

ANALYTICAL REASONING

In this area of testing, normally a set of clues and conditions is given as information. One is required to sift the clues and conditions to arrive at the solution. Though this area is considered a difficult one, what is required is clarity of thinking and a methodical approach. Advantage of solving this type in the exam is that since a piece of information addresses any where between 4-7 questions, if one arrives at the correct solutions, one can mark all the answers and get credit for all.

Broadly, analytical reasoning problems can be classified in to three types

- A. Matching B. Selection C. Arrangement D. Verification

Each of these is tackled here with an example. If one goes through these examples one will be clear as to the process of tackling the problems.

A. Matching:

Ram, Shyam, Kishan and Ganesh are married to Parvati, Saraswati, Laxmi and Durga not necessarily in that order. Each has a son and a daughter. The boys are Guddu, Monu, Sonu and Pappu. The girls are Chinku, Rinku, Minku and Pinku.

The Following information is also give.

- Ram's wife is neither Parvati nor Laxmi.
- Shyam is the proud father of Pinku.
- Chinku is Guddu's sister. They are not the children of either Parvati or Saraswati.
- Ganesh is Saraswati's husband. He is not Sonu's or Pappu's father.
- Rinku's mother is neither Durga nor Laxmi who is not Kishan's wife.
- Minku is not Parvati's daughter and Shyam's son is not Sonu.

1. Ram's wife is
(a) Laxmi (b) Parvati (c) Saraswati (d) Durga
2. Monu's father is
(a) Ram (b) Shyam (c) Kishan (d) Ganesh
3. Pinku's mother is
(a) Laxmi (b) Parvati (c) Saraswati (d) Durga
4. Durga's daughter is
(a) Chinku (b) Pinku (c) Minku (d) Rinku
5. Parvati's husband is
(a) Ram (b) Shyam (c) Kishan (d) Ganesh
6. Ganesh's son is
(a) Sonu (b) Monu (c) Guddu (d) Pappu

Solutions: Solution can be got with the help of variable grid.

	Husband	Sons	Daughters
Wives			
Daughters			
Sons			

It will be clear from the above diagram that each variable has been matched with each other.

Step I:

1. Mark 'x' for all terms that do not match. e.g. Sham's son is not Sonu.
2. Mark 'o' for all terms that match. e.g. Sham is the father of Pinku.
3. For matched pair all other options with respect to each other must be marked 'x'.
e.g. If Ganesh is Saraswati's husband then Ganesh is not the husband of Parvati, Laxmi and Durga. Similarly if Saraswati is Ganesh's wife then Saraswati is not the wife of Ram, Sham and Kishan.

	Ram	Sham	Kishan	Ganesh	Sonu	Monu	Pappu	Guddu	Chinku	Pinku	Minku	Rinku
Durga				x								x
Saraswati	x	x	x	o				x	x			
Parvati	x			x				x	x		x	
Laxmi	x		x	x								x
Chinku		x			x	x	x	o				
Pinku	x	o	x	x				x				
Minku		x						x				
Rinku		x						x				
Sonu		x		x								
Monu												
Pappu				x								
Guddu												

Step II:

1. Fill up all those squares with 'o' where only one option is left for a match.
e.g. in above grid, Ram cannot be Saraswati, Parvati or Laxmi's husband. For matching only Durga is available so Durga must be Ram's wife.
2. If one term of a matched pair does not match with a third term, then its matched term also does not match with this third term. Fill such options with 'x'.
e.g. Ganesh is matched with Saraswati. Sonu is not Ganesh's son, so he cannot be Saraswati's son. Similarly Chinku is not Saraswati's daughter, so she cannot be Ganesh's daughter.
3. If one term of a matched pair matches with a third term, then its earlier matched term also matches with the third term.
e.g. Saraswati matches with Ganesh and Saraswati matches with Minku then Ganesh matches with Minku. Mark this clue in the same manner as in step I.

	Ram	Sham	Kishan	Ganesh	Sonu	Monu	Pappu	Guddu	Chinku	Pinku	Minku	Rinku
Durga	0	x	x	x	x	x	x	0	0	x	x	x
Saraswati	x	x	x	0	x	0	x	x	x	x	0	x
Parvati	x	x	0	x	0	x	x	x	x	x	x	0
Laxmi	x	0	x	x	x	x	0	x	x	0	x	x
Chinku	0	x	x	x	x	x	x	0				
Pinku	x	0	x	x	x	x	0	x				
Minku	x	x	x	0	x	0	x	x				
Rinku	x	x	0	x	0	x	x	x				
Sonu	x	x	0	x								
Monu	x	x	x	0								
Pappu	x	0	x	x								
Guddu	0	x	x	x								

In above example, 2 grids have been drawn to simplify understanding of steps. One should, however, work on a single grid.

Answers

1-d 2-d 3-a 4-a 5-c 6-b

B. Selection:

In a five-member team to go to a science fair, three scientists and two students are to be selected. ABCDE are scientists and PQRS are students.

- i. A will not go if C goes.
 - ii. P will go only if Q goes.
 - iii. Q will not go if R goes.
 - iv. B will go only if E goes.
 - v. D will not go if S goes.
 - vi. E will not go with P.
 - vii. B will not go with R.
1. What is the largest number of student and scientist combination possible?
(a) 1 (b) 2 (c) 3 (d) 4
 2. If B is selected which other scientists may be selected?
i. AE ii. DE iii. CE
(a) i only (b) i and iii (c) i or ii (d) ii only
 3. If Q is selected which other students may be selected
(a) P (b) R (c) S (d) R or S
 4. Which of the following are not necessarily selected?
(a) Q (b) A (c) E (d) S

Solution:

Combinations of scientists possible using conditions i and iv. ABE, ADE, BEC, BED, CDE.

Combinations of students possible using conditions ii and iii. PQ, QS, RS.

Combinations of scientists and students possible using conditions v, vi, and vii. ABEQS, BECQS

Answers

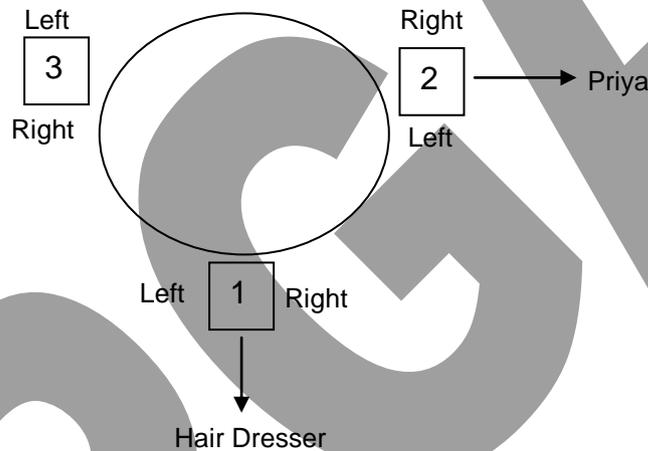
1-b 2-c 3-c 4-b

C. Arrangement

Three people Raman, Priya and Sonal are seated around a round table. One is a model, one is a hairdresser and the third is a fashion designer, not necessarily in that order. Priya is to the right of the hair dresser. The model is to the left of fashion designer.

- Who is the hair dresser?
(a) Priya (b) Raman (c) Sonal (d) Cannot be determined.
- Who is the model?
(a) Priya (b) Raman (c) Sonal (d) Cannot be determined.
- If Raman is the hair dresser who is the fashion designer?
(a) Priya (b) Raman (c) Sonal (d) Cannot be determined.

Solution:



The model can be only in position 2 or 3. If model is in position `2', in position 3 is the fashion designer. If model is in position 3, he/she is to the left of the hairdresser. Which is not possible. Therefore Priya is the model and is to the left of fashion designer and to the right of hairdresser.

Answers

1-d 2-a 3-c

D. Verification

In a village called Sacchajhuta, there are three types of people: The liars, the honest and the capricious. The liars always lie. The honest always speak the truth. The capricious are not consistent in lying or in being truthful. Also, in this village, people wear either red, green or blue turbans, showing them distinctly to be one of the above types. No person wears a multicoloured turban.

During my last visit to this village I met three people, each wearing a different coloured turban. Wanting to know which colour signified which characteristic, I asked the one with the red turban and then the one with the green turban which characteristic the blue turban signified. Both gave the same reply. So I asked the one with the green turban and then the one with the blue turban which characteristic the red turban signified. Both gave the same reply. I still could not find the answer. So lastly I asked the one with the red turban which characteristic his turban colour signified. With the help of all this data I could finally deduce the answer.

1. The red turban signifies
a. truth b. lies c. caprice d. cannot say
2. The green turban signifies
a. truth b. lies c. caprice d. cannot say
3. The blue turban signifies
a. truth b. lies c. caprice d. cannot say
4. The last answer given was that the red turban signified
a. truth b. lies c. caprice d. cannot say

Solutions:

If two people give the **same** answer, they are both telling the truth or both telling a lie

- a. both telling the truth: No two people can be of the same type. In this case, if one is truthful the other is capricious
- b. both telling a lie: As above, no two people can be of the same type. In this case, if one is a liar the other is capricious.

Therefore, in any case, one of the two is capricious, the other may be a liar or a truthful man.

Let man with red turban be R, man with green turban be G, man with blue turban be B. Using above logic let us analyse the three answer sets

Case 1 : Between R and G , one is necessarily capricious as both give same answer.

Case 2 : Between G and B , one is necessarily capricious as both give same answer.

Since among the three there can be only one who is capricious, we can deduce that G is capricious.

Green turban stands for Caprice

Case 3 : : R if speaking the truth will say that he is **truthful**.
R if telling a lie will say that he is **truthful or** that he is **capricious**.

Since a conclusion could be reached, the answer given by R must be unique to that condition. The answer that he is truthful leads to no conclusion. But answer that he is capricious is possible only when R is lying.

Red Turban stands for Lies.

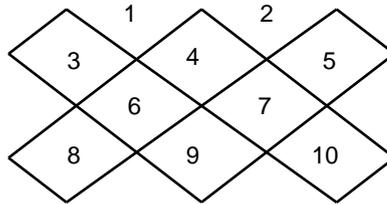
Blue Turban stands for Truth.

Answers

1-b 2-c 3-a 4-c

Exercise 1(A)

●Robert's modest stock of wine, consisting of five red and five white varieties, is stored in a wine rack shown in the diagram.



Red Wines - Beaujolais; Cabernet Sauvignon; Chateauneuf-du-Pape; Chianti; Claret

White Wines - Chablis; Muscadet; Muscat; Piesporter; Sancerre

- Each horizontal row contains at least one red and one white wine. Three of the whites are underneath the reds and two of the reds are underneath whites.
- The Chablis occupies an even-numbered position.
- The Muscat is to the right of the Sancerre in the same three-bottled row.
- The Chateauneuf-du-Pape is not in the same horizontal row as the Sancerre.
- The Beaujolais is horizontally between the Piesporter to the left and the Claret to the right.
- The Cabernet Sauvignon is underneath the Muscadet.

1. Chateauneuf-du-Pape is in position
(a) 1 (b) 4 (c) 5 (d) 8
2. Muscadet is in position
(a) 3 (b) 4 (c) 2 (d) 10
3. Chianti is in position
(a) 1 (b) 4 (c) 5 (d) 8
4. Cabernet Sauvignon is in position
(a) 5 (b) 6 (c) 7 (d) 8
5. Chablis is in position
(a) 5 (b) 6 (c) 7 (d) 8

●The Khanna's are a joint family of five members. Of the two sons Parikshit supports his father and sister Sulakshana who is older by a year than Rashmi. Karan's sister is not on speaking terms with Karan's wife who is liked by Tarkeshwar.

6. Who is the eldest member of the family?
(a) Karan (b) Tarkeshwar (c) Parikshit (d) Rashmi
7. What is the relationship of Karan with Rashmi?
(a) brother (b) husband (c) brother in law (d) cannot say
8. Sulakshana is Karan's
(a) wife (b) sister in law (c) sister (d) mother

●In a certain language "Sango appa kuru" means "Girls are gentle". "Kuru loga ochin peri" means "Gentle people need care". "Sango ochin peri" means "Girls need care".

9. Which codes stand for 'people' and 'need'?
- (a) appa and ochin (b) sango and ochin (c) ochin and loga (d) loga and ochin

• Inspector Ghote has discovered that 5 people were involved in the murder of Miss Batliwala. Nine suspects are short listed by him. Maina, Naina and Raina are women. Ooman, Sangha, Topaz, Unni, Vasu and Wagle are men. Through intelligent deliberation and analysis, Ghote has also made a checklist of points.

- (i) There were at least two women involved in the crime.
(ii) Raina will never collude with Ooman.
(iii) Sangha and Topaz will always commit crimes together.
(iv) Unni and Vasu never work together.

10. If all three women were involved in the crime, the men were

- (a) Sangha and Topaz
(b) Sangha and Topaz or Unni and Vasu.
(c) Sangha, Topaz or Unni and Wagle or Vasu and Wagle.
(d) Unni and Wagle or Wagle and Vasu.

11. Greatest number of choices for men to be involved is possible if the women in question are

- (a) Maina, Naina and Raina
(b) Either Maina or Naina and Raina
(c) Maina and Raina
(d) Maina and Naina

12. If Maina was involved in the crime and Naina is not, which statements given below are true necessarily?

- i. Either Unni or Vasu but not both are involved.
ii. Sangha and Topaz will be involved.

- (a) i only (b) ii only (c) both i and ii (d) either i or ii

13. Greatest number of combinations are possible if which of the following are definitely involved in the crime?

- (a) Sangha and Topaz (b) Vasu (c) Raina (d) Wagle

14. Which of the following statements is definitely true?

- i. If only two women are involved in the crime Sangha and Topaz must be involved.
ii. If Raina is not involved in the crime, Ooman must be involved.
iii. If either Maina or Naina is not involved in the crime Sangha and Topaz must be involved.

- (a) i only (b) i and iii only (c) ii only (d) iii only

15. If Ooman was involved, the other persons must be

- (a) Maina, Naina, Sangha and Topaz.
(b) Maina and Naina with either Sangha and Topaz or Unni and Wagle
(c) Maina and Naina with either Unni and Wagle or Vasu and Wagle
(d) Maina and Naina with either Sangha and Topaz or Unni and Wagle or Vasu and Wagle.

- Four mountain climbers, **Hillary, Norgay, Hunt and Austen** each saw a sight on their climb of Mt. Everest -- **a bird, a plane, Superman and a ship**. However, none saw what any of the others saw. In order to alleviate the tedium back at base camp they decide to quiz the other members of the camp. Each makes two false statements and one true statement. Read their statements and answer the questions that follow.

Hillary: I saw Superman. Norgay saw the ship. Hunt did not see the plane.

Hunt: Hillary saw Superman. Norgay did not see Superman. I saw the plane.

Norgay: Hunt saw the plane. I did not see the ship. Austen didn't see the bird.

Austen: I saw a ship. Norgay saw the plane. Hillary saw the bird.

16. Hillary saw
(a) a bird (b) a plane (c) a ship (d) superman
17. Norgay saw
(a) a bird (b) a plane (c) a ship (d) superman
18. Hunt saw
(a) a bird (b) a plane (c) a ship (d) superman
19. Austen saw
(a) a bird (b) a plane (c) a ship (d) superman
20. Which of the following is false?
(a) Hunt's second statement is true.
(b) Hillary's second statement is true.
(c) Norgay's second statement is true.
(d) Austen's second statement is true.

PROGGA

Exercise 1(B)

- Five restaurants in Pune are run by five married couples.

Husband: Balbir, Govind, Jaidev, Jayant, Parag
Wife: Basanti, Chandani, Mayavati, Parvati, Savitri.
Surname: Bagga, Joshi, Nath, Periyar, Sen
Restaurant: Rangmahal, Sagar, Ashiana, Garden Court, Pinnacle Garden

- No husband shares a first-name initial with his wife; only one husband, who is not Parag, has an identical initial for his first name and surname, but none of the wives does.
- The Rangmahal is run by Jaidev and his wife.
- Govind and Mayavati are one of the couples.
- Chandani's husband is Mr Nath.
- Mrs Joshi is the owner of the Sagar and Parvati is the owner of the Pinnacle Garden; neither of them is married to Jayant.
- The restaurant run by the Sens has the word 'Garden' as part of its name.
- The Ashiana is not run by Mr Periyar, whose wife is not Savitri.

1. Jaidev's wife is
(a) Parvati (b) Chandani (c) Mayavati (d) Basanti
2. Chandani owns the restaurant
(a) Ashiana (b) Sagar (c) Rangmahal (d) Pinnacle Garden
3. The Sens run the restaurant
(a) Rangmahal (b) Garden Court (c) Ashiana (d) Sagar
4. Savitri's husband is
(a) Parag (b) Balbir (c) Jaidev (d) Jayant
5. Pinnacle Garden's owner is
(a) Jaidev (b) Govind (c) Balbir (d) Jayant
6. The Periyars run the restaurant
(a) Rangmahal (b) Garden Court (c) Ashiana (d) Sagar
7. Which of the men has the surname Nath ?
(a) Parag (b) Balbir (c) Jaidev (d) Jayant
8. Balbir's surname is
(a) Sen (b) Bagga (c) Joshi, (d) Periyar
9. Sagar is owned by
(a) Jaidev (b) Parag (c) Balbir (d) Jayant
10. Which of the following women is Mrs. Joshi?
(a) Parvati (b) Chandani (c) Savitri (d) Basanti

Exercise 2 (A)

•The first five inter-school football matches on a pools coupon were listed in alphabetical order of home sides. (A home side is one which is also hosting that match on its school grounds). Work out full details of all five games, the name of each home and away side and the result of each match.

Teams: Bhagubhai Highschool, Crescent Highschool, St. Evangeline's Highschool, Loyola Public School, Ornella's Highschool, Patron Saint's Highschool, Queen's Public School, Tarachand Public School, Vidyaniketan Highschool, Walchand Highschool.

Goal scored: 0, 0, 0, 1, 1, 1, 2, 2, 2, 3

- Patron Saint's won their home game, which was number 4 on the coupon, by the identical score by which Tarachand Public were defeated in another game.
- St. Evangeline scored as many goals as all the other away sides combined, and were still losers; their name appeared just below Bhagubhai's on the coupon.
- One match was between Walchand and Queen's Public; the latter did not feature on the same side of the coupon as Vidyaniketan.
- Only one home side failed to score, losing by one goal.
- Just one game ended in a draw, with a 1-1 scoreline
- Ornella's scored three goals while Loyola Public were not defeated.

- Goals scored by Crescent Highschool were
(a) 0 (b) 1 (c) 2 (d) 3
- Queen's Public School scored
(a) 0 (b) 1 (c) 2 (d) 3
- Loyola Public school played against
(a) Crescent (b) Bhagubhai (c) Patron Saint's (d) Ornella's
- St. Evangeline Highschool played against
(a) Ornella's (b) Bhagubhai (c) Vidyaniketan (d) Crescent
- Tarachand Public school lost to
(a) Crescent (b) Vidyaniketan (c) Patron Saint's (d) Loyola Public
- Ornella's Highschool scored
(a) 0 (b) 1 (c) 2 (d) 3

•The government of India has to send a four scientists' team comprising of geologists and biologists on a mission to the moon. The team must have at least 2 geologists. The selection commission has short-listed the following persons.

Geologists: Dr. Athavle, Dr. Barooah, Dr. Chatterjee.

Biologists: Dr. Mukharjee, Dr. Nanda, Dr. Oswal, Dr. Patel.

However, not all these people are willing to work with each of the others. Dr. Barooah has refused to work with Dr. Mukharjee who in turn has refused to work with Dr. Oswal. Further Dr. Chatterjee has categorically stated that he would not go if Dr. Patel were to go.

- If Dr. Oswal is to be sent and Dr. Barooah is kept back, which four would be sent?
(a) Dr. Athavle, Dr. Chatterjee, Dr. Mukharjee and Dr. Oswal.
(b) Dr. Athavle, Dr. Chatterjee, Dr. Nanda and Dr. Oswal.
(c) Dr. Athavle, Dr. Chatterjee, Dr. Patel and Dr. Oswal.
(d) Dr. Chatterjee, Dr. Patel, Dr. Nanda and Dr. Oswal.

8. Which of the following statements is always true?
 i. If Dr. Mukharjee is sent, Dr Athavle is also sent
 ii. If Dr. Oswal is sent. Dr. Barooah is also sent
 iii. If Dr. Mukharjee is sent. Dr. Oswal is also sent
 (a) i only (b) ii only (c) i and ii (d) i, ii and iii
9. If Dr. Barooah and Dr. Oswal are selected then necessarily
 (a) Dr. Nanda and Dr. Athavle are selected
 (b) Dr. Athavle and either Dr. Nanda or Dr. Patel are selected
 (c) Dr. Chatterjee and Dr. Nanda are selected
 (d) Dr. Athavle and Dr. Patel is selected or Dr. Nanda and either Dr. Athavle or Dr. Chatterjee is selected.
10. Which of the following statements is false?
 i. Dr. Barooah and Dr. Chatterjee are never sent together.
 ii. Dr. Chatterjee and Dr. Oswal are never sent together.
 iii. Dr. Chatterjee and Dr. Nanda are never sent together.
 (a) i only (b) i and ii (c) i and iii (d) i, ii and iii
11. If Dr. Mukharjee is on the mission, which other scientists must be on the mission?
 (a) Dr. Athavle, Dr. Barooah and Dr. Nanda
 (b) Dr. Athavle, Dr. Chatterjee and Dr. Nanda
 (c) Dr. Patel, Dr. Chatterjee and Dr. Nanda
 (d) None of these.

•Three friends met in the street. Each was wearing a different coloured outer garment.

Names: Girish, Ram, Lokesh
Surname: Achrekar, Karmarkar, Wandrekar
Garment: Sweater, Jacket, Raincoat
Colours: Blue, Brown, Grey

- Neither Ram nor Wandrekar wear the grey sweater.
- Achrekar did not wear the raincoat.
- Lokesh was wearing the Jacket.
- The garment worn by Karmarkar was not brown.

12. Who wore the sweater?
 (a) Girish (b) Ram (c) Lokesh (d) Cannot be determined
13. Karmarkar was the surname of the person wearing
 (a) Sweater (b) Jacket (c) Raincoat (d) Cannot be determined
14. Lokesh's surname was
 (a) Achrekar (b) Karmarkar (c) Wandrekar (d) Cannot be determined
15. The Jacket was
 (a) grey (b) brown (c) blue (d) Cannot be determined

•Abra is Rambo's daughter. Shintu is Rambo's sister. Shintu's daughter is called Cabra and son is called Dabra. Limba is Cabra's maternal Aunt.

16. Abra is Limba's
 (a) aunt (b) nephew (c) niece (d) none of these
17. Rambo is Cabra's
 (a) nephew (b) niece (c) uncle (d) cannot say

18. Dabra is Limba's
(a) niece (b) aunt (c) cousin (d) none of these

•Choose the missing alphabet

19. Z, X, -, Q, L
(a) R (b) U (c) T (d) V

20. A, B, E, F, -, J, -, -, R, S
(a) G K L (b) I M N (c) I K L (d) I O P

PROGA

Exercise 2 (B)

- Five men went for a picnic with their sons to five different sea-side spots on different days of the week.

Men: Bikashbabu, Farookhmiya, Mohandas, Sundarappa, Santasingh

Sons: Mihir, Parag, Pulak, Sagar, Saurabh

Beach: Calangute Beach, Fisherman's Cove, Gulbarga, Mahe, Ratnagiri

Days: Monday, Tuesday, Wednesday, Thursday, Friday.

- Mohandas drove to Calangute beach two days after Sagar and his father had had their picnic.
- Saurabh sunbathed on the sands of Mahe . His father was not Bikashbabu.
- Santasingh went for his picnic on Tuesday. He did not visit Fisherman's cove.
- Ratnagiri was visited on Wednesday.
- Neither Mihir nor Sagar went for a picnic the day before Sundarappa took his son Pulak for an outing.
- Parag went for his picnic on Thursday .Mihir had gone for his outing before Parag.

1. Bikashbabu took his son to
(a) Fisherman's Cove (b) Gulbarga (c) Mahe (d) Ratnagiri
2. Which of the following had his picnic on Monday?
(a) Bikashbabu (b) Farookhmiya (c) Mohandas (d) Sundarappa
3. Fisherman's' Cove was visited on
(a) Monday (b) Tuesday (c) Thursday (d) Friday
4. Farookhmiya's son is
(a) Mihir (b) Parag (c) Sagar (d) Saurabh
5. Calangute beach was visited on
(a) Monday (b) Wednesday (c) Thursday (d) Friday.
6. Sagar went to
(a) Calangute Beach (b) Fisherman's Cove (c) Gulbarga (d) Ratnagiri
7. Which of the following had his picnic on Friday?
(a) Mihir (b) Pulak (c) Sagar (d) Saurabh
8. Ratnagiri was visited by
(a) Mihir (b) Parag (c) Pulak (d) Sagar
9. Parag's father is
(a) Bikashbabu (b) Farookhmiya (c) Mohandas (d) Santasingh
10. Saurabh visited the beach on
(a) Monday (b) Tuesday (c) Wednesday (d) Friday

Exercise 3(A)

•Four Roman ladies all received items of jewelry from their husbands for their birthdays. Unhappily, none of them liked her own gift and would have preferred one of the other three.

Gifts: bracelet; brooch; earrings, necklace.

Wives: Convivia; Nivia; Oblivia; Trivia.

- Trivia got what Nivia wanted, and wanted what Oblivia got; neither of these was the brooch.
- The wife who got earrings would have preferred the present given to Nivia.
- The wife who got the necklace would not have preferred the earrings.

1. The bracelet was received by
(a) Convivia (b) Nivia (c) Oblivia (d) Trivia.
2. The necklace was presented to
(a) Convivia (b) Nivia (c) Oblivia (d) Trivia.

•A grocer has to stock grains and dals. He has to buy equal quantities of any four from the following varieties such that he stocks at least 2 types grains.

Grains: Wheat, Maize, Rice.

Dals: Moong, Masur, Udad, Channa.

On analysis of budgetary constraints and demand, he has reached the conclusion that Maize and Moong dal cannot both be bought together, Rice and Udad dal cannot be bought together, and Udad dal and Channa Dal cannot be bought together.

3. If the grocer decides to stock Udad dal, which other items will he stock?
(a) Wheat, Maize, Moong
(b) Wheat, Maize, Masur
(c) Wheat, Maize, Channa
(d) Rice, Maize, Moong
4. If the grocer does not buy maize, yet he buys channa which is the possible combination of items he buys?
(a) wheat, moong, masur, channa
(b) wheat masur, udad, channa
(c) wheat, rice, moong, channa
(d) wheat, rice, udad, channa
5. Which of the following combination is not possible?
i. buying moong and udad together
ii. buying maize and rice together
iii. buying moong, masur and udad together
(a) i,ii,iii (b) i and ii (c) i and iii (d) iii only
6. Which of the following is necessarily false?
i. If rice is bought, channa is bought
ii. If maize is not bought, udad is bought
iii. If rice is bought, moong is bought
(a) i only (b) ii only (c) iii only (d) none of these.
7. Which of the following is necessarily true?
i. If rice is stocked, moong is stocked
ii. If udad is stocked, maize is stocked
iii. If rice is not stocked, moong not is stocked
(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

• Following are the positions of different cities with respect to each other

- Catelona is to the south of Frisbee, but to the west of Derby.
- Frisbee is to the south of Ewing which is east of Derby.
- Abulaki is south of Burdan which is west of Frisbee.
- Ewing is south of Abulaki which is west of Catelona.
- Derby is south of Frisbee which is west of Abulaki.

8. Which city is farthest to the north-west?
(a) Abulaki (b) Burdan (c) Catelona (d) Derby
9. Which of the following statements cannot be derived from the given information?
(a) Burdan is to the west of Abulaki.
(b) Derby is to the south of Abulaki.
(c) Abulaki is to the west of Ewing.
(d) Catelona is to the south of Derby.
10. Which of the following are north east of Frisbee?
i. Abulaki
ii. Ewing
iii. Catelona
(a) i only (b) ii only (c) i and iii (d) i and ii
11. Which of the following are situated to the south west of at least one other city?
(a) Abulaki, Frisbee and Derby
(b) Catelona, Derby and Frisbee
(c) Abulaki, Catelona and Frisbee
(d) Catelona, Derby and Ewing
12. Which of the following statements would make the information given in the numbered statements more specific?
(a) Catelona is to the north of Derby.
(b) Ewing is to the north of Derby.
(c) Abulaki is to the east of Burdan.
(d) Catelona is to the east of Frisbee.

• Five brothers have among them a pair of twins who are neither the oldest nor the youngest. Eknath is older than Chandrasen but younger than Brijmohan. Damodar is younger than three brothers.

13. The youngest is
(a) Abhishek (b) Brijmohan (c) Chandrasen (d) Damodar
14. One of the twin pair is
(a) Damodar (b) Brijmohan (c) Chandrasen (d) Eknath
15. The one who has as many elder brothers as younger brothers is
(a) Eknath (b) Brijmohan (c) Abhishek (d) None of the five.
16. The eldest son is
(a) Brijmohan (b) Chandrasen (c) Abhishek (d) Eknath

- Four anglers **Eir, Bir, Phatte and Mi** went fishing and caught four fish -- **20, 22, 26 & 30 feet** in length. At the end of the day, each of them claimed to have caught the longest of the four fish. Each of them further makes two more statements. Only one of the anglers tells the truth throughout his three statements, the others lie once and tell the truth once. Read the last two statements made by each angler (given below) and answer the questions that follow :

Eir: Bir didn't catch the smallest fish. Neither did Mi.
Bir: Phatte didn't catch the smallest fish. Mi did.
Phatte: Bir didn't catch the smallest fish. Eir caught the second largest.
Mi: Phatte caught the smallest fish. Eir the second smallest.

17. The 20 feet fish was caught by
 (a)Eir (b)Bir (c)Phatte (d) Mi
18. The 22 feet fish was caught by
 (a)Eir (b)Bir (c)Phatte (d) Mi
19. The 26 feet fish was caught by
 (a)Eir (b)Bir (c)Phatte (d) Mi
20. The 30 feet fish was caught by
 (a)Eir (b)Bir (c)Phatte (d) Mi

PROGTA

Exercise 3(B)

- The owner of Toofan, a promising three-year-old racehorse ,entered him for five races last season.

Course: Delhi, Bombay, Poona, Bangalore, Calcutta
Date: 2nd, 8th, 11th, 16th, 31st.
Month: May, June, July, August, September
Position: fourth, sixth, seventh, twelfth, thirteenth

- The nearest Toofan came to being placed in the first three was at Poona.
- One of the races took place on July 8th.
- Toofan finished sixth on the 16th of the month before the Bangalore meeting.
- The August meeting, at which Toofan did not come twelfth, was at Calcutta; the date of his race there was not the 31st.
- September was the month when Toofan finished last in a field of thirteen runners.
- The race at Bombay took place on the 2nd of the month, but not in June.

1. Toofan ran at the Poona course on the date
(a) 8th (b) 11th (c) 16th (d) 31st
2. The horse came in sixth at
(a) Delhi (b) Bombay (c) Bangalore (d) Calcutta
3. In July Toofan came in
(a) fourth (b) sixth (c) twelfth (d) seventh
4. The race at Calcutta was on the _____ day of the month.
(a) 16th (b) 11th (c) 8th (d) 2nd
5. When Toofan ran on the 2nd of the month, he came in
(a) fourth (b) seventh (c) twelfth (d) thirteenth
6. Toofan came in fourth in
(a) May (b) June (c) July (d) August
7. In June, Toofan ran on the _____ day of the month.
(a) 31st (b) 16th (c) 11th (d) 2nd
8. In September the horse ran at
(a) Delhi (b) Pune (c) Bombay (d) Bangalore
9. The venue of the race on the 8th day of the month was .
(a) Delhi (b) Pune (c) Calcutta (d) Bangalore
10. In Calcutta the horse came in
(a) thirteenth (b)twelfth (c) seventh (d) sixth

Exercise 4(A)

•Anna, Bhai, Nana Dada, Appa and Bal are brothers. They are having their morning cup of tea seated about a round dining table, equidistant from each other on adjacent chairs. Appa is seated next to Nana who is 3 seats away from Dada and Anna is seated two seats away from Bal.

1. Which of the following is necessarily true?
(a) Anna is sitting next to Dada
(b) Anna is sitting next to Bhai
(c) Anna is sitting next to Appa
(d) Anna is sitting opposite Nana.
2. If Bal does not want to sit with Bhai then
(a) Appa has to sit next to Bhai
(b) Bhai has to sit next to Anna
(c) Dada is next to Appa
(d) Dada and Appa are both next to Anna
3. Which of the following is true?
(a) Appa is to the right of Nana.
(b) Appa is to the left of Dada.
(c) Nana is to the left of Anna.
(d) None of the above.

•Ina, Mina, Dika and Chika each own a doll, a ball, a marble and a yo-yo, not necessarily in that order. Chika did not possess the yo-yo. Each is asked three questions

1. Do you own a ball?
2. Do you own either a marble or a yo-yo?
3. Do you own either a yo-yo or a doll?

Each answers atleast two questions truthfully. The answers are

Ina: Yes, Yes, No. **Mina:** Yes, No, Yes. **Dika:** No, Yes, Yes. **Chika:** No, No, Yes.

4. Ina's answer sequence was
(a) True, True, True (b) True, True, False (c) True, False, True (d) False, True, True
5. Mina's answers sequence was
(a) True, True, True (b) True, True, False (c) True, False, True (d) False, True, True
6. Dika's answers sequence was
(a) True, True, True (b) True, True, False (c) True, False, True (d) False, True, True
7. Chika's answers sequence was
(a) True, True, True (b) True, True, False (c) True, False, True (d) False, True, True

•Captain Kirk of Starship Enterprise, in the year 3105 A.D. wishes to send a team of five comprising of scientists and commandos to land on the planet Omron which is inhabited by the reptilian race Cranosaura. Atleast three scientist must be sent to study the planet's geological, anthropological and botanical aspects. The persons found suitable are as follows:

Scientists: Paul Abby, Lila Becket, Simon Crockett, Desmond McLog.

Commandos: Hafiz Eli, Mohan Fakir, John Gunther, Peter Hope.

But Abby refuses to work with McLog. Becket and Eli have refused to work with each other. Fakir and Gunther should not be put together on any mission. McLog has refused to work with Fakir.

8. Meeting all preferences, if Hope is chosen which of the following must be true?
 i. Gunther is chosen
 ii. Abby is chosen
 iii. Becket is chosen
 (a) i only (b) iii only (c) i and ii only (d) i, ii and iii
9. Meeting all preferences, if Becket and Crockett are chosen which of the following is true?
 i. Abby is chosen
 ii. McLog is chosen
 iii. Either Fakir or Gunther is chosen
 (a) i and ii (b) ii only (c) ii and iii (d) iii only
10. Meeting all preferences, if Becket is chosen who else would have to be in the team?
 (a) Fakir (b) Crockett (c) Gunther (d) McLog
11. Meeting all preferences, if Gunther is not selected, who else is necessarily not selected?
 (a) Abby (b) Fakir (c) McLog (d) Eli

• A man houses three cats and three dogs in a row of 9 kennels, one assigned to each. The rows are numbered as follows

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

Cats: Pekingese ,Siamese , Cheshire

Dogs: Doberman, Alsatian Poodle.

- i. The Siamese cat, the Doberman and the Poodle are not housed at the end of the row.
 ii. The Pekingnese cat and the Siamese cat are not housed next to any other pet.
 iii. The Cheshire cat is next to the Alsatian and the Poodle.
 iv. There is only one vacant kennel between the Siamese cat and the poodle.
 v. None of the cats are housed next to each other.
 vi. The Doberman is housed next to a kennel at the end of the row.
12. Which of the statement given above can be derived from the others?
 (a) ii (b) iii (c) iv (d) v
13. How many of the animals are housed next to a vacant kennel?
 (a) 2 (b) 3 (c) 4 (d) 5
14. If the Doberman is housed in kennel number 8, the Siamese cat is in kennel number
 (a) 5 (b) 4 (c) 3 (d) 2
15. If the Doberman is housed in kennel number 2, the Cheshire cat is in kennel number
 (a) 5 (b) 4 (c) 3 (d) 2

• Ergo, Balraj and Pahlavi, three car racers raced their cars, named Empress, Maharani and Shahzadi on three circuits in the country. The dates and months of these races are given below :

Dates : sixth, fourteenth and twenty-fifth. **Month :** February, August and October.

On the basis of the given clues, answer the questions that follow:

- i. Empress and Pahlavi are not a car-driver pair and neither of them raced on the twenty-fifth of February.
 ii. None of the car-driver pairs shared initials.
 iii. Balraj was not the last to race, neither was the car Shahzadi.
 iv. Empress's race was on the sixth.
16. The car Empress raced on...
 (a) sixth August (b) sixth February
 (c) fourteenth February (d) fourteenth August

17. The August race saw the following pair:
(a) Balraj, Shahzadi (b) Empress, Pahlavi (c) Empress, Balraj (d) Shahzadi, Ergo
18. Ergo's car-race combination was...
(a) Shahzadi, October
(b) Shahzadi, February
(c) Maharani, August
(d) Maharani, October
19. October saw the following driver-date combination:
(a) Pahlavi-fourteenth (b) Balraj- sixth (c) Ergo- sixth (d) Balraj- fourteenth
20. The twentyfifth day of the month saw which of the following combinations racing?
(a) Ergo, Maharani (b) Balraj, Empress (c) Ergo, Shahzadi (d) Balraj, Shahzadi

PROGGA

Exercise 4(B)

•Five young mothers are each blessed with an 'enfant terrible'. You have to match mothers and infants, describe each child's latest misdeed, and say what punishment was meted out.

Mothers: Chameli, Janhavi, Ratna, Sukannya, Sandhya

Children: **Boys:** Badal, Nitin, Tarun **Girls:** Juhi, Malika

Misdeed: Bit head off toy, Pulled cat's tail, Threw flour, muddied the floor, Tried to eat teddy-bear.

Punishment: Had biscuits rationed, Had bottom smacked, Was sent to bed, Was shouted at, Was warned would grow fur.

- The child who tried to eat the teddy bear was warned that she would grow fur if she did it again; the mother who issued the warning was not Ratna.
- It was naughty Nitin who pulled the cats' tail; he is not Janhavi's little monster, whose favourite biscuits were temporarily withdrawn.
- Sukannya is not Juhi's mum
- The child who bit the head off a toy was not sent to bed as a punishment
- Sandhya's little charmer threw flour all over the kitchen floor.
- Badal had his bottom smacked for his misdemeanor.
- Chameli's son is Tarun; he was not the child who trampled all over the floor in muddy boots.

1. Juhi's mother is
(a) Janhavi (b) Chameli (c) Ratna (d) Sukannya
2. Badal bottom was smacked by
(a) Sukannya (b) Chameli (c) Ratna (d) Sandhya
3. Tarun's punishment was
(a) being warned would grow fur (b) being shouted at
(c) biscuits rationed (d) being sent to bed
4. The mother who threatened her child that she would grow fur was
(a) Janhavi (b) Sukannya (c) Ratna (d) Sandhya
5. Sandhya's child was
(a) Malika (b) Juhi (c) Badal (d) Nitin
6. Who bit the head of the toy?
(a) Juhi (b) Nitin (c) Tarun (d) Malika
7. Whose child trampled all over the floor in muddy boots?
(a) Janhavi (b) Ratna (c) Sukannya (d) Sandhya
8. The child whose biscuits were rationed
(a) Bit head off toy (b) Pulled cat's tail (c) Threw flour (d) muddied the floor
9. The child threw flour was punished by
(a) having his bottom smacked (b) being shouted at
(c) biscuits rationed (d) being sent to bed
10. Ratna's child
(a) Bit head off toy (b) Pulled cat's tail
(c) Tried to eat the teddy bear (d) Muddied the floor

9. If the Physics book was on the fourth shelf and the biology book was on a shelf lower than the Physics book, which shelf is vacant?
 (a) Shelf 1 (b) Shelf 2 (c) Shelf 3 (d) Shelf 6
10. If the biology book was on the sixth shelf which shelf would the Algebra book be?
 (a) 2 or 4 (b) 2 or 3 (c) 1 or 3 (d) 3 or 4

• Seating arrangements at the corporate board room have to be finalised for a very important meeting. The following considerations have to be taken care of

- i. The General Managers will sit on one side of the rectangular table.
- ii. The Directors will sit on the side opposite to the General Managers.
- iii. The General Managers (G.Ms.) will have their overall chief in the centre and the Directors (Dirs) have the Managing Director (M.D.) at the centre.
- iv. The Dir (Finance) wishes to sit farthest from the Dir (Personnel).
- v. The G.M. (Sales) wants to sit to the extreme right of the chief G.M.
- vi. The G.M. (Accounts) is not the chief General Manager.
- vii. The Dir (Operations) wants to sit opposite the G.M. (Production)
- viii. The Dir (Marketing) sits to the immediate right of the M.D. while Dir (Operations) sits to the immediate left.
- ix. The G.M. (Production) and the G.M. (Personnel) have the G.M. (Planning) between them.
- x. The G.M. (Accounts) wants to sit diagonally opposite the Dir (Personnel).

11. Which general manager is the over all chief general manager?
 (a) G.M. (Production) (b) G.M. (Personnel) (c) G.M. (Accounts) (d) G.M. (Planning)
12. The G.M. (sales) sits opposite the
 (a) Dir (Finance) (b) Dir (Personnel) (c) Dir (Marketing) (d) M.D.
13. The G.M. (Production) is to the
 (a) right of the M.D.
 (b) left of the M.D.
 (c) left of the G.M. (Accounts)
 (d) None of these.
14. Which of the statements given above can be derived from the others and need not be specified?
 (a) Statement v (b) Statement x (c) Statement vi (d) Statement viii

• We go to the times of Mahabharata and see the types of weddings that took place. In one type of wedding several brothers married a single woman. We know of this type very well. A second type of wedding was several sisters marrying a single man. All members of a single married group were regarded as the parents of any children of the marriage. Marriage between male and female children of the same parents was not allowed.

V is the son of Z.
 T is the daughter of X.
 U is the daughter of Y.
 V, U, M and N have a daughter, S.
 V and U have the same paternal grandmother, Q.
 Z and X are the only grandfathers of S; Y, J, K and L are the only grandmothers of S.
 No one has married more than once and all the children are legitimate.

15. T is the sister of
 (a) N only (b) M only (c) V (d) U
16. N is the sibling of
 i. M only ii. M and V iii. M and U
 (a) i only (b) ii only (c) iii only (d) ii or iii, not both

17. One of Q's children may be
(a) Z (b) Y (c) J (d) K
18. Which of the following is an offspring of the second kind of marriage?
(a) S (b) V (c) Z (d) X
19. If V, U, M, and N had not married, which would be a necessarily permissible marriage?
(a) V marries T and U
(b) T marries V only
(c) N and M marry V
(d) N and M marry T and U
20. X is
(a) U's mother (b) T's mother (c) U's father (d) V's father

PROGGA

Exercise 5(B)

•Five husbands and wives each have an item which gives them a special feeling of pleasure and pride. The wives' items are all inside the house and the husbands' items in the garden. From the clues given below, can you sort out the full details?

Husband: Fakirchand, Jaikishen, Pralhaddas, Tarachand, Wamanrao
Wife: Ahilya, Janaki, Seeta, Swati, Wanawati
Husband' pride: Goldfish pond, Green house, Lawn, Rockery, Rose-bush
Wife's pride: Antique vase, Grandfather clock, lamp, painting, Persian carpet.

- The lady with the Persian carpet, who is not Seeta, is married to the man who is very proud of his prize rose bush.
- Ahilya is very proud of her grandfather clock, which has been in her family for several generations; her husband is neither Tarachand nor the man with the immaculate lawn.
- Fakirchand's wife has an oil painting of which she is inordinately fond.
- Pralhaddas is the husband with the greenhouse; his wife, who has a name which does not end with the letter A, does not own the antique vase.
- Janaki's husband spends many hours working on his rockery.
- Wamanrao and Swati are one of the happy couples.

1. The persian carpet is owned by
(a) Swati (b) Ahilya (c) Wanawati (d) Janaki
2. Ahilya's husband is
(a) Fakirchand (b) Jaikishen (c) Pralhaddas (d) Wamanrao
3. Who owns the rockery
(a) Fakirchand (b) Jaikishen (c) Tarachand (d) Pralhaddas
4. Wanawati's husband owns the
(a) Goldfish pond (b) Lawn (c) Green house (d) Rose-bush
5. The husband whose wife owns the antique vase is
(a) Fakirchand (b) Jaikishen (c) Tarachand (d) Pralhaddas
6. Seeta is fond of her
(a) Oil painting (b) lamp (c) Antique vase (d) Persian carpet
7. Pralhaddas' wife owns the
(a) Antique vase (b) Lamp (c) Oil painting (d) Persian carpet
8. The wife of the rosebush owner is
(a) Ahilyabai (b) Seeta (c) Swati (d) Wanavati
9. The rockery belongs to the same family who own the
(a) Antique vase (b) Grand Clock (c) Lamp (d) Painting
10. The wife of the goldfish owner loves her
(a) Antique vase (b) Grand Clock (c) Lamp (d) Painting

Exercise 6(A)

•A company involved in the manufacture of toiletries wants to introduce 5 products in the market, Alfa, Benzer, Camay, Diamond and Ebony. Alfa and Benzer having aftershave and talcum powder respectively, are targeted at men and must be launched together. Product launch dates are the 1st of every month. In order to optimise cost it is essential to launch three products at a time. The distribution net-work, however, will not be able to handle load of three products at a time, so only one of the three will have to be launched in two phases, one in the north of India and one in the south. Camay, the soap will have to be launched in one phase across the country.

1. If on July 1, Alfa, Benzer and Diamond are introduced which combination of products will be introduced on August 1.
(a) Benzer, Camay, Ebony.
(b) Camay, Diamond, Ebony.
(c) Alfa, Diamond, Ebony.
(d) Camay, Alfa, Ebony.
2. Which of the following is the sequence of launches possible?
(a) Alfa, Benzer, Diamond and Camay, Diamond, Ebony.
(b) Alfa, Benzer, Camay and Benzer, Diamond, Ebony.
(c) Alfa, Benzer, Camay and Alfa, Diamond, Ebony.
(d) Alfa, Benzer, Camay and Diamond, Ebony.
3. If Alfa, Benzer and Ebony are launched first, which product are launched next?
(a) Alfa, Camay, Diamond
(b) Benzer, Camay, Diamond
(c) Camay, Diamond, Ebony
(d) Camay, Diamond.
4. Which of the following statements is true
i. After the second launch, all products have been launched at least once.
ii. At least one product is launched twice.
iii. If a third launch completes the introduction of the products, all products have been launched at least twice.
(a) i and iii (b) ii and iii (c) i and ii (d) i,ii and iii

•The 'Seminar on Current Affairs' conducted by Career Forum had 50 entries of which 7 entries were awarded merit positions from 1-7. They were presented by 7 speakers.

Speakers: Jagat, Devika, Srikant, Karan, Vivek, Priya and Aparna.

Topics: Liberalisation, Intellectual Property Rights, European Community, Electoral reforms, Convertibility, Stock Market, and Financial Services.

- The third position was bagged by the entry 'European Community'.
- Karan, who did not present the topic 'Stock Market', earned a position immediately below the speaker who was immediately below Vivek in ranking
- Jagat presented the topic 'Electoral Reforms'.
- 'Liberalisation' Ranked sixth.
- 'Intellectual Property Rights' ranked immediately above 'Stock Markets'.
- Aparna was ranked immediately after Priya and immediately before Devika.
- Vivek, who presented 'Financial Services', ranked fifth.

5. Who stood first?
(a) Aparna (b) Srikant (c) Jagat (d) Priya
6. The position before Karan's was bagged by
(a) European community (b) Electoral Reforms
(c) Liberalisation (d) Stock Market

7. Which of the following statements is true?
 (a) Srikant presented 'Liberalisation'.
 (b) Devika presented 'Convertibility'.
 (c) Aparna presented 'European Community'.
 (d) Devika presented 'Financial Services'.
8. If, before taking part in the competition, had Aparna dropped out of the competition and Omkar entered the competition, and Omkar ranked immediately after Srikant, the sixth rank would have gone to
 (a) Devika (b) Karan (c) Omkar (d) Jagat
9. In addition to the above change if the ranks obtained by the 'European community' presentation and the 'Convertibility' presentation are interchanged which of the following statements is true?
 (a) Devika will be the only candidate to rank after Srikant.
 (b) There will be equal number ranks above and below Jagat.
 (c) Only one contestant will rank after Vivek and before Devika.
 (d) Karan will rank after Priya and before Jagat.

• If one were to visit the Ellora caves, one is bound to visit the Aiholi temple clusters which are the confluence of sculpture cultures of the northern and southern parts of ancient India. The northern temples marked by their flat roofs and the southern by their round domes. The amazing part is that there are nine temples in a row, starting from the left with a domed temple, with northern and southern temples alternating with each other. Each temple is dedicated to a single deity and no deity is repeated in this row of nine.

- The Shivaling is seven temples before the Vishnupratishthan.
- The third domed temple is the Ganeshmandir.
- The second northern temple after the Ganesh temple is 'Shaktisthan'.
- The fourth temple in the row is the 'KrishnaMandir'.
- The 'Rammandir' is a southern temple.
- The 'Bramadarshan' is between the Ganeshmandir and Shivlinga.

10. Which of the following is a sequence from right to left?
 (a) Brhamadarshan, Krishnamandir, Rammandir, Vishnupratishthan.
 (b) Shaktisthan, Vishnupratishthan, Brahmadarshan, Shivlinga.
 (c) Ganeshmandir, Shaktisthan, Krishnamandir, Brahmadarshan.
 (d) Vishnupratishthan, Ganesh mandir, Krishnamandir, Shivlinga.
11. Which of the following may be said about 'Brahmadarshan'?
 (a) It is a northern temple
 (b) It is two temples away the Rammandir.
 (c) It is next to the Krishnamandir.
 (d) It is three temples away from the Shaktisthan.
12. If the Marutimandir is one of the nine, then among statements following statement that is false is
 (a) It is one left of the Shivlinga.
 (b) It is one right of the Ganeshmandir
 (c) It is one left of the Shakti Sthan.
 (d) It is one left of the Ganeshmandir
13. How many temples can be definitely positioned the sequence of nine?
 (a) 5 (b) 6 (c) 7 (d) 8

- Three brothers **Tiger, Yakoob and Mushtaq Memon each** bought a race-horse of different stock from different places. Can you associate each horse's name along with its owner, stock and land where it was bought?

Horse's names : Bad News, White Lightning, Thundering Typhoon.
Stock : Arabic, Siberian, Nordic.
Bought at : Timbuctoo, Zululand, Jhumritalaiya

- Yakoob's horse was of Siberian stock. It was not named White Lightning who was not bought at Zululand
 - Only one horse shared its initial with the place where it was bought .This horse was neither of Siberian stock nor of Arabic stock.
 - No horse shared its initials with the owners.
- White lightening was bought at
 (a) Jhumritalaiya (b) Zululand (c) Timbuctoo (d) indeterminable
 - Mushtaq is the proud owner of a
 (a) Siberian horse (b) Arabic horse (c) Nordic horse (d) indeterminable
 - The horse bought at Zululand is
 (a)Bad News (b)Thundering Typhoon (c) White Lightning (d) indeterminable
 - The Arabic horse belongs to
 (a)Mushtaq (b)Tiger (c)Yakoob (d) indeterminable
 - Thundering Typhoon was bought at
 (a) Jhumritalaiya (b) Zululand (c) Timbuctoo (d) indeterminable
- In a certain code for WATER = XPWKD and TRAIL = WDPYG
- What is the code for WHERE?
 (a) XDPWE (b) XAQVK (c) XAKDK (d) QPWKY
- Three boys Rajan, Ramesh and Raghav who are athlete, football player and cricketeer not necessarily in that order, are sitting at a round table. The football player is sitting to the left of Ramesh. Rajan is to the left of the cricketeer.
- Who is the athlete?
 (a) Rajan (b) Raghav (c) Ramesh (d) indeterminable

Exercise 6(B)

•A rose grower launched five new varieties for the coming season, listing them in his catalogue by type, name, colour and fragrance. He coded their fragrances in descending order from A to E, with A being the most fragrant. From the information given below, can you give all the details of each rose?

Name: Debutante, Diva, Lamia, Serene, Soft silk.

Type: Climber, Floribunda, Hybrid tea, Miniature, Shrub.

Colour: Apricot, Deep pink, Pale pink, White, Yellow.

Fragrance: A, B, C, D, E.

- Debutante is more fragrant than either the hybrid tea or the apricot rose, but it is less fragrant than Diva.
- Neither of the pink roses is top or bottom of the fragrant scale, but the deep pink is more fragrant than the pale pink; the name of the deep pink has the same initial letter as has the name of the shrub rose, while the name of the pale pink has the same initial letter as has the name of the floribunda.
- Soft Silk is neither the miniature nor the rose with fragrance C, and it is not pink; it is less fragrant than the climber but more so than Lamia.
- The yellow rose, which is not the shrub, is one point in the fragrance scale above the miniature and one below, Serene.

1. The shrub is
(a) Debutante (b) Lamia (c) Serene (d) Diva
2. Serene is the name associated with the colour
(a) deep pink (b) white (c) pale pink (d) yellow
3. Lamia is a
(a) Climber (b) Shrub (c) Hybrid tea (d) Miniature
4. Colour of Debutante is
(a) deep pink (b) white (c) pale pink (d) yellow
5. The Floribunda variety's name is
(a) Diva (b) Lamia (c) Serene (d) Soft silk
6. Fragrance 'C' is associate with
(a) Climber (b) Shrub (c) Hybrid tea (d) Miniature
7. White colour is associated with
(a) Soft silk (b) Serene (c) Lamia (d) Diva
8. The Miniature is
(a) Apricot (b) Deep Pink (c) Pale Pink (d) Yellow
9. Serene is of the type
(a) Cilmber (b) Hybrid tea (c) Miniature (d) Shrub
10. The strongest fragrance has the colour
(a) Apricot (b) Deep pink (c) Pale pink (d) White

Exercise 7(A)

• Twelve management trainees have been assigned to six departments numbered 1 to 6 in either line or staff functions. Not more than two trainees can be assigned to either function in any given department.

- Lavina and another trainee have been assigned to the same function in the same department which is, in numerical order of departments, two departments following the departmental code of Abhay and Chetan, who have been assigned to the same department in the line function.
- Geeta has been assigned a department preceding in its code to the departmental code of Abhay and Chetan.
- Jayant is the only person assigned to his department. His departmental code is three numbers preceding the departmental code of Inder and one preceding the departmental code of Egbert.
- Dilip's departmental code is three numbers preceding the code of Bipin and Farookh. Bipin is the only one assigned to the staff function and Farookh is the only one assigned to the line function of this department.
- Himesh is the only one assigned to the staff function and Kiran is the only one assigned to the line function in the same department. Their departmental code precedes the departmental code of Geeta.
- Inder has been assigned the line function.

1. Which of the following pairs has been assigned the same department?
(a) Dilip and Egbert (b) Jayant and Geeta (c) Abhay and Lavina (d) Dilip and Geeta
2. Line function has definitely been assigned to
(a) Egbert (b) Geeta (c) Lavina (d) Jayant
3. Egbert's departmental code is
(a) 1 (b) 2 (c) 3 (d) 4
4. Lavina's function and department is shared by
(a) Dilip (b) Inder (c) Bipin (d) Kiran
5. Which of the statements given below and necessarily true?
(a) Geeta has been assigned to the staff function.
(b) Dilip has been assigned to the line function.
(c) Egbert has been assigned the staff function.
(d) Jayant has been assigned the line function.
6. Kiran's departmental code is
(a) First code (b) Second code is following Jayant's.
(c) Third code is following Egbert's (d) Same as Lavina's
7. Which department definitely does not have a trainee assigned to the staff function?
(a) Department 3 (b) Department 4 (c) Department 6 (d) None of these
8. Which department definitely does not have a trainee assigned to the line function?
(a) Department 3 (b) Department 4 (c) Department 6 (d) None of these
9. If the department 4 has only one trainee assigned to each function, how many vacancies remain unfilled in each function in the department?
(a) 1,1 (b) 2,1 (c) 2,2 (d) None of these
10. If Jayant is moved to Department 6 he will fill a vacancy
(a) in the line function (b) in the staff function
(c) in a line or staff function (d) a fifth vacancy will have to be created.

• Six workers are to work in shifts, two at a time, no person being repeated on a given day. Each must be paired with each of the other workers first.

- No worker can be paired with another more than once till combinations as per condition 1 are exhausted.
- Janak is paired with Manu for the first day and with Omkar for the second.
- Kumar is paired with Nandu for the first day and Laxman for the third day.
- Laxman is paired with Omkar for the first day.

11. What is the number of shifts per day?
 (a) 6 (b) 4 (c) 3 (d) 2
12. Which of the following represents the pairs on the third day?
 (a) Omkar and Kumar, Janak and Nandu, Manu and Laxman.
 (b) Janak and Kumar, Laxman and Omkar, Manu and Nandu.
 (c) Manu and Omkar, Kumar and Nandu, Janak and Laxman.
 (d) Janak and Nandu, Omkar and Manu, Laxman and Kumar.
13. Which person must Kumar pair up with for the second day?
 (a) Laxman (b) Manu (c) Nandu (d) Omkar
14. A given rotation of pairs is of how many days?
 (a) 5 (b) 6 (c) 12 (d) 15

• There are four pegs -- **round, square, triangle and hexagonal**. Their colours are **red, green, blue and yellow** -- not necessarily in that order. Four boys -- **Yash, Gundappa, Bunty and Rambo** -- own one of these peg each and none of them owns the peg whose colour initial matches the initial of their name. They make the following statements which may be true or false. You know that Bunty never lies. Answer the questions that follow.

Yash: It's red round, green square, yellow triangle and blue hexagon.

Gundappa: It's yellow round, blue square, green triangle and red hexagon.

Rambo : Both Yash and Gundappa are totally wrong. I own the square.

Bunty: Rambo is correct. I own the triangle.

15. Yash owns
 (a) red square (b) green hexagon (c) yellow circle (d) blue triangle
16. Gundappa owns
 (a) green square (b) red hexagon (c) blue circle (d) yellow triangle
17. Rambo owns
 (a) yellow square (b) blue hexagon (c) red circle (d) green triangle
18. Bunty owns
 (a) blue square (b) yellow hexagon (c) green circle (d) red triangle

• Detective Herlock Shines found Rox lying dead at the bottom of the cliff. He is trying to resolve the case -- is it **murder or suicide**? If Rox was murdered then detective Shines is sure one of **Ajit, Robert, Peter and Michael** murdered him, and one among them was the murderer's accomplice.. He questions the subjects -- who have the strange habit of either only lying or speaking the whole truth only -- and solves the case. Read the statements of each of the suspects and solve the questions that follow.

Ajit: Michael killed him. Peter was his accomplice.

Robert: Ajit killed him. Michael was his accomplice.

Peter: Robert neither killed him nor helped in killing him. I neither killed him nor helped in killing him.

Michael: Robert is lying. I was with Peter all through the time in question.

19. Who killed Rox?
 (a) Ajit (b) Robert (c) Peter (d) Michael
20. Who was the accomplice?
 (a) Ajit (b) Robert (c) Peter (d) Michael

Exercise 7(B)

•Floods struck and several villages were each cut off for a number of days during which each ran short of a different commodity. Finally, on the same day, but at various times, the sieges were lifted by different rescue vehicles carrying a load of the commodity in short supply.

Village: Padlapur, Chahal, Fatehpur, Mirpur, Sankholi.

Commodity: Rice, Coal, Milk, Wheat, Vegetables.

Relief vehicle: Aeroplane, Helicopter, Raft, Sailboat, tow-boat.

Rescue Time: 10.00 am, 11.00 am, 12.00 noon, 1.00 pm, 2.00 pm

- Fatehpur's small air-strip was clear of flood waters and was reached by the Aeroplane.
- The raft brought welcome supplies of fresh vegetables to the grateful villagers.
- Sankholi was relieved just two hours later than the village which had run short of wheat.
- Padlapur was the last village to be reached from the outside world.
- Chahal was running out of milk; it was not relieved by the arrival of a sailboat.
- The helicopter landed on some dry ground just as twelve was striking on the clock.
- The coal was delivered at eleven o'clock, but not to Mirpur.

1. Fatehpur was in short supply of
(a) milk (b) coal (c) rice (d) vegetables
2. The raft reached at
(a) 11.00 a.m. (b) 12 noon (c) 1.00 p.m. (d) 2 p.m.
3. Chahal was reached by the
(a) tow-boat (b) raft (c) aeroplane (d) helicopter
4. Wheat were delivered at
(a) Chahal (b) Padlapur (c) Mirpur (d) Sankholi.
5. The helicopter went to relieve the village
(a) Chahal (b) Padlapur (c) Mirpur (d) Sankholi.
6. The vegetables reached by
(a) 10 (b) 12 (c) 1 (d) 2
7. Wheat was brought by the
(a) Aeroplane (b) Helicopter (c) Sailboat (d) Tow boat
8. The towboat reached by
(a) 10 (b) 11 (c) 1 (d) 2
9. At 12 the village to receive aid was
(a) Chahal (b) Fatehpur (c) Mirpur (d) Sankholi
10. The Aeroplane reached at
(a) 10 (b) 11 (c) 1 (d) 2

Exercise 8(A)

•While formulating a college debating team the following points have to be noted.

- There must be one lead speaker.
- Two speaker are required to present pre designed stand on the proposition.
- Two speakers are required to counter argue the appositions points.
- The 5 member team must be made out of the short list of students of A,B,C,D,E,F,G and H.
- The lead debater can be one out of C,D and E.
- The two people who will present the stand can be two out of A, B and C.
- The counter arguments will be made by two people, possible students for this role are F,G and H.
- A and C like to perform with each other.
- E prefers to participate with F.

1. Which combination is not possible if all preferences are to be met?
(a) C as lead speaker, A and B as presenters on the stand.
(b) B and C as presenters on the stand.
(c) Either D or E as lead speakers and F and H for counter argument.
(d) G and H for counter argument.
2. If A and B are to present the stand
i. C will be the lead speaker.
ii. F will counter argue.
iii. F or H may counter argue.
(a) i and ii only (b) ii and iii only (c) i and iii (d) all the above
3. If all preferences are met which student has the least option of combinations of students?
(a) B (b) D (c) E (d) F
4. How many teams are possible if all preferences are met?
(a) 8 (b) 9 (c) 12 (d) 15
5. If no preferences are to be allowed what is the number of possible combinations to work with
(a) 8 (b) 12 (c) 15 (d) 18
6. If A and E are chosen, the other members of the most preferred team will be
(a) B,F,G (b) C,F,G (c) B,F,H (d) C,G,H
7. If all preferences are met which combination of two presenters on the stand with a counter arguer gives maximum flexibility in choosing teams.
(a) A,B with F (b) A,B with G or H (c) A,C with G (d) A,C with F

•The Starship Enterprise has its executive officers quarters in a row. Among the top 7 officers, the captains quarters are in the centre. Closest to the captain are officers ranking closest to him such that the officer to the right always out ranks the officer to the left.

Officers : James Kirk, Haka Sulu, Samuel McLog, Peter Scott, Leslie Desarne, Ivan Ivanovich, Rama Shetty.

Ivanovich is four quarters to the left of French man who is two quarters to the right of Mclog. Rama Shetty is two quarters to the left of Peter Scott.. The Japanese and the American are next to each other. Sulu's neighbours are Kirk and the Frenchman. The Russian, the Indian and the Briton have quarters together in a row from left to right.

8. The Briton is
(a) James Kirk (b) Samuel Mclog (c) Peter Scott (d) Leslie Desarne
9. The firth person in ranking is
(a) The Indian (b) The Russian (c) The Swiss (d) The Frenchman

10. The American
 i. out ranks the Japanese
 ii. is out ranked by the Indian
 (a) i only (b) ii only (c) i or ii but not both (d) neither i nor ii.
11. How many officers out rank the Russian?
 (a) 3 (b) 4 (c) 5 (d) 6
12. If due to some reason the Frenchman's and the Russian's ranks are interchanged which of the following is true?
 (a) Kirk will be moved six quarter away from his original quarters.
 (b) Desarne will move his quarter three quarters away from his original quarter
 (c) Shetty will move four ranks up
 (d) Desarne will move from the captain's left to the captain's right.
13. If Desarne is demoted two ranks which of the following is true?
 (a) The American moves up one rank.
 (b) Mclog occupies the second rank.
 (c) The Indian moves up two ranks.
 (d) The ranks of five persons remains unchanged.
- A,B,C & D are all related to each other. A is the daughter of B. B is the son of C and C is the father of D.
14. Which of the following statements is true?
 (a) B and D are brothers.
 (b) A is D's daughter.
 (c) If E is B's daughter, she is A's sister.
 (d) If F is C's granddaughter, she is A's sister.
15. Which of the following statements is necessarily false?
 (a) D is A's aunt (b) D is A's uncle
 (c) A is D's niece (d) A is D's father son's granddaughter
- Three dacoits, **Phoolan, Gabbar and Malkhan** each has been terrorising three different men, **Deb, Singh and Yadav**, not necessarily in that order. Each of these men is a citizen of three different areas **Chambal, Gir and the Kumaon** not necessarily in that order. Each of the dacoit favours a different mode of transport, **horses, jeeps and boats**, again not necessarily in that order.
- i. Gabbar and his horsemen do not terrorise Yadav.
 ii. Malkhan is not the water borne Gir bandit.
 iii. Neither Yadav nor Singh has anything to do with the Kumaon region which has been terrorised by dacoits in jeeps.
16. Malkhan's mode of transport is
 (a) horses (b) jeeps (c) boats (d) indeterminable.
17. Yadav has been terrorised by
 (a) Phoolan (b) Gabbar (c) Malkhan (d) indeterminable.
18. The bandit on horseback is the terror of
 (a)Gir (b) Kumaon (c) Chambal (d) indeterminable.
19. Malkhan has been terrorising
 (a) Yadav (b) Deb (c) Singh. (d) indeterminable.
20. The Gir has been terrorised by
 (a) Phoolan (b) Gabbar (c) Malkhan (d) indeterminable.

Exercise 8(B)

•Five youngsters, two girls and three boys went on a school outing to the countryside. From the clues given below, can you identify each child, say what befell him or her during the coach journey, and discover the incident each was involved in during the cross-country walk?

First Name: Brijesh, Chhaya, Jaya, Nilesh, Rajesh.

Surname: Angre, Dongre, Firangi, Handa, Pandit.

Coach event: Answered call of nature, Fell asleep, Felt sick, Hurt finger, Threw wellies.

Country event: Bitten by ants, Got blisters, Fell in nettles, Sat on thistle, Stepped in something.

- The lad who threw his friend's wellies out of the coach window on the outward journey got his just deserts when he stepped into something unpleasant whilst crossing a cow pasture; his surname is not Dongre.
- The youngster named Firangi inadvertently sat on a thistle whilst tying up a loose bootlace; this was not Jaya.
- Brijesh fell asleep on the coach, which greatly amused his fellow travellers.
- It was not Chhaya Pandit who hurt a finger whilst opening a bottle of Thums-up, nor did she suffer blisters through walking in ill-fitting boots.
- It was the pupil called Handa who had to stop the coach in order to answer a call of nature.
- It was Nilesh who was bitten by ants when the expedition stopped for a picnic lunch; his surname is further down the alphabet than Jaya's.

1. Dongre was the surname of
(a) Brijesh (b) Chhaya (c) Jaya (d) Nilesh,
2. Nilesh
(a) answered call of nature (b) Fell asleep
(c) Felt sick (d) Threw wellies
3. The surname of the person who threw wellies was
(a) Firangi (b) Pandit (c) Handa (d) Angre
4. Rajesh's surname was
(a) Firangi (b) Pandit (c) Handa (d) Angre
5. Chhaya
(a) Sat on a thistle (b) Fell in nettles
(c) Got blisters (d) Stepped into something
6. The person who hurt the finger got
(a) Bitten by ants (b) Got Blisters (c) Stuck in nettles (d) Stuck in thistles
7. The person who answered nature's call got
(a) Bitten by ants (b) Got Blisters (c) Stuck in nettles (d) Stuck in thistles
8. The person whose finger was hurt is
(a) Angre (b) Dongre (c) Firangi (d) Handa
9. Rajesh
(a) Got Blisters (b) Fell in nettles
(c) Sat on Thistles (d) Stepped on something
10. Chaya
(a) Wellies + ants (b) Sick + Nettles
(c) Sick + Thistles (d) Nature's call+ ants

Exercise 9(A)

•Career Forum, an institute involved in training students for competitive exams runs six batches P1, P2, P3, P4, P5, P6 each of which is scheduled at least once a week.

- Sunday is a holiday.
- The P2 batches meet all days except Friday and Saturday.
- The P3 batch meets 4 days in succession.
- The P6 batch meets only from Monday to Thursday.
- The P5 batch is scheduled every day, but not on Thursday and Saturday.
- On alternate days, the P1 batch is scheduled.
- The P1 and P4 batches never meet on the same days.
- The P3 batch does not meet on Mondays and Tuesdays
- The P4 batch is scheduled only once a week on either Wednesday or Friday.

1. What is the maximum number of batches possible on one day?
(a) 2 (b) 3 (c) 4 (d) 5
2. Which batches meet for the same number of classes during the week?
(a) P2, P1, P6 only (b) P5, P2, P3 only (c) P5, P6, P1 only (d) None of these.
3. If a certain class of P4 is scheduled on the same day as the P2 batch, how many batches meet on Friday?
(a) 1 (b) 2 (c) 3 (d) 4
4. If P5 is not to be scheduled on any day that P2 is scheduled, how many days can P5 meet?
(a) 1 (b) 2 (c) 3 (d) 4
5. If there is one such day that all batches are to meet which batch would gain additional day?
(a) P1 (b) P2 (c) P4 (d) P5

•Nine students at the 'Little Flower' nursery school take part in the annual fancy dress competition scheduled for ten entries. All are dressed before the show begins, but since one participant falls sick her sister will perform again.

Girls: Diane, Ivy, Holly, Geetu

Boys: Bobby, Eddy, Chimpu, Freddy, Abbey

- Bobby, dressed as a teddy bear will parade immediately after Diane as a dinosaur, who will parade earlier than Geetu as a golliwog.
- Ivy as a Red Indian is to parade later than Diane. She will be followed by immediately by Freddy as a Frog.
- The third person after Chimpu as a clown will be Eddy as an elephant, the next will by Holly as Humpty-Dumpty.
- The second entry after Holly is Abbey as an ape-man, and does not end the program.

6. Which of the following is in alternate order of performers?
(a) Freddy, Ivy, Abbey, Eddy, Bobby, Geetu
(b) Chimpu, Bobby, Holly, Abbey, Freddy.
(c) Geetu, Diane, Bobby, Freddy, Abbey, Ivy.
(d) Chimpu, Geetu, Diane, Bobby, Eddy, Holly.
7. Diane is
(a) The second performer
(b) The second performer after Chimpu.
(c) The performer just before Eddy
(d) followed by two other.

8. Which is the fourth entry after Bobby's?
 (a) Ape-man (b) Clown (c) Red Indian (d) Frog
9. The number of entries between the elephant and the frog is
 (a) 1 (b) 2 (c) 3 (d) 4
10. If it take at least three performers in the middle for a person to change into a new costume, the only one who could be the sick performers sister is
 (a) Geetu (b) Diane (c) Holly (d) Ivy
11. If one performer is standing in for two entries separated by five this performer is
 (a) Geetu (b) Diane (c) Holly (d) Abbey
12. If the total entries were ten instead of nine, which of the following would be necessarily true
 i. Chimpu performed first.
 ii. Abbey performed after Freddy.
 iii. Abbey performed before Geetu.
 (a) i & ii (b) ii & iii (c) i & iii (d) none of these

•Alfa Chemical's marketing department has six key people. The positions in the company can be ranked as follows:

- Shukla works under Ramvilas.
- Vaidyanathan is a superior of Panjawani.
- Jamuar is the immediate boss of Shukla.
- Lalitani is a superior of Vaidyanathan.

13. Which of the following is necessarily true?
 (a) Jamuar is a superior of Panjawani.
 (b) Shukla is a superior of Lalitani.
 (c) Lalitani is a superior of Panjawani.
 (d) Ramvilas is a superior of Panjawani.
14. Which of the following is necessarily false?
 (a) Shukla is superior of Vaidyanathan.
 (b) Ramvilas is a superior of Lalitani.
 (c) Jamuar is a superior of Ramvilas.
 (d) Vaidyanathan and Jamuar have equal ranks.
15. If Tyagi is the immediate superior of Jamuar and Vaidyanathan is superior to Moze then which of the following statements cannot be concluded?
 (a) Ramvilas is a superior to Tyagi.
 (b) Tyagi is superior to Shukla.
 (c) Shukla is a superior to Moze.
 (d) Lalitani is a superior to Moze.

•Maito Peekayaya specialises in trading in alcoholic spirits. Among the wines he trades in, three of them, **Port, White and Sherry** are basically sourced from the three different towns of **Bordeaux, Lyon and Marseilles** not necessarily in that order. Each of these is exported to a different country - **India, Australia and Myanmar**, not necessarily in that order. The countries pay for these in three different currencies **Rupees, Dollars and Kyats**, not necessarily in that order either. From the following clues, identify each wine, its source, export destination and mode of payment.

- i. The Indian Rupee is used to pay for the Lyonian Port.
- ii. Marseille does not trade in White wines, which are not exported to Australia.
- iii. Kyat are not accepted payment for Bordeaux wines.

16. White wines are sourced from
(a) Lyons (b) Bordeaux (c) Marseilles (d) indeterminable
17. Marseilles deals in
(a) Kyats (b) Dollars (c) Rupees (d) indeterminable
18. Wine exported to Australia is a
(a) Port (b) White (c) Sherry (d) indeterminable
19. Myanmar imports wine from
(a) Lyons (b) Marseilles (c) Bordeaux (d) indeterminable
20. Dollar is the currency used for trade in
(a) Port (b) White (c) Sherry (d) indeterminable

PROGGA

Exercise 9(B)

•Have you noticed how the press always records the ages, whether relevant or irrelevant, of those who feature, however fleetingly, in its pages? The local journal's front page the other day recorded five such individuals. Can you identify them fully, say in which capacity each featured on the front page, and, most importantly, discover the age of each of the five protagonists?

First Name : Arun, Jeevan, Maya, Ojaswini, Willy.

Surname : Hegde, More, Narang, Pawar, Seth.

Age : 24,33,42,56,62

Story : Court witness, Fire in kitchen, Good neighbour, Road accident, Sponsored recital.

- Jeevan Pawar is atleast ten years younger than the person who suffered the road accident.
- Willy's evidence at the local magistrates' court was recorded at interminable length; he was not the youngest member of the public featured.
- The good- neighbour story featured the oldest protagonist, who was not Narang.
- The Hegdes suffered the kitchen fire.
- The 56-year-old did not give the sponsored organ recital in aid of local charities.
- Arun is older than Maya, but younger than the person whose surname is Seth ,who is not Ojaswini.

1. The person who suffered the road accident was
(a) Hegde (b) Narang (c) More (d) Seth
2. Willy's age was
(a) 56 (b) 62 (c) 37 (d) 45
3. The good neighbour story feature
(a) Arun (b) Jeevan (c) Maya (d) Ojaswini
4. The 33 year old was
(a) Pawar (b) Hegde (c) More (d) Seth
5. Maya is
(a) Narang (b) More (c) Hegde (d) Seth
6. The road accident victim was
(a) 24 years (b) 33 years (c) 42 years (d) 62 years
7. Ojas' surname was
(a) Hegde (b) More (c) Narang (d) Seth
8. Narang is
(a) Maya (b) Ojas (c) Arun (d) Willy
9. Seth was connected with
(a) Good Neighbour (b) Road accident (c) Sponsored recital (d) Court witness
10. The sponsored recital was given by
(a) Arun Narang (b) Jeevan Pawar (c) Maya Hegde (d) Ojas
More

Exercise 10(A)

•Alpha, Beta, Gamma and Theta are robots and A,B,C,D,E and F are machines. No robot can be assigned to more than one machine at the same time.

- Alpha and Beta are required to run machine E.
- Beta and Gamma are required to run machine C.
- Gamma and Theta are required to run machine A.
- Machine B can be run only by Alpha.
- Machines D and F can be run by any of the robots independently.

1. If machine B is running which other machines cannot run simultaneously?
(a) A and D (b) C (c) E (d) D and E
2. What is the maximum number of machines that can run simultaneously?
(a) 2 (b) 3 (c) 4 (d) 5
3. What is the maximum number of robots that will remain idle with a combination of three running machines?
(a) 0 (b) 1 (c) 2 (d) 3

•Dhanraj, Malti, Yashbir and Satnam are travelling by the Air India flight to London on 4 adjacent seats not necessarily in the given order. The ticket numbers are 091, 062, 073 and 084, again not necessarily in the given order. One of these is a company secretary, one is a doctor, one is an engineer and one is a film artist.

- The doctor is seated between those holding ticket numbers 091 and 062.
- The film artist holds the ticket numbers 073 and has two others between himself and the engineer.
- The only neighbour of Yashbir is Dhanraj, who is not a company secretary.
- Satnam and the company secretary sit on adjacent seats. Neither holds ticket numbers 062 and 084.

4. Dhanraj holds ticket number
(a) 062 (b) 073 (c) 084 (d) 091
5. Malti holds ticket number
(a) 062 (b) 073 (c) 084 (d) 091
6. Yashbir holds ticket number
(a) 062 (b) 073 (c) 084 (d) 091
7. Satnam is a
(a) Company secretary (b) Doctor (c) Engineer (d) Film artist
8. Malti is a
(a) company secretary (b) Doctor (c) Engineer (d) Film artist
9. Yashbir is a
(a) company secretary (b) Doctor (c) Engineer (d) Film artist

•While on his salt march, Gandhi walked through four of these seven villages: **Akkalpur, Burahaal, Chorigarh, Daalmekala, Eklathmar, Fenkdiya and Ghadichor** .Years later, trying to retrace his steps, you ask some villagers which villages Gandhi passed through. You stumble across their strange habit of never telling you the whole truth. They make two true statements but add one false statement to their response. Yet, from the following responses, you can trace Gandhi's steps and answer the questions that follow the statements. Initial letter represents the villagers' village initial eg. A for Akkalpur, B for Burahaal and so on.

- A:** My home-town is Akkalpur. Gandhi passed through Akkalpur. However, he bypassed Burahaal.
- B:** Gandhi did not bypass Burahaal. He bypassed Chorigarh. He did not bypass any of Eklathmar, Fenkdiya and Ghadichor.
- C:** Gandhi bypassed Eklathmar, Fenkdiya and Ghadichor. He bypassed Burahaal. He bypassed my village.
- D:** Gandhi passed Chorigarh . He bypassed Akkalpur . However, he passed my village.

16. Which is the correct sequence of answers for A?

- (a) True, True, False
- (b) True, False, True
- (c) False, True, True
- (d) indeterminate

17. Which is the correct sequence of answers for B?

- (a) True, False, True
- (b) False, True, True
- (c) True, True, False
- (d) indeterminate

18. Which is the correct sequence of answers for C?

- (a) True, True, False
- (b) True, False, True
- (c) False, True, True
- (d) indeterminate

19. Which is the correct sequence of answers for D?

- (a) False, True, True
- (b) True, False, True
- (c) True, True, False
- (d) indeterminate

20. Which of these villages did Gandhi pass?

- (a) Akkalpur, Chorigarh, Daalmekala, Fenkdiya
- (b) Burahaal , Daalmekala , Eklathmar , Ghadichor
- (c) Chorigarh , Daalmekala, Fenkdiya , Ghadichor
- (d) Daalmekala , Eklathmar , Fenkdiya , Ghadichor

Exercise 10(B)

● It was Esha's birthday last week. As she loves animals, each relative chose a card with a different animal picture to accompany his or her present. From the clues given below, can you identify each relative, and describe the card and present each sent to Esha on her birthday?

Relationship : Aunt, Cousin, Granddad, Grandma, Uncle.
Name : Fatima, Jehangir, Mariam, Ayesha, Rahim.
Card : Elephant, Kitten, Lamb, Pony, Puppy.
Present : Bathrobe, Bracelet, Cassette, Chocolates, earrings.

- Esha's grandmother presented the cassette.
- Fatima gave Esha the bathrobe, but the chocolates were not given by Mariam, whose card had a picture of a kitten on it.
- The earrings were not granddad's present to Esha, and they were not accompanied by the card depicting the pink elephant.
- The card which portrayed the lamb was sent by Esha's cousin, whose name is not Ayesha.
- The relative who sent the card with a puppy on it presented the bracelet. This was not Rahim.
- Esha's aunt's present was not an item of jewellery.

1. Grandfather card picture of
(a) kitten (b) lamb (c) puppy (d) elephant
2. Fatima is
(a) aunt (b) cousin (c) grandmother (d) cannot say
3. The card with a pony on it was given by
(a) Rahim (b) Jehangir (c) Fatima (d) Ayesha
4. The bracelet was a present by the
(a) aunt (b) cousin (c) grandfather (d) grandmother
5. Rahim presented the
(a) bathrobe (b) bracelet (c) cassette (d) earrings
6. The bathrobe had the card with the
(a) Elephant (b) Lamb (c) Kitten (d) Pony
7. Ayesha sent
(a) Bracelet (b) Cassette (c) Chocolates (d) Earrings
8. The Kitten card was sent with
(a) Bathrobe (b) Cassettes (c) Chocolates (d) Earrings
9. Fatima sent
(a) Bathrobe + Lamb (b) Cassette + elephant (c) Bathrobe + elephant (d) Cassette + lamb
10. Chocolates were presented by
(a) Cousin (b) Granddad (c) Aunt (d) Uncle

Answers

Exercise 1	(A)	1-a	2-c	3-d	4-c	5-b	6-b	7-b	8-c	9-d	10-c
		11-d	12-b	13-a	14-d	15-d	16-c	17-b	18-d	19-a	20-b
	(B)	1-d	2-a	3-b	4-a	5-c	6-a	7-d	8-b	9-b	10-c
Exercise 2	(A)	1-c	2-a	3-b	4-a	5-a	6-d	7-b	8-a	9-d	10-d
		11-b	12-a	13-c	14-c	15-b	16-c	17-d	18-d	19-b	20-b
	(B)	1-d	2-b	3-d	4-d	5-c	6-c	7-b	8-a	9-c	10-a
Exercise 3	(A)	1-c	2-d	3-b	4-c	5-c	6-b	7-c	8-b	9-d	10-d
		11-b	12-a	13-c	14-d	15-d	16-a	17-d	18-a	19-c	20-b
	(B)	1-d	2-a	3-c	4-b	5-d	6-a	7-b	8-c	9-d	10-c
Exercise 4	(A)	1-a	2-b	3-d	4-d	5-b	6-a	7-a	8-d	9-d	10-b
		11-c	12-d	13-c	14-c	15-b	16-a	17-c	18-b	19-a	20-c
	(B)	1-a	2-d	3-b	4-b	5-c	6-c	7-a	8-d	9-a	10-b
Exercise 5	(A)	1-d	2-b	3-c	4-b	5-c	6-b	7-a	8-d	9-b	10-d
		11-d	12-b	13-b	14-c	15-d	16-d	17-a	18-b	19-a	20-c
	(B)	1-a	2-b	3-c	4-c	5-c	6-a	7-b	8-c	9-a	10-b
Exercise 6	(A)	1-b	2-a	3-c	4-c	5-d	6-c	7-a	8-c	9-d	10-d
		11-c	12-d	13-b	14-a	15-c	16-a	17-b	18-c	19-c	20-b
	(B)	1-d	2-c	3-d	4-a	5-d	6-c	7-d	8-a	9-b	10-d
Exercise 7	(A)	1-d	2-c	3-d	4-b	5-c	6-a	7-c	8-d	9-a	10-b
		11-c	12-d	13-b	14-a	15-b	16-c	17-a	18-d	19-a	20-d
	(B)	1-b	2-d	3-a	4-c	5-d	6-d	7-c	8-c	9-d	10-b
Exercise 8	(A)	1-b	2-c	3-c	4-a	5-d	6-b	7-d	8-b	9-a	10-c
		11-d	12-d	13-b	14-c	15-d	16-b	17-a	18-c	19-b	20-a
	(B)	1-c	2-a	3-d	4-d	5-b	6-b	7-a	8-b	9-d	10-b
Exercise 9	(A)	1-d	2-d	3-b	4-a	5-a	6-b	7-a	8-a	9-d	10-b
		11-b	12-d	13-c	14-c	15-c	16-b	17-a	18-c	19-c	20-b
	(B)	1-b	2-a	3-d	4-b	5-c	6-c	7-b	8-c	9-d	10-b
Exercise 10	(A)	1-c	2-b	3-b	4-c	5-d	6-a	7-d	8-a	9-c	10-d
		11-b	12-a	13-c	14-a	15-c	16-b	17-b	18-c	19-a	20-d
	(B)	1-c	2-b	3-a	4-c	5-d	6-b	7-c	8-b	9-a	10-c

ANALYTICAL REASONING SOLUTIONS

Exercise 1(A)

Q : 1-5

This may be solved by using a grid .

Direct Clues:

- 1) Chablis occupies an **even** number position, so it cannot be at 1,3,5,7 or 9.
- 2) Muscat is to the **right** of Sancerre in the **same 3-bottled row**. So Muscat can't be at 1,2,3,6,7,8. Similarly, Sancerre can't be at 1,2,5,6,7,10.
- 3) Beaujolais is **between** Piesporter to the left & Claret to the right. So it can only be at 4 or 9. Piesporter is to the **left** of a 3 bottle row. So it can be only at 3 or 8. Similarly, Claret can be only at 5 or 10 as it is to the **right**.
- 4) The first condition's 2nd statement says that 3 whites are **underneath** the reds & 2 of the reds are **underneath** the whites. So 3 whites & 2 reds will be at 6,7,8,9 & 10. As each row must have at least 1 red & 1 white, 6 & 7 must have 1 red & 1 white. So at 8,9,10 there must be 2 whites & 1 red. Now clue 3 has Beaujolais, Piesporter & Claret i.e 2 reds & 1 white. As it does not satisfy the above condition, they must be at positions 3,4, 5 i.e. Beaujolais at 4, Piesporter at 3 & Claret at 5.
- 5) From 2 & 4 we get that Muscat & Sancerre will be at 9 or 10 & 8 or 9 respectively.
- 6) Since the whites from 8,9,10 must be under the reds (from 4) and positions 4 & 5 are reds, 9 & 10 must be whites. So from 5 we get Sancerre & Muscat (whites) to be at 9 &10 respectively.
- 7) The 4th clue says that Chateauneuf - du - Pape is not in the same row as Sancerre. So it can't be at 8,9,10.
- 8) As 3 is white, 8 will be red. So cancel the whites.
- 9) The last clue says Cabernet Sauvignon is underneath Muscadet. Cabernet is red & Muscadet is white. So Cabernet may be at 6 or 7 & Muscadet at 1 or 2 .
- 10) Since by now 7 is cancelled for white, 7 belongs to red which is Cabernet Sauvignon (from 9) So 2 belongs to white i.e. Muscadet (from 9)
- 11) Solving the grid for the remaining part the solutions are easily obtained.

The solutions are as follows :

- | | |
|----------------------------|------------------------|
| 1 - Chateauneuf -du - Pape | 6 - Chablis |
| 2 - Muscadet | 7 - Cabernet Sauvignon |
| 3 - Piesporter | 8 - Chianti |
| 4 - Beaujolais | 9 - Sancerre |
| 5 - Claret | 10 - Muscat |

OR

There is another method of solving this problem, in which we directly try to arrive at the position of every bottle. The 3 white & 2 red wines under the opposite colour wines means that these are in positions 6, 7, 8, 9, 10.

So 2 white & 3 red wines are in positions 1, 2, 3, 4, 5.

Beaujolais has Piesporter to left & Claret to right. This is a 2 red & 1 white combination. So it must be in positions 3, 4, 5 with Piesporter at 3, Beaujolais at 4 and Claret at 5.

Since Muscat is to right of Sancerre, their positions are 10 & 9 respectively. 8 has a red wine as it underneath a white wine (3).

From the red wines Beaujolais & Claret are positioned; Chateauneuf -du - Pape is not in the same row as Sancerre; so not at 8. Cabernet Sauvignon is below Muscadet, so it cannot be at 8. So the only wine left for position 8 is Chianti.

Cabernet Sauvignon is below Muscadet. So Muscadet is at 1 or 2. If Muscadet is at 1, Cabernet Sauvignon is at 6. So Chateauneuf -du - Pape will be at 2 (red next to white) & Chablis will be at 7.

But this not possible as Chablis must be at an even number position.

So Muscadet is at 2, Chateauneuf-du-Pape at 1, Cabernet Sauvignon at 7 and Chablis at 6.

Q : 6 - 8

The question says that there are 5 members which can easily be deduced to the following relations:
1 Father , 2 Sons , 1 Sister & 1 Wife.

It is clear that Parikshit is one of the sons and his sister is Sulakshana. Since there is only one more female, mentioned as Karan's wife, it must be Rashmi. As Karan also has Sulakshana as his sister, he is Parikshit's brother. So Tarkeshwar must be the father.

Q : 9

Statements 1 & 2 have only gentle as the common word in English, so it must correspond to *Kuru*.

Statements 2 & 3 have need care in common corresponding to *ochin peri*. Statement 2 has only people remaining and must correspond to *loga*.

So need care must correspond to *peri or ochin*. Hence the answer is *loga & peri*.

Q : 10 - 15

Women : M , N & R Men : O , S , T , U , V & W

10) If all 3 women are involved, the combination of men involved **cannot** be :

- a) O with anybody because R is involved;
- b) U & V together ;
- c) S & T not together ;

So the available options are : S & T or U & W or V & W. So the answer is (c).

11) As R never works with O and M & N have no problem working with anybody R must not be involved . So answer is M & N - option (d).

12) If M is involved and N is not means that R must be involved. So 3 men, of which O is not a part, of must be involved. So analysing given statements:

- i) Either U or V but both not involved

This means that U or V can pair up only with S & T. But S & T have the option of choosing W. So U or V mustn't necessarily be involved. So statement i) is not necessarily true.

- ii) S & T are involved

As explained earlier this is necessarily true. So the answer is option (b).

13) If V is involved, U can't be involved. If R is involved, O can't be involved. Since W requires 2 more men, of which U & O are not available he has lesser options than S & T. So the answer is option (a).

14) Analysing the given statements

i) If only 2 women can mean M & N who can pair with U + W + O or V + W + O So i) is not definitely true.

ii) If R is not involved can give options like M & N with S+T+U or S+T+V or S+T+W. So ii) is not definitely true.

iii) If either M or N not involved means R is involved. So O can't be involved. So if S & T are not involved means the only available options are U + W or V + W which is not sufficient. So S & T + U or V or W is necessary.

So iii) is definitely true. So answer is option (d).

15) As explained before, available options are S & T or U & W or V & W.

So answer is option (d).

Q : 16 - 20

Since everybody makes at least 1 true statement, we can make an assumption about a statement's authenticity, which if false will get contradicted at some stage.

After looking at the statements made by Hillary & Hunt, we notice that their last statements are opposites. So one of those 2 statements is the truth. Assuming the last statement of Hillary to be true, his other statements must be false. Since he says that he saw Superman & Hunt also says the same thing, both are false statements. So Hunt's 2nd statement must be true. On the basis of our assumption Norgay's 1st statement becomes false. Since Hillary's 2nd statement is also false Norgay's 2nd statement must be true. So his last statement must be false. As Norgay's last statement is false, it means that Austen saw the bird. So Austen's 1st statement is false.

Looking at everybody's second statement, and knowing that the 1st is false & the other 2 are true, we can conclude that Norgay has seen the plane. So Austen's 2nd statement is true and the last statement is false.

Exercise 1(B)

This **must** be solved by using a grid.

DIRECT CLUES :

Clue # 1 : No husband shares a first name initial with his wife.

So cancel out matching initials i.e. Balbir & Basanti and Parag & Parvati can't be pairs .

Clue # 2 : **Only one** husband, not Parag, has identical initials for his name.

So cancel Parag with Periyar. Keep this clue marked.

Clue # 3 : None of the wives have same initials for surname.

So cancel Basanti & Bagga, Parvati & Periyar, Savitri & Sen.

Clue # 4 : Rangmahal is run by Jaidev & wife.

So cancel others for Rangmahal.

Clue # 5 : Govind & Mayavati are 1 of the couples.

So pair them and cancel out the others.

Clue # 6 : Chandini's surname is Nath. So cancel out the others.

Clue # 7 : Joshi owns Sagar. So cancel out the others.

Clue # 8 : Parvati owns Pinnacle Garden. So cancel out the others.

Clue # 9 : Mrs. Joshi or Parvati are not married to Jayant.

This means that Jayant is not Mr. Joshi and Parvati is not Mrs. Joshi. So cancel them.

Clue # 10 : Sen's restaurant has the word Garden in it.

So cancel out the other 3 restaurants.

Clue # 11 : Ashiana is not Periyar's nor Savitri's.

So cancel Savitri out from Periyar & Ashiana.

We now consider the indirect clues:

A] Govind & Maya are pairs:

1) Since Govind doesn't own Rangmahal, Maya doesn't own it either. So cancel Maya & Rangmahal.

2) Maya is not Mrs. Nath. So Govind is not Mr. Nath. So cancel Govind & Nath.

3) Maya doesn't own Rangmahal or Pinnacle Garden. So Govind doesn't own them either.

B] Chandni is Mrs. Nath:

1) Chandni doesn't own Pinnacle Garden. So the Nath's don't own it either.

2) Nath's don't own Sagar. Hence Chandni also doesn't own it.

C] Parvati owns Pinnacle Garden:

1) Parvati is not the wife of Govind, Jayant or Parag. So they don't own Pinnacle Garden.

*** Here we find that Pinnacle Garden is owned by Balwant. So mark it & cancel others.

2) This means that Parvati is Balwant's wife.

3) Parvati is not a Joshi, Nath or Periyar. So they don't own Pinnacle Garden.

Also Balwant is not a Joshi, Periyar or Nath.

D] Mrs. Joshi owns Sagar:

1) Sagar doesn't belong to Balwant or Jaideep. So Balwant or Jaideep isn't a Joshi.

*** Here the marked clue, # 2, comes into picture. Since Jaideep & Jayant aren't Joshis and Parag isn't a Periyar it means that the only person with identical name & surname initials is Balwant whose surname must be Bagga. So his wife must be Parvati i.e. Mrs. Bagga.

@@ Since Pinnacle Garden is owned by Bagga and Clue # 10 says that Sens have the word Garden in their restaurant's name, their restaurant must be Garden Court.

Once we mark Sen for Garden Court, we notice that Ashiana is run by Nath.

So Chandini runs Ashiana.

Again we see that Periyars run Rangmahal. So Jaidev is Mr. Periyar.

We see that Savitri is Mrs. Joshi. So Savitri owns Sagar.

Since Savitri is not Balwant's or Govind's wife, they aren't Joshis nor do they own Sagar.

Here we see that Parag is a Joshi. So he owns Sagar and Savitri is wife.

Again we notice that Mayawati has Garden Court which belongs to Sen.

So Mayawati is Mrs. Sen. Govind is Mr. Sen and he owns Garden Court.

Remaining options show that Jayant is Mr. Nath, his wife is Chandini and they own Ashiana.

Basanti is Mrs. Periyar, she is Jaideep's wife and they own Rangmahal.

Thus the grid is solved.

Exercise 2(A)

Q : 1 - 6

There are 5 home teams & 5 away teams each placed in alphabetical order

From the clues the following points can be inferred :

- > St. Evangeline (away) must have scored 2 goals and lost to Ornellas (home) .
- > Since 1 match was a draw (1 - 1) and a home side lost their match, the scores of the away teams were 2,1,1,0,0.
- > So Patrons won by 2 - 0 and Tarachand lost by 0 - 2.
- > Since Bhagubhai was just above St. Evangeline, their opponents were Loyola because Loyola comes just before Ornellas, alphabetically.

The matches and the scores obtained are :

Crescent (2) - Tarachand (0) Ornellas (3) - St. Evangeline (2) Loyolas (1) - Bhagubhai (1)
Patron St (2) - Vidya Niketan (0)

Q : 7 - 11

If Dr. Mukharjee goes, Dr. Barooah & Dr. Chatterjee do not go. Dr. Chatterjee will not go with Dr. Patel. So available combinations are:

- 1) A + B with N + O or N + P or O + P.
- 2) A + C with M + N or N + O.
- 3) B + C with N + O.

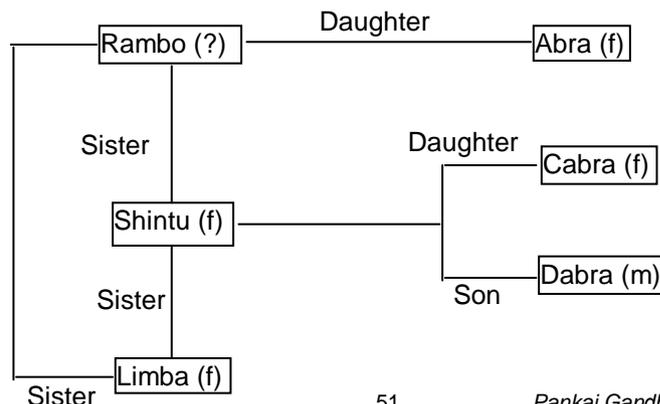
Q : 12 - 15

This question can be solved by using a grid. A solution can also be obtained by using a table.

1. Ram cannot be Wandrekar and he could have worn the colour Blue or Brown and the Jacket or the Raincoat.
2. As Lokesh is wearing the Jacket, Ram must be wearing the Raincoat.
3. As Achrekar is not wearing the Raincoat, Ram cannot be Achrekar and must be Karmarkar.
4. Ram Karmarkar must be wearing the Blue garment.
5. The given information can now be matched as follows:

Girish	Ram	Lokesh
Achrekar	Karmarkar	Wandrekar
Grey	Blue	Brown
Sweater	Raincoat	Jacket

Q : 16 – 18



Q : 19

The alphabets are in a series where the alphabets are in reverse sequence with the differences in the sequence 1,3,5... So the answer is **U**.

Q : 20

The alphabets appear in alternate pairs i.e. A B (c d) E F (g h) I J (k l) M N (o p)...

Exercise 2(B)

This problem must be solved by using a grid. Once the direct clues are plotted and a few indirect clues are obtained, it becomes very necessary that the second last clue is used at this stage again to get the exact position and we can then complete the grid.

Some important hints and indirect clues that can be inferred from the given information are as follows:

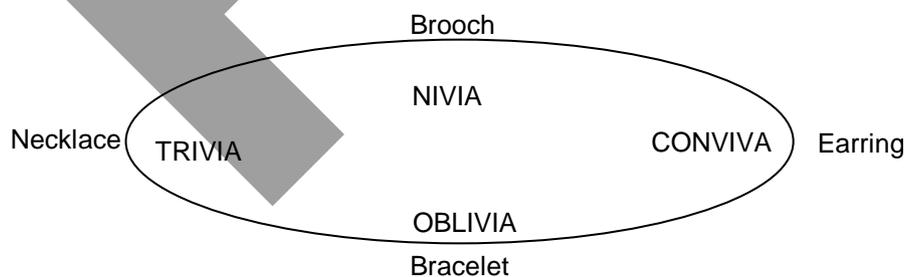
1. As Mohandas went two days after Sagar, Mohandas could not have gone on Monday or Tuesday and Sagar could not have gone on Thursday or Friday.
2. As Mihir went before Parag, he could not have gone on Thursday or Friday.
3. Pulak could have gone on Monday, Wednesday or Friday. Mihir could have gone on Monday, Tuesday or Wednesday. Sagar could have gone on Monday, Tuesday or Wednesday. Mihir and Sagar have not gone before Pulak. As Saturday and Sunday have not been included in the given information, Pulak could not have gone on Monday. If it is assumed that Pulak went on Wednesday, Mihir and Sagar must have gone on Monday and Tuesday. But, this contradicts the given clue. Therefore, Pulak must have gone on Friday.
4. As Mohandas went for his picnic on Thursday, Sagar must have gone for his picnic on Tuesday.

The grid can now be completed by matching the clues marked on it.

Exercise 3(A)

Q : 1 & 2

The arrangement is in the following format



Each person got what the next person wanted. Here we see what each person got. So they wanted what the next person got.

Q : 3 - 7

The conditions given can give only the following combinations as possibilities:

Wheat + Maize and Masur + Udad or Masur + Channa.

Maize + Rice and Masur + Channa.

Wheat + Rice and Moong + Masur or Moong + Channa or Masur + Channa.

Q : 8 - 12

The locations can be obtained by placing the initials in a line according to the clues.
Take only one plane at first, for e.g. the North - South plane:

Since C is south of F, write C below F F

C

F is south of E, so write E above F E

F

C

Proceed with all the clues in this way to get the locations.

It will be (east - west) B F A C D E (north - south) B

A

E

F

C or D

D or C

So plotting the positions with the help of the locations on the planes will give the following:

B

A

E

F

C/D

C/D

Q : 13 - 16

D is younger than 3 brothers, i.e. he is the fourth: so he cannot be the twin as he & his twin will become the youngest. So the twins are at 2 & 3. Brijmohan is the eldest, Eknath is one of the twins and Chandrasen is the youngest. Abhishek is the other twin.

Q : 17 - 20

Here we have to assume that both the statement made by a certain person is true which means that he has caught the biggest fish. If our assumption is false then we will have a pair of contradicting statements or contradictory conclusions.

Let us assume that Eir makes true statements. Since he says that Mi did not catch the smallest fish, Bir's statement that Mi caught the smallest fish must be false. So Bir's first statement must be true. By now it is evident that it must Eir who has caught the smallest fish, since the others have not caught them. But this contradicts the given condition of the person making all 3 true statements.

So let us next assume Bir makes 3 true statements. So he has caught the biggest fish and Mi has caught the smallest fish. So Eir's 1st statement is true & 2nd is false. So Phatte's 1st statement is true & so his 2nd must be false. Since Bir's statements are true Mi's 1st statement must be false. So his 2nd statement must be true.

Here we have not come across any contradictory statements or conclusions. So our assumption was correct. The solutions are Mi - 20 ; Eir - 22 ; Phatte - 26 ; Bir - 30 .

Exercise 3(B)

The solution can be obtained by use of the grid. The important hints and indirect clues that can be obtained from the given set of clues are as follows:

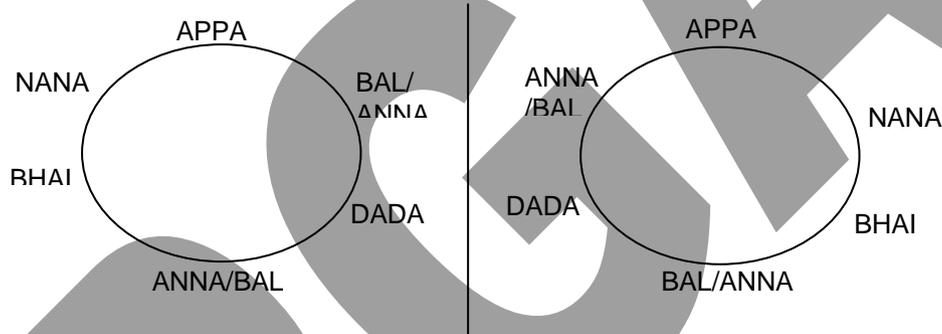
1. As Toofan finished 6th before the Bangalore race, the Bangalore race could not have been held in May and the race on the 16th of the month could not have been in September.
2. The date could have been 16th in June or August. Therefore, the Bangalore race must have been in either June or in August.
3. June and September do not have 31 days. Using this information and the clues marked on the grid, we can match Bombay -September, Bangalore - July and the race on the 16th of the month - June.
4. Toofan finished 4th at the Poona race; he must, therefore, have finished 6th in the race held in June.

The grid can now be completed with the help of the above information.

Exercise 4(A)

Q : 1 - 3

The possible positions can be plotted as follows;



Q : 4 - 7

By plotting a small grid we can easily solve the question.

We know that C doesn't have a yo - yo. Each has only 1 toy. Moreover they each **may** lie only once.

To analyse Chika's answers, if we assume any one of her answers to be a lie, then we end up with another contradictory answer suggesting that she lies twice, which is not possible. So she has answered all her answers truthfully. So she must have a doll.

Now Ina says Yes to the first 2. So 1 must be a lie. So the 3rd statement is true & so she doesn't have the yo - yo or the doll. So Ina has the marble or the ball.

Mina's 3rd answer is a Yes meaning that she has the yo - yo. But she contradicts herself in the 2nd answer with a No. Answers 2 or 3 or both must be true. If both are true it means Mina has the doll, which is not possible. If answer 2 is true and 3 is false, then she has the ball. The other option means that she has the marble.

Since Ina and Mina have the ball and marble and Chika has the doll, Dika must have the yo - yo.

If Ina has the ball, Mina must have the marble. But Mina says a yes for the ball and a no for the marble. So she has lied twice, which is not possible. So Mina must have the ball and Ina will have the marble.

Q : 8 - 11

The possible combinations are :

A + B + C	F + H or G + H
B + C + D	G + H

The answers can be obtained from the above combinations.

Q : 12 - 15

The positions of the pets in the kennels can be easily determined.

<u>Peking</u>	<u>vac</u>	<u>Siamese</u>	<u>vac</u>	<u>Poodle</u>	<u>Cheshire</u>	<u>Alsatian</u>	<u>Doberman</u>	<u>vac</u>
1	2	3	4	5	6	7	8	9

OR

<u>Vac</u>	<u>Doberman</u>	<u>Poodle</u>	<u>Cheshire</u>	<u>Alsatian</u>	<u>vac</u>	<u>Siamese</u>	<u>vac</u>	<u>Peking</u>
1	2	3	4	5	6	7	8	9

Q : 16 - 20

The use of a grid makes this problem very easy to solve. Most of the clues are sufficient to arrive at a position where the secondary clues can be obtained & the grid can be completed. A solution can also be obtained with the help of a table as shown below:

1. Pahlavi could have driven the Maharani or the Shahzadi.
2. As the driver and the car do not have the same initials, Ergo could not have driven the Empress. So, Balraj must have driven the Empress.
3. As Pahlavi and the Empress have not participated on 25th February, Ergo must have raced on 25th February.
4. As Balraj and the Shahzadi were not the last to race, Balraj must have raced in August and Ergo must have raced in the Shahzadi.
5. The given information can now be matched as follows:

Ergo	Balraj	Pahlavi
Shahzadi	Empress	Maharani
25 th February	6 th August	14 th October

Exercise 4(B)

This must be solved by using a grid. It can be easier if use of common sense is adopted to differentiate between boys and girls on the basis of their names and then striking out the other gender's names for any of the direct clues.

Exercise 5(A)

Q : 1 - 7

The main thing is that if any specialisation is common to the 2 modules selected it gets dropped and is not a specialisation.

M001 doesn't have production and M003 doesn't have marketing. But their combination gives us marketing & systems. So M001 must have marketing. Since M001 & M002 have 4 different subjects, there must be no common specialisation and M002 will not have marketing but will have production. M003 will have systems included because it is not a part of M001. So M001 will have finance or personnel and it will be common to M003. Since the M001 & M004 combination doesn't have marketing as a specialisation, it means that they have marketing in common. Since they have finance

& personnel in common, M001 has finance and M004 has personnel. So M002 also has personnel. So M003 must also have finance. This leaves M005 with production and systems.

Q : 8 - 10

8) If Algebra is on 6th shelf then the positions are

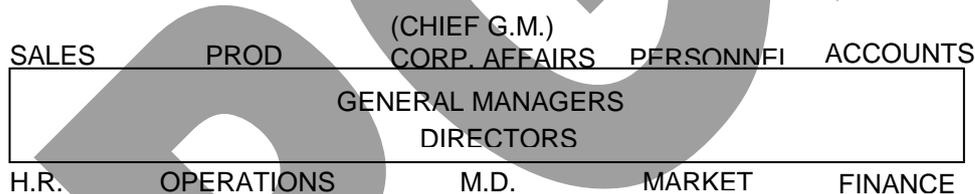
- | | | | |
|---|-----------------------|---|-----------------------|
| 1 | (Geo / Bio / Phy) ? | 2 | (Geo / Bio / Phy) ? |
| 3 | (Geo / Bio / Phy) ? | 4 | Chemistry |
| 5 | (Physics) ? | 6 | Algebra |

- 9)
- | | | | |
|---|-----------|---|----------|
| 1 | Chemistry | 2 | Vacant |
| 3 | Algebra | 4 | Physics |
| 5 | Biology | 6 | Geometry |

- 10)
- | | | | |
|---|---------------------------|---|---------------------------|
| 1 | (Chemistry / Physics) ? | 2 | (Chemistry / Physics) ? |
| 3 | (Algebra / Physics) ? | 4 | (Algebra / Physics) ? |
| 5 | Geometry | 6 | Biology |

Q : 11 - 14

The seating arrangement is as shown



Q : 15 - 20

From the clues we conclude

Males :- V, Z, X.

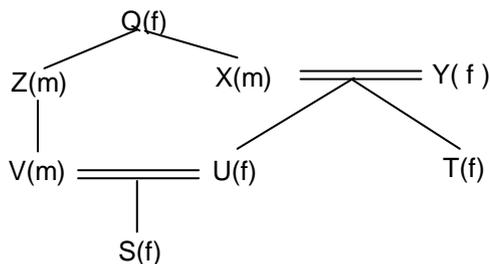
Females:- T, U, S, Q, Y, J, K, L.

Not decided:- M, N.

U (f) is married to V (m) as both are of opposite sex and have a daughter S (f).

Since they are married they must have different fathers. But they have the same paternal grandfather. So their fathers are brothers. So Z (m) is father of V (m). Now S (f) has 2 grandfathers and 4 grandmothers. So there are 2 sets of marriages. Otherwise there would have been 1 grandfather & many grandmothers or vice - versa.

Z (m) & X (m) are the only 2 grandfathers of S (f). So X (m) must be U (f)'s father & Z (m)'s brother. Based on above analysis the family tree is as follows:



M & N are either brothers of V (m) married to U (f) or they are sisters of U (f) married to V (m) J, K, L may be sisters of y (f) married to X (m) or 2 sisters married to Z (m)

Exercise 5(B)

A simple straightforward problem which can be solved by using a grid.

Exercise 6(A)

Q : 1 - 4

We have to look at the given options to get the answer .

- 1) Since A & B must be launched together, they cannot be launched in a phased manner. So D will have to be launched in a phased manner. The only option having D and not having A & B is selected.
- 2) Since A & B must be launched together, and C must be launched in only 1 phase; we must select the option which mustn't have C. So the only option is A,B,D & C,D,E.
- 3) Use the same logic as above.
- 4) On studying the given options we realise that only the first 2 statements are true.

Q : 5 - 9

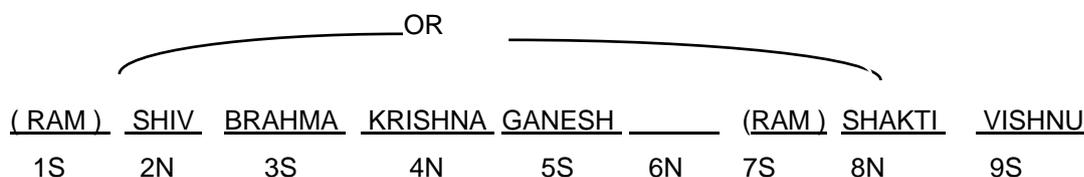
After careful deliberation we can arrive at the ranks and topics of the speakers.

RANK	SPEAKER	TOPICS
1	Priya	Intellectual Property Rights
2	Aparna	Stock Markets
3	Devika	European Community
4	Jagat	Electoral Reforms
5	Vivek	Financial Services
6	Srikant	Liberalisation
7	Karan	Convertibility

The answers can be written on the basis of the above positions.

Q : 10 - 13

The position of the temples is as shown below



Q: 14 - 18

If we plot a simple grid, we can obtain the solutions very easily from the given clues. The secondary clues for corresponding relations can be obtained without any difficulty. By using a table, the solution can be obtained as follows:

1. Yakoob's horse could be Bad News or Thundering Typhoon.
2. Thundering Typhoon was bought at Timbuctoo and was of Nordic stock. So, Yakoob must own Bad News.
3. As Tiger cannot own Thundering Typhoon, Mushtaq must own Thundering Typhoon.
4. The given information can now be matched as follows:

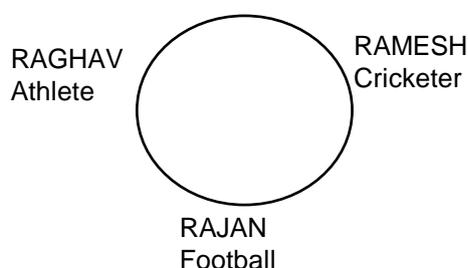
Tiger	Yakoob	Mushtaq
White Lightning	Bad News	Thundering Typhoon
Arabic	Siberian	Nordic
Jhumritalaiya	Zululand	Timbuctoo

Q : 19

We realise that X stands for W, D stands for R and K stands for E. So the option with K at the 3rd & 5th places must be the answer.

Q : 20

The positions of the 3 boys sitting around the table can be determined as shown;



Exercise 6(B)

This is a slightly difficult problem because no direct clue gives an answer. In this problem, there are no matching clues. The clues given are all negative clues, i.e., the clues do not give a match but yield a relation of the form 'X is not Y'. In order to solve this grid, we have to refer to the given clues time and again.

1. Debutante cannot be fragrance A and Diva cannot be fragrance E. As the Hybrid tea and the Apricot rose are less fragrant than the Debutante, they cannot be fragrance A or B. Also, the Debutante and the Diva cannot be the Hybrid tea or the Apricot rose.

2. The Deep pink and the Pale pink roses cannot be fragrances A or E. As the Deep pink is more fragrant than the Pale pink, the Deep pink cannot be fragrance D and the Pale pink cannot be fragrance B. The Deep pink is not the Shrub and the Pale pink is not the Floribunda. The Deep pink and the Shrub have the same initial letter, i.e., D or S and the Pale pink have the same initial letter, i.e., D or S, the pink roses cannot be the Lamia. Also, the Shrub and the Floribunda cannot be the Lamia.
3. The Climber cannot have fragrance D or E, the Soft silk cannot have fragrance A or E and the Lamia cannot have fragrance A. The best fragrance that the Soft silk can have is B. Therefore, the Lamia cannot have fragrance B.
4. The Miniature cannot have fragrance A or B, the Yellow rose cannot have fragrance A or E and the Serene cannot have fragrance E. We can say that the Serene could have Fragrances A, B, C or D; the Yellow rose could have fragrances B, C or D; the Miniature could have fragrances D or E. The given clue says that the Serene, the Yellow rose and the Miniature are consecutive in order of fragrance. So, their fragrances could be B, C and D or C, D and E respectively. We can now state that the Serene cannot have fragrance A or D and the Yellow rose cannot have fragrance B.
5. As the Diva has fragrance A, it cannot be either of the pink roses.
6. As the Yellow rose has fragrance D, the Serene must have fragrance C and the Miniature must have fragrance E.
7. As the Deep pink is the Debutante, the Shrub must be the Diva. Also, as the Pale pink is the Serene, the Floribunda must be the Soft silk.

Using the above information and referring to the given clues, we can cross out cells that do not match and complete the grid.

Exercise 7(A)

Q : 1 - 10

The position of the people in different departments is as follows :

1	2	3	4	5	6
H(S)	G	J	A(I)	B(S)	L(I)
K(I)	D		C(I)	F(I)	Inder(I)
			E(S)		

The questions can be answered on the basis of the above charted positions & functions.

Q : 11 - 14

According to the given conditions we have

DAY 1 --- J + M , K + N , L + O .

DAY 2 --- J + O , K + M , L + N .

DAY 3 --- J + N , K + L , M + O

Q : 15 - 18

Since Bunty & Rambo are right and Yash & Bunty are wrong and since the colour initials do not match their name initials we get to the conclusion that round is blue or green, square is red or yellow, triangle is red or blue and hexagon is green or yellow. Since initials don't match Bunty's triangle must be red; so Rambo's square is yellow. So the hexagon must be green & so must belong to Yash. The blue circle must be Gundappa's.

Q : 19 - 20

Since all of them speak only the truth or only lies, let us assume that Ajit is speaking the truth. Peter's 1st statement is the truth because Robert wasn't involved. But Peter's 2nd statement says that he wasn't

involved which contradicts Ajit's statement. So Robert doesn't tell the complete truth. So the given conditions are not satisfied.

Let us now assume that Robert speaks the complete truth. Comparing Ajit's statement with our assumption and wanting to satisfy the given condition, his 2nd statement must also be false. Peter's statements then are the truth. Furthermore Michael's statements then become false. Since no contradictions of any form are obtained, the assumption was correct. So Ajit was the killer & Michael was his accomplice.

Exercise 7(B)

The problem can be solved by use of a grid.

The hitch while solving solving the grid can be resolved in the following manner.

Wheat has times 10 & 12. But if it is at 12, then Sankholi becomes 2 which is not possible.

So wheat is 10 and Sankholi is 12. So Sankholi is Helicopter.

Exercise 8(A)

Q : 1 - 7

Considering the given conditions for deciding the combinations possible we get the following combinations:

LEAD	PRESENTERS	COUNTERARGUMENTS
C	A & B	G & H, F & G or F & H
D	A & C	G & H, F & G or F & H
E	A & C	F & G or F & H

Q : 8 - 13

The positions of the officers & their countries can be worked out to the following

Russian	Indian	British	French	Japanese	American
Ivan	Rama	McLog	Peter S	Leslie D	H Sulu
					Kirk

Q : 14 & 15

<u>daughter of</u>	<u>son of</u>	<u>father of</u>
A(f)	B(m)	C(m)
		D(?)

Q : 16 - 20

This is a very simple problem if solved by using a grid. By using a table, the solution can be obtained as follows:

- Gabbar rides horses and he terrorises either Deb or Singh.
- Malkhan does not terrorise the man from Gir, where boats are used. So, Malkhan uses jeeps and Phoolan uses boats.
- Deb is from Kumaon, where jeeps are used. So, Malkhan terrorises Deb.
- The given information can now be matched as follows:

Phoolan	Gabbar	Malkhan
Boats	Horses	Jeeps
Yadav	Singh	Deb
Gir	Chambal	Kumaon

Exercise 8(B)

This grid problem can be further simplified by differentiating between boys & girls on the basis of their names and striking out the opposite gender names for related clues. The important hints in solving this problem are as follows:

1. Use the names given to identify their genders.
2. Jaya and Chhaya could not have thrown wellies or stepped into something as it was a lad who did both.
3. As Nilesh's surname is after Jaya's, Nilesh cannot be Angre. However, if Jaya is Handa, Nilesh would then be Pandit, which is a contradiction. Therefore, Jaya cannot be Handa.

Exercise 9(A)

Q : 1-5

On the basis of the given data we get the following schedule

Batch	Mon	Tue	Wed	Thu	Fri	Sat
P1		Y		Y		Y
P2	Y	Y	Y	Y		
P3			Y	Y	Y	Y
P4			(Y)		(Y)	
P5	Y	Y	Y		Y	
P6	Y	Y	Y	Y		

The questions can be answered on the basis of the above table where the Y's stand for yes

Q : 6 – 12

We can arrive at the following sequence of performers & their costumes.

1	Chimpu	Clown
2	Diane	Dinosaur
3	Bobby	Teddy bear
4	Eddy	Elephant
5	Holly	Humpty - Dumpty
6	Geetu	Golliwog
7	Abbey	Ape - man
8		
9	Ivy	Red Indian
10	Freddy	Frog

Q : 13 - 15

The positions obtained are

L		R
V		J
P		S

The 2 of them do not have any specified relationship or connection of any pattern.

Q : 16 - 20

This is also a simple form of the grid where the answers can be obtained straight away after plotting the direct clues. Alternately, the solution can be obtained as follows:

1. The port wine is from Lyon and is exported to India, where the currency is Rupees.
2. As Marseille does not trade in White wine, Marseille trades in Sherry and the White wine is made in Bordeaux. Also, as the White wine is not exported to Australia, the Sherry must be exported to Australia.
3. As the wine made in Bordeaux cannot be paid for in Kyats, the currency used must be Dollars.
4. The given information can now be matched as follows:

Port	White	Sherry
Lyon	Bordeaux	Marseille
India	Myanmar	Australia
Rupees	Dollars	Kyats

Exercise 9(B)

This grid problem can be solved easily if the age concepts are understood properly and the corresponding crosses are made, especially in the case of Jeevan Pawar. Also keep in mind that in the last clue we can cross out all the names with the mentioned surnames. This is sufficient to be able to solve the problem. Some important hints are:

1. Jeevan's age cannot be 56 or 62 and the accident victim cannot be 24 or 33.
2. Seth's age could be 42, 56 or 62, Arun's age cannot be 24 or 62, Maya's age cannot be 56 or 62 and the accident victim's age could be 42 or 56. As Seth is not 62, he could be 42 or 56. Using this information, we can say that Arun could be 33 or 42 and Maya could be 24 or 33.
3. As the accident victim is 42 years old, Jeevan must be 24 years old.
4. We now get Maya: 33 years old, Arun: 42 years old and Seth: 56 years old.

Exercise 10(A)

Q : 1

If B is running, it means that Alpha is occupied. So only machine E cannot be run simultaneously.

Q : 2

The maximum number of machines that be run simultaneously are 3 because the possible combination is only when machines D , F + A/ B/ C or E are working.

Q : 3

When machines B , D & F are working only 3 robots are required. So 1 robot will be idle.

Q : 4 - 9

This can be solved by using a grid. Keep the following point in mind: The only neighbour of Yashbir is Dhanraj means that Yashbir is sitting at the corner. The remaining part is simple. With the help of a table, the solution can be obtained as follows:

1. The doctor could be on seat 073 or 084.
2. The artist and the engineer are sitting at the extremes. As the artist sits at seat 073, the doctor must be sitting at seat 084.
3. The company secretary could be sitting at seat 062 or 091. But, by using the fourth clue, we can establish that the company secretary is sitting at seat 091.
4. As Yashbir is sitting at the extreme end, he could be either the engineer or the artist. As yashbir's neighbour, Dhanraj is not the company secretary, Yashbir and Dhanraj must be the engineer and the doctor respectively.
5. The given information can now be matched as follows:

073	091	084	062
Artist	Company Secretary	Doctor	Engineer
Satnam	Malti	Dhanraj	Yashbir

Q : 10 - 15

The subjects that a student can choose are:

	Maths	Stats	Phy	Bio	Zoo	Chem	Bot	Geol
1st	A	@	A	A	@	C	C	C
2nd	X	@	A	A	@	C	C	C
3rd	X	X	X	C	C	C	C	C

A - available @ - conditional to 12th subject X - not available C- compulsory

With the help of the above table we are able to answer the questions.

Q : 16 - 20

Since everybody makes 2 true & 1 false statement, we will be able to evaluate the answers made by each villager if make an assumption.

Since A's 1st statement is true, let us assume the 2nd to be false. So the 3rd must be true. This means that B's 1st statement is false. So the remaining 2 are true. So the 2nd & 3rd statements of C must be true, which means that C's first statement is false. So Gandhiji did not bypass E , F , G. D's 1st statement being false the other 2 must be true.

As we haven't got a single contradiction in the entire process, our assumption was correct. So Gandhiji passed through D, E, F, G.

Exercise 10(B)

This grid problem becomes easier to solve if a distinction is made in the clues on the basis of the names of the boys & girls and marking out the other gender for the relevant clues. The following are some important hints that can be used to arrive at the solution.

1. Use the names to identify the genders.
2. As there are only two males, they have to be the uncle and the grandfather. Therefore, the cousin obviously is a female.

The grid can be completed with the help of the above hints and the given clues.

PPGGA