it and it should also not be at the end. Thus, it necessarily has to have empty cages on both its sides. Thus two empty cages are accounted for. Only one more cage can be empty.

Empty Tiger Empty

Clue iii: Tiger Empty Panther

Combining the two we have

Empty Tiger Empty Panther

Do not worry about the right or left end. All you have to think is that the mirror image of the above is also possible.

Clue iv: Panther Cougar Puma.

Hence now we have:

Empty Tiger Empty Panther Cougar Puma

Clue ii: The Lion should also not have any animal in the adjacent cages. But there can't be two more empty cages. Hence the lion and tiger should share an empty cage as their neighbour:

Lion Empty Tiger Empty Panther Cougar Puma

Clue vi: Leopard should be in a cage next to an end. Since the above are 7 cages and the Lion should not have any animal adjacent to it, the only way this can happen is:

Lion Empty Tiger Empty Panther Cougar Puma Leopard Empty

Please note since the data does not talk about the right and left ends, the mirror image of the above is also acceptable.

1. (1), 2. (1)

3. (1)

The only pair is Lion and Leopard. For other possible cases e.g. cage 2 and cage 9, the cages are empty.

4. (4)

This question cannot be answered because we do not know the right and the left end. The left of the Leopard could be Puma or could also be the empty cage.



Set 2:

5. (2)

Moral Science and Mathematics can never be the 3rd lecture. Rest all can be.

6. (3)

Physics can never be the 1st lecture or the 4th lecture because it has to be preceded by Mathematics and a break cannot separate the two subjects. It could be held in any of the other positions.

7. (3)

Among the options given, Mathematics cannot be the 3rd lecture because it has to be immediately followed by Physics, without a break.

8. (1)

Since English is after Moral Science, Moral Science has to be the 1st and English the second. Now among the given options Physics could only be the 5th lecture, with 4th being Mathematics.

9. (3)

Moral Science has to be the 1st. The only two successive lectures, without any break are the 2nd and 3rd and hence have to be Mathematics and Physics respectively. Thus, Chemistry has to be the 4th lecture.

Set 3:

As first step, all the cells in the following table can be filled directly from the clues given (the subscript refer to the clue number in the question):

Genres	Romance	Period	Action	Horror
Production	Red-Chillies _{II}			
Starring		Salman _{IV}	Hrithik _{III}	

Since Shah Rukh stars in a movie produced by Ramsay Brothers, hence, the only two vacant 2nd and 3rd row in a column is that of Horror.

Since Hrithik's action movie is not produced by Yash-Raj movies, it has to be produced by the only remaining production house i.e. Adlabs and Yash-Raj has to produce the only remaining movie i.e. period movie starring Salman.

Thus, finally,

Genres	Romance	Period	Action	Horror
Production	Red-Chillies	Yash-Raj	Adlabs	Ramsay
Starring	Aamir	Salman	Hrithik	Shah Rukh

10. (4), 11. (2), 12. (2), 13. (4)

Set 4:**14. (1)**

Option (4) is ruled out because Mrs. Agarwal has to exit earlier than Mrs. Gupta.

Option (2) is ruled out because Mrs. Gupta both enters and exits in the fourth position, which is not valid as per the given conditions.

By the same reason, Option (3) is ruled out because Mrs. Goyal enters and exits in the second position.

Thus answer would be (1)

15. (1)

Option (2) is ruled out because Mrs. Bansal is third to exit and she was third to enter as well.

Option (4) is ruled out because Mrs. Goyal is second to exit and she was second to enter as well.

Since while entering the 2nd and 3rd person is Mrs. Goyal and Mrs. Bansal, and we know that Mrs. Agarwal has to enter before Mrs. Gupta, the precise order of entering would be Mrs. Agarwal, Mrs. Goyal, Mrs. Bansal and Mrs. Gupta. Now option (3) is also ruled out since Mrs. Gupta cannot be the 4th person to exit. Thus, only choice possible is (1)

16. (3)

Since the two ladies cannot enter and leave in the same position, the first two ladies have to switch their positions while exiting and also the 3rd and 4th ladies to enter have to switch their positions among themselves, while exiting.

Hence both Mrs. Agarwal and Mrs. Gupta cannot be the first two or the last two. Also, Mrs. Agarwal has to be before Mrs. Gupta and hence among the first two ladies, one must be Mrs. Agarwal and other cannot be Mrs. Gupta.

The only choice the only option that satisfies these conditions is option (3)

17. (3)

The order of entering can be ascertained as Mrs. Goyal, Mrs. Agarwal, Mrs. Bansal and Mrs. Gupta.

(1) is definitely false as Mrs. Goyal cannot be the first to leave the store.

Mrs. Agarwal has to leave the store before Mrs. Gupta but not in the 2nd position. Since the latest Mrs. Gupta can leave is 3rd, hence Mrs. Agarwal has to necessarily be the 1st to leave.

Set 5:

N is the son of O but O is not the mother of N means O is the father of N.

(All circles are female members and squares are male members, horizontal full line denotes husband wife and dotted line denotes brother-sisters)



18. (4), 19. (4), 20. (3), 21. (4), 22. (4), 23. (3)

Assignment 3**Set 1:**

A lot of students make the mistake of interpreting “romantic novel is to the right of science fiction” as the arrangement: “SciFi Romantic”. This is wrong interpretation. To the right of means anywhere to the right of and not necessarily ‘immediately’ to the right of.

Science Fiction has Autobiography and Mystery novel as its neighbour is a good starting point.

Books on the ends are Autobiography and BizMgmt book is also a good clue to start with.

Thus, we would have

Autobiography SciFi Mystery Romance BizMgmt.

Now the right and left ends can easily be found out by any of the two clues given early in the text.

1. (3), 2. (1), 3. (2)



4. (3)

The only use of the clues mentioned in the question is to determine the right and left of the books. Thus either one of them would be sufficient.

Set 2:

The conditions are:

Percentages or Ratios DI condition (1)

Deductive Logic

5. (2)

Since DI is studied on Thursday, both Percentages and Ratios as studied before Thursday. Also to study CR, one needs to study Deductive Logic first and thus, CR cannot be studied on any day except Friday.

Option (4) is not possible because Ratios would then have to be studied before Tuesday.

6. (3)

DI is studied on Friday.

Option (1): Ratios can be studied on Wednesday, hence this option is not false.

Option (2): Ratios and Critical Reasoning can be studied on Wednesday and Thursday, consecutive days. Hence this option is also not false.

Option (3): If Ratios is studied on Thursday, it is not necessary for CR to be studied on Wednesday. Deductive Logic and CR can be studied on Monday and Tuesday respectively. Thus, this option is wrong. Please note that this option states that CR HAS to be studied on Wednesday.



7. (4)

Option (1) is not possible because CR cannot be studied before Deductive Logic

Option (2) is not possible because DI cannot be studied before Percentages

Option (3) not possible because Ratios has to be studied after Tuesday.

Only option (4) is possible.

Set 3:

The clues that help us to fill the few cells of the table directly are (iii), (iv), and (v)

Name	Teaching at	Subject	Graduated from
A			
B		Business Strategy	
C		HRM	
D	XLRI	Marketing	
E	FMS		
F			

From clue (vii), we have MDI – Taxation and IIMA – Accounts. And there are only two rows with the cells of institutes teaching at and subjects being vacant i.e. row of A and row of F. But clue (ii) states that the one who teaches Accounts is not A. Hence he has to be F and would have graduated from Wharton (clue ii itself).

Hence MDI – Taxation has to be in the row of A.

Fill these details in the above table for better understanding of the following.

The only subject left has to be Financial Management.

Using clue (v), the prof who teaches Marketing and who teaches Financial Management has to graduate from Kellogg and Stanford respectively.

Now we will have:

Name	Teaching at	Subject	Graduated from
A	MDI	Taxation	
B		Business Strategy	
C		HRM	
D	XLRI	Marketing	Kellogg
E	FMS	Financial Mgmt	Stanford
F	IIM A	Accounts	Wharton

The two institutes left unfilled have to be IIM B and IIM L. And neither of these profs have graduated from Sloan. Hence the prof graduating from Sloan has to necessarily teach at MDI.

This is enough to answer the questions asked.

8. (3), 9. (2), 10. (4), 11. (1), 12. (3)

**Set 4:**

The following details are directly given in clues ii, vi and vii.

Order	First Name	Last name	Product
1			
2	Anamika		
3		Verma	
4			Surf
5			

Take each clue turn by turn and form smaller arrangement of this table and check for the possible positions for these smaller arrangements

Clue i:

		Nirma
...
Anjali	Joshi	
...
		Gupta

There could be some rows between them or there may be none. The firm conclusion here is that Anjali Joshi has to be the fourth row. She cannot be first row and nor last row and row 2 and 3 are occupied. So fill this detail in the above table before proceeding.

And if Anjali Joshi is in the 4th order, Mrs. Gupta has to be the 5th.

Clue iii:

Ashima		Ariel

The only position possible for this arrangement now (with the earlier conclusion) is row 1. Fill this details also. Now the table will look like:

Order	First Name	Last name	Product
1	Ashima		
2	Anamika		Ariel
3		Verma	
4	Anjali	Joshi	Surf
5		Gupta	

From clue iv, Ambika is later than Anjana and hence Ambika is in row 5 and Anjana in row 3. Also Vanish is in row 5.

Using clue v, the only row for the combination Mehta – Tide is 1st row

So entire table is:

Order	First Name	Last name	Product
1	Ashima	Mehta	Tide
2	Anamika	Sharma	Ariel
3	Anjana	Verma	Nirma
4	Anjali	Joshi	Surf
5	Ambika	Gupta	Vanish

13. (1), 14. (4), 15. (3), 16. (1)

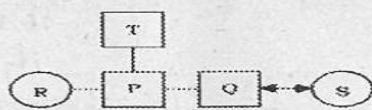
Set 5:

All 5 members are identified in the first statement itself: T has two sons, an unmarried daughter and a daughter in law. Thus, T is first generation. T has three children – two sons and one daughter. The daughter is unmarried and one of the sons is married.

P has to be the unmarried son to be the brother in law. Since the data mention's "Q's sister...", Q has to be the other son i.e. the married son. Also Q's wife is directly given as S. Thus, the daughter has to be R.

Also there is a mention of "P and his father ..." implying that T is a male member.

(All circles are female members and squares are male members, horizontal full line denotes husband wife and dotted line denotes brother-sisters)



17. (3), 18. (2), 19. (1), 20. (3), 21. (4)

Assignment 4

Set 1:

In the following explanation, $X < Y$ means X has taken lesser time than Y i.e. X has a better timing than Y, in the language of the question. Thus the left most will be rank 1 and rightmost will be rank 6.

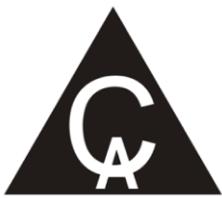
Clue i: $B < \underline{\hspace{1cm}} < E$

Clue ii: $F < \dots < D$ and $D < \dots < A$ and $E < \dots < A$

Since there are two swimmers with their timings between E and D, we could have two cases:

Case i: $D < B < \underline{\hspace{1cm}} < E$

Case ii: $B < \underline{\hspace{1cm}} < E < \underline{\hspace{1cm}} < \underline{\hspace{1cm}} < D$



But in case ii, it would be the winner, which is not so. Hence only case 1 is possible:

Now everything can be tied up together as:

F < D < B < C < E < A

1. (2), 2. (4), 3. (1), 4. (2)

Set 2:

Since there are three coaches, there necessarily have to be three pairs of PC, where P is player and C is coach.

Thus, there are only four cases as follows and further, the P with an underline is the player whose coach has not come

Case (i): PCPCPCP

Case (ii): PCPCPPC

Case (iii): PCPPCPC

Case (iv): PPCPCPC

Also the first two players to speak have to be Radal and Roger in that order. Another thing to note is that no two coaches can speak consecutively.

5. (3)

Option (3) is not possible because two coaches, Albert and Victor speak in consecutive order.

6. (4)

Blake is the third coach to speak and Yurram speaks after him. Only one case ends with a player speaking after the third coach i.e. case i. Thus, we have

Roger, ___, Radal, ___, Kovan, Blake, Yurram.

Thus, Blake has to be the fourth speaker after Roger.

7. (1)

One has to go by options.

Option (1): Only case (iv) has a player speaking second. And in this case the seventh speaker is a coach. Thus, this option has to be true.

Since there is no 'all the above' in the options, we need not check the other options.

8. (3)

Among the players, the order of speaking is defined as Radal, Roger, Yurram and Kovan.

Also Kovan, a player, is not the last speaker. Thus the arrangement has to be case (ii) or (iii) or (iv). But the two players, Yurram and Kovan did not speak consecutively (they were separated by Blake). Thus, case (ii) is not possible.

In both case (iii) and (iv), the third player to speak, Yurram, is the fourth speaker.

9. (4)

The first three speakers have to be Radal, Albert, Roger. Thus, Victor cannot speak immediately before Roger, option (1).

Victor, being a coach, cannot speak immediately before or after another coach. Thus, options (2) and (3) are eliminated.

Thus, only option remaining is (4)



10. (2)

Since Yurram's coach is not present, hence coaches of Radal and Roger are present and they will be speaking immediately after Radal and Roger respectively i.e. their coaches will be the first two coaches to speak. Since Blake is the third coach to speak, he has to be the coach of Novak. Thus Albert and Victor would have spoken before Yurram, Novak and Blake. Option (2) has to be true. The other options may be true but need not necessarily be.

Set 3:

The clues that help us to fill the few cells of the table directly are (i) and (v). Thus to start with we have:

Sport	Cricket	Football	Hockey	Tennis	Badminton	Athletics
Married to		Engineer				
City	Bangalore		Kokatta	Indore		

The engineer married to the football player does not stay at Delhi, because clue (i) says that the football player does not stay at Delhi. Thus, the second engineer has to stay at Delhi, as per clue (iv).

From (iii), the Hockey player is not married to Doctor, CA or housewife. So his wife is a Professor or an Engineer. But the engineer cannot be his wife, because the second engineer has to stay at Delhi and the hockey player does not stay at Delhi. So his wife has to be a Professor.

Clue (ii) states that the athlete does not stay at Ernakulam. Thus Ernakulam can be only in the column referring to Football or Badminton. But the spouse at Ernakulam has to be a housewife (clue vi) and hence cannot be in the column of football. Thus the only position for Housewife – Ernakulam is the column of Badminton.

Now we would have:

Sport	Cricket	Football	Hockey	Tennis	Badminton	Athletics
Married to		Engineer	Professor		Housewife	
City	Bangalore		Kokatta	Indore	Ernakulam	

The only column left for Engineer – Delhi is the last column.

Since the Doctor does not stay at Indore. Hence only position left for Doctor now is 2nd column that of Cricket. Now the remaining two cells can be filled with the last remaining options for each row.

Sport	Cricket	Football	Hockey	Tennis	Badminton	Athletics
Married to	Doctor	Engineer	Professor	CA	Housewife	Engineer
City	B'llore	Ahm'bad	Kokatta	Indore	Ernakulam	Delhi

11. (4), 12. (4), 13. (1), 14. (3)

Set 4:

Chief puppeteers	A	B	C	D
Assistants		W		Z
Animal	Dragon	Kangaroo	Gorilla	
Name		Kong	Simba	Rani

Clue ii states that W and Kong has to appear in same column. And the only position for them is 1st column. Please fill this detail so that the following makes more sense.

The only column possible for Rani is column 2. And thus, the fourth column will be Rex. Now the table will look like:

Chief puppeteers	A	B	C	D
Assistants	W			Z
Animal	Dragon	Kangaroo	Gorilla	
Name	Kong	Rani	Simba	Rex

Clue vi states that the Gorilla's name is not Rani. Thus, the only possible place for Gorilla is column 4th. And hence Kangaroo has to be in the 3rd column. The last animal, Tiger has to be 2nd column and since he is handled by X, the row of assistants can also be completely filled in.

Chief puppeteers	A	B	C	D
Assistants	W	X	Y	Z
Animal	Dragon	Tiger	Kangaroo	Gorilla
Name	Kong	Rani	Simba	Rex

15. (4), 16. (4), 17. (3), 18. (4)

Set 5:

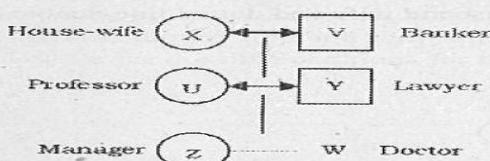
Clue iii & v: V is a grandfather and X has a grand-daughter. Thus, V and X are the first generation couple is a good assumption point to start with. Of these V will be male (grandfather) and X the female.

The same clues (iii & v) also state that the third generation would include Z (grand-daughter & manager) and W (doctor).

X is mother of U means, U would be the 2nd generation. Y is father of the doctor means, Y and U would be the middle generation, would be a couple with Y being the husband and U being the wife.

Thus, the family-tree is complete and only professions need to be added.

(All circles are female members and squares are male members, horizontal full line denotes husband wife and dotted line denotes brother-sisters)



19. (2), 20. (3), 21. (4), 22. (2), 23. (4)

Assignment 5

Set 1:

Clue i: G _ F

Clue iii: E is fourth to the right of G means:

G _ F _ E

Clue ii: B is the neighbour of F but not of E means:

G B F _ E

Clue iv: D is immediately between E and A means:

G B F _ E D A and the blank one has to be C, the neighbour of E.

Thus, final arrangement: G B F C E D A (Just consider this in a circle i.e. A is also the neighbour of G)

1. (3), 2. (1), 3. (4), 4. (1)

Set 2:

Since most of the clues have the hill station in them, we will take hill station as our header row. While this is not necessary, it will surely make our task very easy. The clues that help us to fill the few cells of the table directly are (i), (vi), (v) and (vi). Thus to start with we have:

Hill Station	M'bleswar	Kullu	Mussorie	K'kanal	Shimla	Nainital
Family	Agarwal					Joshi
Travel by		Bus			Rail	
Month				April		Mar

Clue (vi) states that Mishra does not travel in April and hence does not visit Kodaikanal. Almost clue (iii) states that Mishra does not travel to Shimla or Mussorie. Hence Mishra has to travel to Kullu.

Keep filling in conclusions as they will make the following easier to understand.

Clue (iii) also states that neither does Dubey travel to Shimla or Mussorie. Hence Dubey must travel to Kodaikanal, since all other hill stations possible for him are already filled

Since Sharma travels by bus, he would not be the family visiting Shimla. Hence he has to visit Mussorie. And the last family, Verma, has to visit Shimla. Now we would have:

Hill Station	M'bleswar	Kullu	Mussorie	K'kanal	Shimla	Nainital
Family	Agarwal	Mishra	Sharma	Dubey	Verma	Joshi
Travel by		Bus			Rail	
Month				April		Mar

All questions except 8th can now be answered.

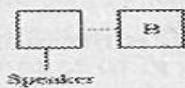
5. (4), 6. (3), 7. (1), 9. (2)

8. (1)

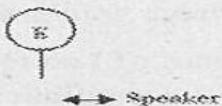
If Agarwals travelled in June, then Sharma could travel only in the remaining months of Jan, Feb and May. But clue (ii), states that he did not travel in Feb or May. Hence he must have travelled in Jan.

Set 3:

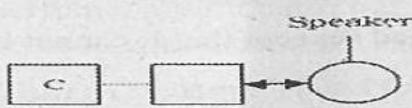
Statement 1:

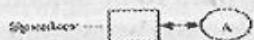


Statement 2:

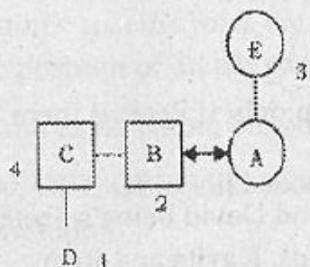


Statement 3:



Statement 4:


It would take some time to put all the pieces together and come up with the following family tree. The number besides the persons are the statement numbers they spoke.



10. (4), 11. (1), 12. (4), 13. (3), 14. (1)

Set 4:

15. (2)

Since C remains in the present office, E has to be sent to the new office. Hence option (2) cannot be a possible unit.

16. (1)

Among book-keepers, only one possibility exists i.e. B and C move to new office.

Since C is moving to new office, E has to remain in present office. Also the question states that F is moving to new office. If F is moving to new office, D cannot be sent. Thus both of the remaining, G and H have to move to the new office. Thus a unique team can be sent if C and F are moving (team of B, C, F, G, H).

17. (2)

Since C is going, E cannot go. Among D, F, G and H, three have to go. But if D goes, neither G, nor F can be sent. Thus it would not be possible for 3 secretaries to go if D is going. Hence D cannot go with C.

18. (1)

Two book-keepers have to go and A and C cannot go together. Hence B has to necessarily accompany one of A and C.

19. (4)

If D goes, neither G nor F can go. Hence the three sectaries that have to go will be D, E, and H (III is true). Since E is going, C cannot go (I is true). Hence A and B have to go.

Set 5:**20. (2)**

Option (1): Is ruled out because Shyam and Rahim want to be selected together (condition ii)

Option (2): Correct answer, does not violate any condition.

Option (3): Is ruled out because Shyam and Rahim want to be selected together (condition ii)

Option (4): Is ruled out because Ram would like to be in the group only if Peter is also there (condition v)

21. (3)

Option (1): Is ruled out because Shyam and Rahim want to be selected together (condition ii)

Option (2): Is ruled out because David insists that Fiza be selected if he is selected (condition vi)

Option (3): Correct answer, does not violate any condition.

Option (4): Is ruled out because David if selected would not like Peter in the group (condition iv)

22. (4)

Option (1): Ram would like to be in the group only if Peter is there (condition v).

Kavita will be a part only if David is there. And David being selected means Peter is not selected (condition iv). Thus, Kavita and Ram cannot be in the same group

Option (2): Since there are only two women, both Fiza and Kavita are selected. Since Kavita is selected, David also has to be selected (condition iii). Since David is selected Fiza also has to be a part of the group (condition vi), who in any case has been selected earlier. Now the group is of Kavita, Fiza and David. Only one more person has to be selected. But Shyam and Rahim would only come in together (condition ii). So neither of them can be selected. Also Peter cannot be selected because David is present (condition iv) and Ram would not join because he will come only if Peter is selected (condition v). Thus, no other person can be selected. So this option is also ruled out.

Option (3): David cannot be a part of all men group because he insists that Fiza also be selected (condition vi). Thus, all the other four men have to be in the group. But this is not possible because Ram will not join if Shyam is selected (condition i). Thus, group of 4 men cannot be formed.

Option (4): Correct answer, by elimination.



Assignment 6

Set 1:

Since all the colors have to be used, red and yellow cannot be on the two different maps, else one would not be able to use orange on either of the maps. Thus Red and Yellow have to be on the same map. And Orange will be used on the other map.

1. (5)

	Sub-Way	Bus Routes
Case 1	Blue, Red, Yellow	Purple, Orange, Green, tan
Case 2	Blue, Orange, Green/Tan	Purple, Red, Yellow, Tan/Green

The two cases proves that none of the given options need to be true.

2. (2)

Since red is used on bus map, orange necessarily has to be on the other map i.e. map of sub-way lines.

3. (4)

Since yellow is used, red necessarily has to be on the same map.

4. (3)

Since red is used, yellow also necessarily has to be on the same map. Among the given options yellow is only in options (3) and (5). Among

these, since blue is also on the same map, purple cannot be used. Thus only option (3) is possible.

5. (4)

By the same reasoning why red and yellow are on the same map, because of the condition given in the question, blue and yellow also have to be used on the same map.

Thus, red, yellow and blue have to be on the same map.

Since blue and purple cannot be on the same map and orange has to be on a map that does not have red, hence purple and orange have to be on the same map.

**6. (1)**

Going turn by turn using the options:

Option 1: Sub-way map has to have only three colours, of which two are defined in the option. Thus, only 1 more colour has to be used on this map.

Purple is used on sub-way map, hence blue has to be on the other map.

Both red and yellow have to be together and hence have to be on the other map i.e. map of bus routes. And orange has to be on a map that does not have red or yellow. Thus, orange has to be on the sub-way map. Thus, the three colours used on sub-way map are fixed, others have to be used on the bus route map. And there is a unique acceptable solution.

Since there is no 'all the above' in the options, we need not check the other options.

Set 2:

Focusing only on the clues relating to weight

Clue v: $C < B < F$

Clue vi: $D < A$

Clue vii: $F < D$

Combining the three, we have $C < B < F < D < A$.

Clue I states that A is not the heaviest. Hence, the final order from lightest to heaviest is: $C < B < F < D < A < E$.

7. (2), 8. (3)**9. (3)**

Since the lightest is the most intelligent (clue iii), hence C is the most intelligent.

Focussing on the clues relating to intelligence

Clue iii: C is the most intelligent.

Clue iv: $F < D < B$

Clue vii: $A < F$

Combining the above, $A < F < D < B < C$

Clue ii states that E is not the most intelligent, so E could be at any place but the most intelligent.

10. (5)

E's position in the order cannot be ascertained (except that E cannot be the most intelligent).

11. (5)

Since E's position is not fixed, the rank of D cannot be ascertained.

Set 3:

12. (4)

Option (1): Is ruled out because a perfume containing L should also contain N (condition i)

Option (2): Is ruled out because a perfume containing M should also contain O (condition ii)

Option (3): Is ruled out because a perfume containing L should have twice as much N (condition i)

Option (4): Correct answer

Option (5): Is ruled out because a perfume containing M should also contain O (condition ii)

13. (1)

Option (1): Adding one part of N will make the amount of N twice that of L, in accordance with condition i. Also amount of P will be yet be more than the amount of all other essences, in accordance with condition v. Hence this is the correct answer.

Option (2), (3) and (4): Is ruled out because a perfume containing M should also contain O (condition ii)

Option (5): Is ruled out because O and P should not be used together (condition iv)

14. (5)

The only reason why the perfume is unagreeable is that amount of P is less than that of other essences. Thus, the only way to make it agreeable is to add more than one part of P, i.e. option (5) among the choices.

15. (1)

Perfume containing L should contain N (condition i)

Perfume containing M should contain O (condition ii)

But N and O should not be in the same perfume (condition iii)

Hence no perfume should have L and M.

16. (2)

Only one essence can be reduced or removed altogether.

Option (1): Since O is not present, M would have to be removed altogether (condition ii). Also some part of L has to be removed so that amount of N is twice that of L (condition i). Hence this option is ruled out.

Option (2): Correct answer. O can be removed altogether so that O and P are not used in same perfume (condition iv). The proportions of the remaining essences satisfy the conditions given.

Option (3): Since N is not present, all of N has to be removed (condition i). Also since O and P cannot be in the same perfume, all of P also has to be removed (condition iv). Hence this option is ruled out.

Option (4): Some part of L has to be removed so that amount of N is twice that of L (condition i). Also since O and P cannot be in the same perfume, all of O also has to be removed (condition iv). And N cannot be used with O as well. Hence this option is ruled out.

Option (5): Both M and O will have to be removed because O and P cannot be used together (condition iv) and also O and N cannot be



Used together (condition iii). And since O is not present, M will also have to be removed altogether (condition ii).

Alternately, both of N and P will have to be removed altogether. In any case, at least two essences will have to be reduced or removed. Hence the option is ruled out.

Set 4:

Three switches, each having two positions - ON or OFF, means there can be a total of $2 \times 2 \times 2 = 8$ initial settings. For three of these settings specific rules are given and for the rest, we just have to change the position of all the switches.

In the explanation, the positions are given in the order A, B, C. Thus,

ON, OFF, OFF will become ON, ON, OFF
condition i

ON, ON, OFF will become ON, ON, ON by
condition ii

ON, ON, ON will become ON, ON, OFF by
condition iii

For rest all possibilities, the position of each gets reversed.

17. (1)

Directly by condition ii.

18. (3)

We would have to use condition iv and OFF, ON, OFF will become ON, OFF, ON

19. (2)

By condition ii, if second setting is ON, ON, ON, the initial setting could be ON, ON, OFF

By condition iv, if second setting is ON, ON, ON, the initial setting could be OFF, OFF, OFF

Among the options only (2) conforms to one of these initial settings.

20. (3)

In none of the second settings as per conditions i, ii or iii, is A in the OFF position. Hence the condition by which the switches were changed has to be by reversing their initial position. Thus, in the initial setting A necessarily has to be ON. Also none of the initial setting should be such that they are similar to that in condition I, ii or iii.

(5) is ruled out because A is not ON.

(1), (2) and (4) are ruled off because they conform to conditions iii, ii and I respectively.

21. (2)

None of the second settings as per conditions i, ii or iii, is OFF, ON, OFF. Hence the condition by which the switches were changed has to be by reversing their initial position. Thus, the initial setting necessarily has to be ON, OFF, ON.

22. (4)

Option (1): By condition ii, the final setting will be ON, ON, ON i.e. no switch is OFF.

Option (2): By condition iv the final setting will be OFF, ON, OFF i.e. two switches are OFF.

Option (3): By condition iv, the final setting will be ON, OFF, OFF i.e. two switches are OFF.

Option (4): By condition iv, the final setting will be ON, OFF, ON i.e. one switch is OFF. And this is the correct answer.

Option (5): By condition iv, the final setting will be ON, ON, ON i.e. no switch is OFF.



Set 5:

We have the following conditions:

$J < K, F < I < G$ and H is the highest note (6^{th} note)

23. (1)

Since we know that G is higher than atleast two others (I and F), G cannot be any of 1^{st} or 2^{nd} note. Thus, option (2) is not true. The only conclusion about I we can make is that it is not the least (1^{st} note) and nor can it be the second highest (5^{th} note) since G is higher than it.

24. (4)

Since J is the 4^{th} note, K necessarily has to be the 5^{th} note (being higher than J). And hence the final order will be $F < I < G < J < K < H$

25. (1)

The two notes that separate F and I necessarily has to be J and K (because the others G and H are greater than I).

Thus, final arrangement is: $F < J < K < I < G < H$

26. (5)

If J is the second note, the only possibility for the lowest note is F .
Thus the 1^{st} and 2^{nd} notes will be F and J .

I, G and K will be the 3^{rd} , 4^{th} and 5^{th} note (not necessarily in the same order) such that G is not the lowest among them i.e. 3^{rd} and I is not the highest among them i.e. 5^{th} . Thus the possibilities are $I < G < K$ or $I < K < G$ or $K < I < G$

27. (3)

Two possibilities could exist – the note separating F and I could be J or K . Thus,

Case I: $F < J < I$.

Nor either of G or K could be the 4^{th} and 5^{th} note.

Case II: Only one possibility exists: $J < F < K < I < G < H$

(1) need not necessarily be true, G could also be 5^{th} note.

(2) need not necessarily be true, K could also be 4^{th} note, in case I.

(3) In all the cases, J is lower than I and hence this option must be true.

(4) I need not be lower than K as in case II

(5) In case II, J is not in between F and I .



Assignment 7

Set 1:

Focussing on the clues regarding their weights,

By clue iii: $F < B < C$

By clue iv: $E < D$

By clue vii: the two people heavier than C and not being A implies that the two people have to be E and D.

Thus, combining all, we have $F < B < C < E < D$

Also clue vi tells us that A is neither the lightest of the heaviest. Thus, the heaviest is D and the lightest is F.

Using the other clues regarding the floors they live on, we can find that:

Ground floor is occupied by F and C and topmost floor is occupied by B and D. A and E occupy one flat each on the first and second floor (order not known) and the other flat are is vacant on these floors.

1. (1), 2. (1), 3. (5), 4. (2), 5. (5)

**Set 2:**

From clue ii, we can fill in two rows:

Kishore	
Rahul	Modern School
Ajay	
Sujata	
Preeti	Airforce Bal Bharti
Madhukar	
Harishchandra	

Out of 7 schools, 2 are fixed. Clue iv rules out 3 schools out of the remaining 5 schools for each of Sujata and Harishchandra. And 1 school is ruled out because non study at schools starting with same alphabet as their names. Thus, for Sujata and Harishchandra the school can be found as:

Since Sujata and Harishchandra are not studying at Prabhu Dayal, Ranjas or Sprindale, hence they have to study at Hansraj or Kendriya Vidyalaya . But Harishchandra cannot study at Hansraj. Hence he studies at Kendriya Vidyalaya and Sujata studies at Hansraj.

Now only 3 schools are left: Ramjas, Prabhu Dayal and Springdale.

Clue iii states that Ajay studies at neither Springdale nor Prabhu Dayal. Hence he has to study at Ramjas.

The table should now look like:

Kishore	
Rahul	Modern School
Ajay	Ramjas Public
Sujata	Hansraj Model
Preeti	Airforce Bal Bharti
Madhukar	
Harishchandra	Kendriya Vidyalaya

Rahul and Madhukar can study at either of the remaining two schools, Sprinngdale or Prabhu Dayal

6. (5), 7. (2), 8. (4), 9. (1), 10. (5)



Set 3:

Original Order	1	2	3	4	5	6
New Order						

Clue iii: 6 _ 1

This means neither 6 nor 1 can be the chapter which is in its correct position.

Also the book that separates 6 and 1 cannot be 2 or 5 since no two consecutive chapter can be together in the new order. Hence the book in between has to be either 3 or 4.

Clue v: 5 ... 2

Trying the possibilities

Possibility A: 6 – 1 occupies first possible position i.e. 1, 2, 3

Original Order	1	2	3	4	5	6
Possibility A.1	6	3	1	4	5	-
Possibility A.2	6	4	1	3	5	-

In option A.1, chapter 5 cannot be last (it is before chapter 2) and also 4 and 5 must not be consecutive. Thus only one possibility exists i.e. 5, 2, 4. But 4 cannot be the last chapter. So this option is ruled out. Also none of the chapters are in their original position which violates clue ii.

In option A.2, the last three chapters have to be one of 2, 3, or 5 and the only chapter that can be in its original position is 5. Thus, the arrangement has to be 3, 5, 2.

Possibility B: 6 – 1 occupies second possible position i.e. 2, 3, 4

Original Order	1	2	3	4	5	6
Possibility B.1	6	3	1	4	5	-
Possibility B.2	6	4	1	3	5	-

Possibility B.1: Chapter 3 is in its original position. Among the remaining chapters, 2, 5, 4, so that chapter 4 and 5 do not appear together, the order among them has to be 5, 2, 4. But this will make 5 and 6 together. So this possibility is ruled out.

Possibility B.2: By the same reasoning, the order among the remaining books can be found as 3, 5, 2

Possibility C: 6 – 1 occupies third possible position i.e. 3, 4, 5

Original Order	1	2	3	4	5	6
Possibility C.1	6	3	1	4	5	-
Possibility C.2	6	4	1	3	5	-

Possibility C.1: Among the remaining chapters, 2, 4, 5, only chapter 2 can be in its original position. Thus, the order among them can only be 5, 2, 4. But this is not possible because 4 cannot be the last chapter.

Possibility C.2: Chapter 4 is in its original position. Among the remaining chapters, 2, 3, 5, chapter 2 or 3 cannot be together and hence the order among them has to be 3, 5, 2. But this will make 1 and 2 together. Hence this possibility is ruled out.

Possibility D: 6 – 1 occupies last possible position i.e. 4, 5, 6

Original Order	1	2	3	4	5	6
Possibility D.1	6	3	1	4	5	-
Possibility D.2	6	4	1	3	5	-

Possibility D.1: Among the remaining chapters, 2, 5, 4, the only book that can be in the original position is book 2. Thus the order among them has to be 5, 2, 4

Possibility D.2: Among the remaining chapters, 2, 5, 3, so that 2 and 3 are not consecutive, the order has to be 3, 5, 2. But then none of the chapters would be in the original position. So this option is not possible.

Listing down all the possible options:

Original Order	1	2	3	4	5	6
Possibility A.2	6	3	1	4	5	-
Possibility B.2	6	4	1	3	5	-
Possibility D.1	5	2	4	6	3	-



11. (5)

Option (1): In two possibilities, chapter 3 comes before 2. So this option is ruled out.

Option (2): In possibility B.2, chapter 3 comes before 4. So this option is ruled out.

Option (3): In possibility D.1, chapter 5 comes before 1. So this option is ruled out.

Option (4): This is also true for B.2. So this option is ruled out.

Option (5): In no possibility is chapter 3 the last. Thus, this option is false.

12. (4)

In none of the possibility does chapter 4 appear in the last 3 chapters.

13. (3)

The chapters in the original position in the possibilities listed are 5, 5, 2

14. (5)

I. Is true in D.1

II. Is true in D.1

III. Is true in D.1

Set 4:

Few clues that will help us fill the cell directly are:

Manoj K will take leave in January

Narullah will go on leave immediately after Manoj

Christmas will be celebrated in December immediately after Dipawali.

With these data, the following table can be made:

Month	Oct	Nov	Dec	Jan	Feb	Mar
Name				Manoj	Narullah	
Festival		Dipawali	Christmas			

Since Durga Puja and Dipawali are celebrated in October or November, Durga Puja will be in October.

Narullah takes his leave either on Durga Puja or Id. Since he has taken leave in February and Durga Puja is in October, Narullah takes leave on Id and Id is in Feb.

Keep filling in the above details in the table for better comprehension of following data.

Manoj did not take on Holi. Thus, the only month in which Holi could happen is Mar. And the last festival Sharhul will be in Jan.

Ghosh and Vimal Jain take holiday to celebrate Durga Puja and Dipawali and hence they would be in Oct or Nov but the order is not known.

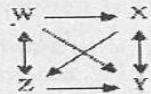
Narullah takes leave not before Ajay. Thus, Ajay could take leave only in December. And the last person, Shyam has to take leave in Mar.

Thus, finally the table will look like:

Month	Oct	Nov	Dec	Jan	Feb	Mar
Name			Ajay	Manoj	Narullah	Shyam
Festival	Durga Puja	Dipawali	Christmas	Sharhul	Id	Holi

15. (3) 16. (3), 17. (2), 18. (5), 19. (1), 20. (5), 21. (5)

Set 5:



22. (1)

Since there is a two way route between X and Y, messages can directly move from Y to X.

23. (3)

From Z messages can go directly to Y. And there exists a two-way route between W and Z, hence messages can travel from Z to W directly.

24. (4)

Option (1): Messages cant travel from X to W because the path is only one-way from W to X.

Option (2), (3) and (5): From Y one can only travel to X through the two-way route between X and Y. No other node can be reached from Y. Thus each of these options is eliminated.

Thus, the correct answer is (4)

25. (2)

Option (1): X to W: The shortest route will be from X to Z and from Z to W i.e. 2 legs.

Option (2): Y to W: The route will be from Y to X, X to Z and Z to W i.e. 3 legs

Option (3): Y to Z: The shortest route will be Y to X and X to Z i.e. 2 legs

Option (4): Z to W: The message can travel directly from Z to W i.e. 1 leg.

Option (5): Z to X: Any of Z to Y and Y to X or Z to W and W to X i.e. 2 legs.

Thus, the longest path will be for message to travel from Y to W.

26. (2)

Currently from W, messages can be sent directly to all of X, Y and Z. However messages can be received from only Z

From X, messages can be sent to Y and Z. And messages can be received from W and Y

From Y messages can be sent only to X. And can be received from each of W, X and Z.

From Z, messages can be sent to W and Y. And can be received from X and W.

Thus the problem is only with W receiving messages only from 1 node and Y being able to send only to 1 node. Thus, the one leg should be made from Y to W.



Assignment 8

Set 1:

1. (3)

Option (1) & (4): S cannot be selected with O, hence eliminated.

Option (2): Either O or V must be selected, hence eliminated

Option (3): Correct Answer.

2. (4)

Among the three objects one object has to be one of K and S and other object has to be one of O or V. Post this, only one more object can be selected, based on the conditions. Thus, T and W cannot be a pair selected.

3. (4)

Since S is selected, O cannot be a part of the selection. And since one of O or V has to be selected, V will surely be among the objects selected.

4. (1)

Since V is not selected, O has to be selected. Since O is selected, S cannot be selected and hence K has to be selected. Thus the pair O and K will be selected.

Set 2:

5. (3)

Since it snows, lines A, 2, 3 are affected.

Since temperature falls below 30 degrees, service is cancelled in either line A or line 3 but not both. So any one of them is cancelled but because of the earlier condition (snowing), both lines are affected. So that minimum number of lines are affected, service on line A should be cancelled (thus saving service on B to be delayed).

Since service on line A is affected, service on line C is also delayed.

Thus, except line 1 and B, all lines are necessarily affected.

6. (3)

Since temperature is above 90 degrees, service on either C or 3 is cancelled. Let line C be cancelled. (Because if line 3 is cancelled, line B will also be affected but if line C is cancelled line B will not be affected)

Since it rains, services on A, 2 and 3 are affected.

Thus, lines 1 and B can run as scheduled and are not affected.

7. (3)

Option (1): Lines A, 2 and 3 are affected. Since A is affected, service on C will also be affected. Thus, 4 lines are affected.

Option (2): Either A and C is affected or 3 and B is affected. Thus, two lines are affected.

Option (3): Out of C and 3, if C is cancelled, only that one line will be affected.



Set 3:

Surname	A	K	W
First Name			
Wearing a	raincoat		sweater
Colour		brown	grey

Clues i and iii help us to fill in the following in the table.

First Name	G	R	L
Surname			
Wearing a		sweater	Jacket
Colour		grey	

Thus, the only person who can wear the sweater is G and since it mentions grey sweater, the colour of the sweater will be grey. Fill this detail in the above table to understand the further logic.

Thus, R has to wear the raincoat.

Clue mentions 'Neither R nor W' implying R and W are not the same person. We also know that W was not wearing the sweater. Thus, there is only one cell for W, that of surname of L.

A did not wear the raincoat and hence A necessarily has to be the surname of G. The last surname left, K has to be of R. Since K's garment is not brown, the position of brown and blue is also fixed.

Finally,

First Name	G	R	L
Surname	A	K	W
Wearing a	Sweater	Raincoat	Jacket
Colour	Grey	Blue	Brown

8. (1), 9. (3), 10. (3), 11. (2)

Set 4:

Among the dry dishes, selecting 2 out of 3 can be done in only 3 ways viz. X, Y or X, Z or Y, Z.

Among the non-dry dishes, atmost 1 of P and S can be selected and atmost 1 of Q and T can be selected. But a total of 3 dishes have to be selected. Thus, R necessarily has to be selected. And along with R, exactly 1 of P and S and exactly 1 of Q and T has to be selected.

12. (3)

If Y is selected, T cannot be selected. Thus, Q has to be selected (it just explained above how one of Q and T has to be selected).

13. (4)

Since Z is not included, Y must be part of the lunch. And since Y is part of the lunch, T cannot be a part of the lunch.

14. (4)

As explained at the start of the set, R has to be included in the lunch packs.

15. (1)

Since T is included, Y cannot be a part of the lunch. Hence X and Z has to be part of the lunch.

**Set 5:**

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

P or R P or Q Q, R or S

Q, R or S
P or Q

1 has to be P or Q (condition for the row i.e. team B) and also P or R (condition for column i.e. team A). Hence the only ground it can be is P.

2 has to be Q, R or S (condition for the row i.e. team C) and also P or R (condition for column i.e. team A). Hence the only ground it can be is R.

4 has to be Q, R, S (condition for the row i.e. team C) and also P or Q (condition for column i.e. team B). Hence the only ground it can be is Q.

Now none of 3 or 5 can be played at S (conditions of the columns). But since each ground has to host atleast one game, hence 6 has to necessarily be played at S.

Thus, the final table will look like:

	A	B	C	D
D			S	
C	R	Q		
B	P			
A				

P or R P or Q Q, R or S

Q, R or S
P or Q**16. (2)**

Read from the table directly.

17. (2)

Option (1): Match between B and C is played at Q

Option (2): Match between B and D can be played at either P or Q

Option (3): Match between A and B is played at P

Option (4): Match between A and C is played at R

18. (4)

N teams, each playing every other team once means there are nC_2 matches. In this case since n is as less as 4, one could have just counted from the number of pairs.

19. (2)

Option (1): Match between C and D is played at S i.e. on a Saturday

Option (2): Match between A and B can be played at P i.e. on a Sunday

Option (3): Match between A and D can be played at P or R and hence the game need not necessarily be played on a Sunday.

Option (4): Match between A and C is played at R i.e. on a Saturday.



Assignment 9

Set 1:

1. (4)

Option (1) & (2): K, L M have to be seated at table 1 or 2 since they are receiving order. Hence these options are eliminated.

Option (3): L has to be seated at the same table as V. So this also eliminated.

Option (4): Correct Answer.

2. (4)

K, L, M have to be seated at table 1 or 2. Also since V has to be on the same table as L, he would also be on table 1 or 2. Thus, the only persons who can be seated on table 3 are P, Q and Z.

3. (4)

K and M are seated on different tables. L could be on either of their table, along with V. Thus the other table will have one more out of P, Q and Z. And hence the third table necessarily has two sponsors.

4. (3)

Since table 1 has 3 sponsors, each of table 2 and 3 will have 2 sponsors.

Since L and V have to be on the same table, two possible arrangements are:

Possibility 1: Table 1: Q, L, V; Table 2: K, M; Table 3: P, Z

Possibility 2: Table 1: Q, K, M; Table 2: L, V; Table 3: P, Z

The question asks us, which 'could' be true and not necessarily has to be true.

Option (1), (3) and (4) are definitely false. Option (2) which not necessary, can be a possibility. Hence (3) is our answer.

5. (4)

Of those who will give a speech, M cannot be on table 3 since he is to receive honors and hence has to be on table 1 or 2. Thus, exactly one of P or Q will be table 3. Table 3 also need to have atleast 1 more person and that person can be only Z (Since all of K, L, M, V and one of P or Q has to be on table 1 or 2). Thus, Z could not be on table 1.

6. (2)

The number of sponsors on table 1, 2, and 3 has to be 2, 3, 2 respectively.

Option (1): If table K and M are seated on table 1, then only free person who has receive honors to occupy table 2 is L. But table 2 has to have 2 people who are to receive honors. Hence this option is not possible.

Option (2): Table 1: K, Z; Table 2: L, M, V; Table 3: P, Q. Hence this option is possible

Option (3): If table 1 has V, then L also has to be on this table. Thus, there would be 3 people on each of table 1 and 3. This is not possible.

Option (4): Since table 1 has P and Z, table 2 has to have all of K, L and M. And also V. This is not possible.

Thus, the only possible arrangement is that mentioned in option (2)



Set 2:

7. (1)

Option (1): Correct answer

Option (2): If P is reduced, then L cannot be reduced (condition III). So this option is eliminated.

Option (3): Two of L, M and R are not being reduced (condition IV). So this option is eliminated.

Option (4): If both G and S are reduced, then W also has to be reduced (condition I). So this option is eliminated.

8. (4)

Option (1): Two of L, M and R are not being reduced (condition IV). So this option is eliminated.

Option (2): Exactly two of L, M and R has to be reduced (condition IV). In this option, all 3 are being reduced. So this option is eliminated.

Option (3): If P is reduced, then L is not reduced (condition III). So this option is eliminated.

Option (4): Correct answer.

9. (2)

If P is reduced, L is not reduced (condition III). And out of L, M, R, exactly 2 has to be reduced (condition IV). Thus, M and R must be reduced.

10. (1)

Option (1): The option states that L, S, G, M are reduced. Since G and S are reduced, W necessarily has to be reduced (condition I). Thus, the final list of areas to be reduced, L, S, G, M and W satisfy all the given conditions. Hence this is the correct option.

Option (2): This is eliminated because if P is reduced, L cannot be reduced (condition III).

Option (3): If N is reduced, R cannot be reduced (condition II). So this option is eliminated.

Option (4): If N is reduced, S cannot be reduced (condition II). So this option is eliminated.

11. (1)

Exactly two of L, M and R has to be reduced (condition IV). Since R is not being reduced, both L and M have to be reduced. Three more have to be reduced.

Since L is being reduced, P cannot be reduced (condition III). This rules out option (3). Also three out of G, N, S and W have to be selected to be reduced. Both N and S cannot be reduced together. Thus, the three selected has to be G, S, W or G, N, W. Thus, in either case, G is reduced.

12. (3)

Exactly two of L, M and R has to be reduced (condition IV). Since M and R are being reduced, L cannot be reduced. Also since R is being reduced, N cannot be reduced. Thus, the two area, neither of which can be reduced is L and N.

13. (4)

Exactly two of L, M and R has to be reduced (condition IV). None of L, M or R necessarily has to be reduced. Now three have to be selected out of G, N, P, S and W.

If L, M are being reduced: P cannot be reduced (condition III). Out of Both N and S cannot be reduced together. Thus, the three selected has to be G, S, W or G, N, W. Thus, in either case, G is reduced.

If L, R are being reduced: neither P nor N can be reduced (condition II & III). Thus, the other 3 have to be G, S, W.

If R, M are being reduced: N cannot be reduced (condition II). Out of the G, P, S and W, three are to be selected. G, P and S cannot be selected because of condition I. The other possible selections are G, P, W or G, S, W or P, S, W.

Thus, in any case, the only area that is always common is W. Thus, W necessarily has to be reduced.

Set 3:

14. (4)

Q has to get down at 4 since he gets off at 4 or 5 or 6. O has to in turn get down at 3. Thus, P and O get down at the same station.

15. (4)

Since Q gets off at any of 4, 5 or 6, O could get off only at any of 3, 4, 5 or 6. But we need a station where only N and O to be the ONLY commuters to get off. Thus station 3 is ruled out. Hence the answer would be any of station 4 or 5 among the given choices.

16. (4)

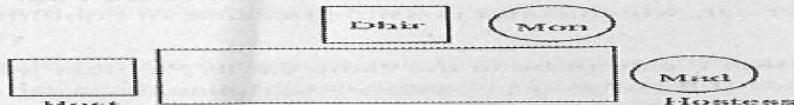
M has to get off at 2 and P will get off at 3.

Each of O, Q and N could then get off at any of 4, 5 or 6 with the only condition that O and Q has to get off at consecutive stations. Thus, N can never get off at 5. Rest all the options are possible.

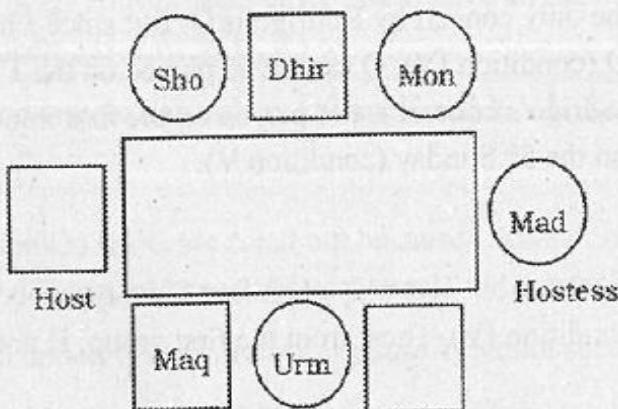
Set 4:

The hostess is not Shoba or Urmila, given directly in the caselet. Hence the hostess can only be Madhuri or Monisha. But Monisha is sitting to the right of the hostess. Thus, hostess is Madhuri. Monisha is to her right and the other neighbour of Monisha is Dhirubhai.

(In the figures a square represents a male and a circle represents a female. Also names are shortened to the first three letters)



We also know that the Maqbool and Shoba are sitting opposite each other. Thus they have to be the neighbours of the host. Also Shoba has to be on the side of Dhirubhai else Maqbool would have both neighbours as men. Also one person separates Madhuri and Urmila. So Urmila's position is fixed.



Ratan has a woman to his right and also a woman opposite him. So Ratan's position is also fixed, besides Urmila. The last person, Jackie has to be the host.

17. (3), 18. (4), 19. (1), 20. (1)

Set 5:

21. (3)

Since there are 3 pairs possible among 6 people and no person can be repeated on the same day, each day would have 3 shifts.

22. (4)

On the third day, it is given that Kumar and Laxman are paired up for one shift. This pair exists only in option (4). And the other pairs of this option are not aired earlier. Hence only this can be correct answer.

23. (2)

Kumar cannot pair up with Lakshman since these two are paired up on third day.

Kumar cannot pair up with Omkar since Omkar is paired up with Janak on second day.

Kumar cannot pair up with Nandu since they are paired up on first day.

So among the given choices, Kumar can only pair up with Manu on second day.

24. (1)

With 6 people there are ${}^6C_2 = 15$ different pairings possible. With three pairs being used on a day, repetition of pairings will start after 5th day.

Assignment 10

Set 1:

1. (2)

Option (1): If N is selected, then J is also selected (condition I). Hence this option is eliminated.

Option (2): correct answer.

Option (3): If M is selected, then J cannot be selected (condition II). Hence this option is eliminated.

Option (4): If X is selected, then P cannot be selected (condition III). Hence this option is eliminated.

2. (3)

Since J and O are both selected, J has to be played before O (condition IV). Thus, O cannot be played on the second Sunday.

3. (1)

Among J, O and Y, the only concert by Rodrigo is O. But since J has to be played before O (condition IV), O cannot be played on the 1st Sunday. And since Rodrigo's concert is not played on the first Sunday, X cannot be played on the 5th Sunday (condition V).

4. (2)

Since O is not only selected, but also played on first Sunday, hence J cannot be selected (condition IV). Thus, from the first group, H and K have to be selected.

5. (4)

By condition III, both X and Z cannot be selected. Since only one of them can be selected, the other concert from this group has to be Y.

Thus, in any selection, Y definitely has to be selected.

6. (1)

M cannot be the other concert selected with N because then there is a clash of conditions regarding selection of J i.e. condition I says that J has to be selected whereas condition II states that J cannot be selected.



Set 2:

7. (2)

Option (1): Pastels cannot be scheduled on same day as Lithography (condition I). Hence this option is eliminated.

Option (2): Correct answer.

Option (3): Oils cannot be on the first day (condition I). Hence this option is eliminated.

Option (4): Watercolors cannot be scheduled for the afternoons (condition II). Hence this option is eliminated.

8. (1)

Sculpture and Watercolors cannot be scheduled in the afternoons (conditions II). Option (4) is ruled out.

Day 2 is the only day Oils can be scheduled (condition I). Thus (2) is also eliminated.

Had Pastels been scheduled for day 1, then day 2 could not have Lithography (condition IV). Hence (3) is also ruled out.

Thus, among the given options only (1) can be a possibility.

9. (2)

Had Pastels been scheduled for day 1, then day 2 could not have Lithography (condition IV). Hence (4) is also ruled out.

Day 2 is the only day Oils can be scheduled (condition I). Thus (3) is also eliminated.

If Fresco is scheduled for 1st day morning, then none of Oils, Sculpture, Watercolors can be scheduled. But only two lectures are not scheduled out of the 8. Thus, Fresco cannot be scheduled on day 1 morning. This rules out option (1).

Thus, among the given options only (2) can be a possibility.

10. (4)

Condition IV states that Pastels cannot be scheduled on same day as Lithography. Also pasels cannot be scheduled on day 1 or day 2

because the following days do not have both lectures as Fresco and History. Thus Pastels cannot be scheduled on any day.

11. (2)

Since Oils is scheduled, it has to be on day 2. Hence Pastel cannot be on day 1 since then it has to be followed with Fresco and History (condition IV). Option (4) is ruled out.

Now Pastels cannot be scheduled on day 2 as well because then, day 3 necessarily has to Fresco had History (condition IV). With this arrangement, two free mornings are not available for scheduling Sculpture and Watercolors (condition II). (Day 2's morning is taken up by Oils or Pastels and Day 3's morning is taken up by Fresco and History).

Thus Pastels has to be scheduled on day 3. Since lithography cannot be scheduled on the same day as Oils or Pastels (condition III), Lithography necessarily has to be scheduled on first day.

**12. (4)**

Since none of the morning sessions are Sculpture or Watercolors, these are the two lectures that are not scheduled. All other lectures, including Oils and Pastels are scheduled.

Oil necessarily has to be scheduled on day 2's afternoon. Pastels has to be scheduled on day 3's afternoon (it can't be day 1's afternoon because the following day is not Fresco and History). Hence day 1's afternoon necessarily has to have the last of the 6 lectures i.e. Naturalism. Option (2) is eliminated.

Lithography cannot be scheduled on same day as Pastels and Oils (condition III). Thus Lithography is scheduled on 1st day's morning. Option (1) is eliminated.

Thus, the first day has Lithography and Naturalism. Hence option (3) is also ruled out.

History can be scheduled for day 2's morning session and hence option (4) could be true.

Set 3:

The distribution of people in the car must be 4 and 3.

13. (1)

P and K cannot be in the same car (condition IV). Thus, the 4th person in the car has to be one of P or K. But K cannot be in the same car as N (condition IV). Hence the only 4th person in the car can be P.

F or M cannot be in the car because this means P and K are both together in the other car, which is not possible because of condition IV.

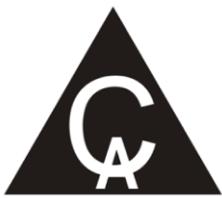
14. (4)

Condition II states that F cannot be in the same car as P unless M is also in the car. Hence if F and P are in same car, M also necessarily has to be in the car. Since M is not there in the options, we have to find who can be the fourth person in the same car.

T or R is ruled out because both of them have to be in the same car, but there is place for only 1 more person. Also K is ruled out because P and K cannot be in the same car. Thus, the fourth person in the car has to be N.

15. (4)

Option (1): This implies, the other car has F and P without M being there. This is not possible (condition II). Hence the option is ruled out.



Option (2): P and K cannot be in the same car (condition IV). So this option is also ruled out.

Option (3): T and R have to be in the same car (condition I). So this option is ruled out.

Option (4): Correct answer, by elimination.

16. (1)

Option (1): Since T is present, R also has to be present. Thus, T-R-K in one car would mean N and P are together in the other car, which is not possible. Hence T cannot be in the same car. And this is the correct answer. This also eliminates (4) since T cannot be present in the car.

Option (2) and (3): K-F-M in one car and T-R-P-N in other is possible

17. (2)

Since F and P are present in same car, M also has to be there (condition II).

K would have to be in the other car (condition IV) and hence N also necessarily has to be in the car with P. This would make it necessary for 4 people to be there in the car. The other car would have T-R-K, which is acceptable.

Set 4:

18. (2)

B has 2 members means A should have exactly 3 members and thus C will have the remaining 4 members.

**19. (4)**

C cannot have odd number of members else A and B could not have difference in number of members as 1.

C = 0, A = 5, B = 4

C = 2, A = 4, B = 3

C = 4, A = 3, B = 2

C = 6, A = 2, B = 1

C cannot be more than 6 else, B would have zero members, which is not possible.

20. (3)

If B has only 1 member, than A has to have exactly 2 members and C has to have 6 members. Since none of T, S and R can serve on C and C has to have 6 members, all the remaining 6 who can be a member in C have to be a member of C. Thus, Z, Y, X, W, V, U serve on C. The only members left to serve on A are T and S.

21. (3)

A should have 5 members and B should have 4 members.

Since W, V, U cannot serve on B, they have to serve on A (remember, each candidate has to serve on one committee). Only W of these is the option (3).

22. (1)

B having 3 members implies A has 4 members and the rest 2 are members of C.

Between A and B they should have 7 members and T, S, R necessarily have be three among the seven (since they cannot serve on C)

Possible members of A are: {W, V, U, T, S, R}. Of which T and S are part of B. Thus A necessarily has to have all the other possible four members viz. {W, V, U, R}

So the only two members left are Z and Y, who have to serve on C.

23. (2)

Option (3) & (4) are ruled out because C cannot have 3 members (else A and B cannot have a difference of 1 in the number of members)

Also option (1) is ruled out because T cannot serve on C (condition v)

So only option left (2) has to be the answer.

Set 5:

A and B are map surveyors. D and E are seismologists. F is palaeontologist.

Of the remaining, C and G, atleast one has to be a palaeontologist because there have to be atleast two palaeontologist in the group, for each to accompany one group.

Further, each of the specialisation has to have atleast one person specialising in it. And since as yet no one is a specialist in Data Interpretation, exactly one of C and G should be a palaeontologist and one should specialise in Data Interpretation.

This means that there are exactly two seismologists in the team, D and E. Hence they have to accompany separate groups.

24. (1)

Since B is always in G's group (condition iv), and C and G cannot be together (condition iii), the group with F and B will have G with them and the other group will have C. The only possibility of the 2nd palaeontologist is C and G of which G is in the first group having F as palaeontologist. Thus, C has to be a palaeontologist of the second group.

25. (4)

Since F cannot go and there have to be atleast two palaeontologist, both the persons with unknown specialisations i.e. C and G have to be palaeontologists. But this is not possible since then, there would be no one who specialises in Data Interpretation. Thus, F necessarily has to be part of the one of the group and cannot remain behind.

26. (3)

Since D is not in F's group, the only seismologist that can accompany F's group is E. Hence E necessarily has to be part of F's group.

27. (3)

If C specialises in Data Interpretation, then G necessarily has to be the 2nd palaeontologist.

Also C and G have to be in different groups (condition iii). Thus, the only other palaeontologist, F, has to be in the same group as C.

28. (3)

D and E necessarily have to be in distinct groups. Thus, one of the persons in the pair has to be D or E. Thus, the pair C and F cannot be in same group as A (else D and E would be together with G)