

Analytical Reasoning



Practice Exercise: I

Direction for Questions: (1 to 3)

- (i) Six friends A, B, C, D, E and F are sitting along the sides of a hexagonal table for playing a game, though not necessarily in the same order.
- (ii) F, who is sitting exactly opposite of A, is to the immediate right B.
- (iii) D is between A and B and is exactly opposite to C.

1. A is sitting between which of the following pairs of persons?

- (a) D and E (b) B and E
(c) E and C (d) None of these

2. Who is sitting opposite B?

- (a) E (b) F
(c) A (d) C

3. Three of the following are alike in a certain way on the basis of sitting positions and so from a group. Which is the one that does not belong to the group?

- (a) B, C (b) A, D
(c) B, F (d) E, A

Direction for Questions: (4 to 8)

A, B, C and D are four friends living together in a flat and they have an agreement that whatever edible comes they will share equally among themselves. One day A's uncle came to him and gave a box of laddoos. Since no one was around, A divided the laddoos in four equal parts and ate his share after which he put the rest in the box. As he was closing the box, B walked in and took the box. He again divided remaining laddoos in four equal parts. A and B ate one part each and kept the remaining laddoos in the box. Suddenly C appeared and snatched the box. He again divided the laddoos in

four equal parts, the three of them ate one part each and kept the remaining laddoos in the box. Later when D came, he again divided the laddoos in four equal parts and all four ate their respectively share. In total D ate 3 laddoos.

4. How many laddoos, in total did C eat?
(a) 12 (b) 15
(c) 39 (d) None of these

5. How many laddoos, in total did B eat?
(a) 24 (b) 15
(c) 39 (d) None of these

6. How many laddoos, in total did A eat?
(a) 56 (b) 68
(c) 71 (d) None of these

7. How many laddoos were given to A by his Uncle?
(a) 128 (b) 125
(c) 113 (d) None of these

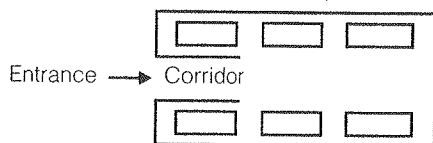
8. How many laddoos, did A eat the first time?
(a) 32 (b) 24
(c) 15 (d) None of these

Direction for Questions: (9 to 13)

- (i) A, B, C, D, E, F G and H are eight friends. Three of them play cricket and table tennis each and two of them play football. Each one of them has a different height
- (ii) The tallest does not play football and the shortest does not play cricket
- (iii) F is taller than A and D but shorter than H and B. E who does not play cricket, is taller than B and is second to the tallest. G is shorter than D but taller than A.
- (iv) H, who is fourth from the top, play table tennis with D.
- (v) G does not play either cricket or football. B does not play football.

9. Who is the tallest?
 (a) B (b) H
 (c) C (d) Data inadequate
10. Who is the shortest?
 (a) G (b) D
 (c) A (d) Data inadequate
11. Which of the following pairs of friends play foot ball?
 (a) EF (b) EA
 (c) HF (d) Data inadequate
12. What is F's position from the top when they are arranged in descending order of their height?
 (a) Fifth (b) Fourth
 (c) Sixth (d) None of these
13. Which of the following group of friends play circket
 (a) CAE (b) CBF
 (c) CBA (d) None of these

Direction for Questions: (14 to 17)



The plan above shows an office block for six officers—A, B, C, D, E and F. Both B and C occupy offices to the right of the corridor (as one enters the office block) and A occupies office to the left of the corridor. E and F occupy offices on opposite sides of the corridor but their offices do not face each other. The offices of C and D face each other. E does not have a corner office. F's office is further down the corridor than A's, but on the same side.

14. If E sits in his office and faces the corridor, whose office is to his left?
 (a) A (b) B
 (c) C (d) D
15. Whose office faces A's office?
 (a) A (b) C
 (c) D (d) E
16. Who is/are F's neighbour(s)?
 (a) A only (b) A & B
 (c) C (d) B & C
17. D was heard telling someone to go further down the corridor to the last office on the right. To whose room was he trying to direct that person?
 (a) A (b) B
 (c) C (d) F

Direction (Qs. 18 to 22)

A, B, C, D, E, F and G are travelling in three different vehicles. There are at least two passengers in each vehicle—Maruti, Santro, Opel—and only one of them is a male. There are two engineers, two doctors and three teachers among them.

- (i) C is lady doctor and she does not travel with the pair of sisters, A and F
 (ii) B, a male engineer, travels with only G, a teacher in Maruti
 (iii) D is a male doctor
 (iv) Two persons belonging to the same profession do not travel in the same vehicle.
 (v) A is not an engineer and travels in Santro.
18. What is F's profession?
 (a) Engineer (b) Doctor
 (c) Teacher (d) Data inadequate
19. In which vehicle does C travel?
 (a) Maruti (b) Santro
 (c) Opel (d) Data inadequate
20. Which of the following represents the three teachers?
 (a) GEF (b) GEA
 (c) GBF (d) Data inadequate
21. How many lady members are there among them?
 (a) Three (b) Four
 (c) Three of four (d) Data inadequate
22. Which of the following is not correct
 (a) E-Male-Teacher
 (b) B-Male-Engineer
 (c) A-Female-Teacher
 (d) All are correct
- Direction (Qs. 23 to 27)
- Six friends A, B, C, D, E and F work in different companies namely—Pentasoftware, Quark, Raymond's Sunmet, Trump & Gates and Udipi, and each wears company-sponsored different coloured shirts, viz. Blue, Green, Pink, Yellow, Purple and Red though not necessarily in the same order.
- (i) The one wearing the Blue shirt works in Sunmet and the one wearing a Green shirt works in Pentasoftware.
 (ii) F does not work in Raymond's or Trump & Gates.
 (iii) A wears Pink shirt and works in Quark
 (iv) D does not work in Trump & Gates and Purple coloured shirt is not sponsored by Raymond's.
 (v) E works in Udipi and neither D nor B works in Sunmet
 (vi) Trump & Gates does not sponsor Purple or Yellow coloured shirts and C works in Pentasoftware.

23. Which colour shirt is sponsored by Raymond's?

- (a) Yellow
- (b) Blue
- (c) Pink
- (d) Cannot be determined

24. Which pair is correctly matched?

- (a) Red-Raymond's-A
- (b) Red-Trump & Gates-B
- (c) Green-Raymond's-C
- (d) None of these

25. Which of the following is true?

- (a) Udupi sponsors Green Shirt
- (b) D is working in Trump & Gates
- (c) E wears Red Shirt
- (d) Red shirt is sponsored by Trump & Gates

26. What is the sequence of companies representing A, B, C, D, E & F?

- (a) Quark, Pentasoft, Trump & Gates, Raymond's Udupi, Sunmet
- (b) Quark, Trump & Gates, Pentasoft, Raymond's Udupi, Sunmet
- (c) Quark, Pentasoft, Trump & Gates, Sunmet, Udupi, Raymond's
- (d) None of these

27. If Raymond's and Sunmet decide to interchange the colours of sponsored shirts, then which two persons had to interchange their shirt?

- (a) D & F
- (b) A & C
- (c) D & E
- (d) B & D

Direction (Qs. 28 to 30)

Five courses – A, B, C, D and E each of one month duration are to be taught from January to May one after the other though not necessarily in the same order by lecturers P, Q, R, S and T. P teaches course 'B' but not in the month of April or May. Q teaches course 'A' in the month of March. R teaches in the month of January but does not teach course 'C' or 'D'.

28. Which course is taught by S?

- (a) C
- (b) E
- (c) Either C or D
- (d) D

29. Which lecture's course immediately follows after course B?

- (a) Q
- (b) P
- (c) S
- (d) T

30. Which course is taught in the month of January?

- (a) C
- (b) D
- (c) E
- (d) Data inadequate

Direction (Qs. 31 to 34)

Rajeev planted some plants in his lawn but in a certain fixed pattern:

- (i) In most of the rows there are neither Rose nor Marigold
- (ii) There are two more row of Orchids than Tulips and two more rows of Rose than Orchids.
- (iii) There are four more rows of Rose than Tulips.
- (iv) There aren't as many rows of Lilly as Fireball.
- (v) There is one less Marigold row than Rose
- (vi) There is just one row of Tulips
- (vii) The maximum number of rows he planted is six.

31. How many rows of rose the planted?

- (a) Two
- (b) Five
- (c) Four
- (d) cannot be determined

32. Which of the above information is redundant and can be dispensed with?

- (a) (i)
- (b) (iii)
- (c) (i) and (iii) both
- (d) All are necessary

33. What is the sum of the rows of Orchids and Marigold he planted?

- (a) Three
- (b) Nine
- (c) Seven
- (d) Cannot be determined

34. How many rows of fireball did he plant

- (a) Two
- (b) Six
- (c) Two or Six
- (d) Data inadequate

Direction (Qs. 35 to 37)

- (i) Five friends, Amar, Kapil, Sarvesh, Rohan and Nagesh wear trousers of different colours– red, yellow, blue, white and green (not necessarily in the same order)
- (ii) Each one of them has different likings, viz, reading, playing travelling, singing and writting.
- (iii) Kapil, who has liking for singing does not wear yellow trousers. Sarvesh wears red trouser and does not like reading or writing. Nagesh likes to play and does not wear blue or Yellow trousers. Amar has liking for writing and Rohan does not wear yellow or green trousers.

35. What is the colour of Kapil trousers?
- (a) White (b) Blue
(c) Green (d) Data inadequate

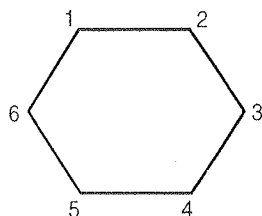
36. What is the liking of Sarvesh?
- (a) Writing (b) Travelling
(c) Reading (d) Data inadequate

37. Which of the following combinations of person-colour-liking is correct?
- (a) Rohan-Blue-Reading
(b) Nagesh-White-Playing
(c) Amar-Yellow-Writing
(d) None of these

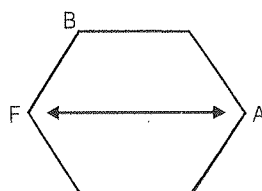
Solutions

Solution (1 to 3)

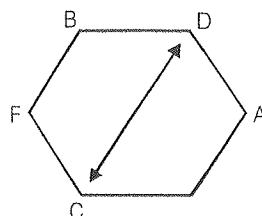
Construct the following figure:



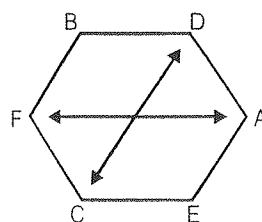
- From the second statement it is clear that F and A are sitting opposite to each other and F is to the immediate right of B. The sitting arrangement can be like this



- From the third statement it is clear that D is sitting between A and B and is opposite to C. The sitting arrangement can be like this



- There is only one vacant position for E, so the overall sitting arrangement will be like this



1. (a)
2. (a)
3. (a)

Solution (4 to 8)

We will start solving this problem from the last line. D ate 3 laddoos.

Before D ate the laddoos there should be $3 \times 4 = 12$ laddoos.

Before C ate the laddoos there should be $12 \times 3 + 12 = 48$ laddoos.

Before B ate the laddoos, there should be $24 \times 2 + 48 = 96$ laddoos. Before A ate laddos, these should be

$$\frac{96 \times 4}{3} = 128 \text{ laddoos}$$

At the Beginning 128 laddoos

	A	B	C	D	Remaining
A's share	32				96
B's share	24	24			48
C's share	12	12	12		12
D's share	3	3	3	3	0
	71	39	15	3	

Now we can answer all the question very easily.

4. (b)
5. (c)
6. (c)
7. (a)
8. (a)

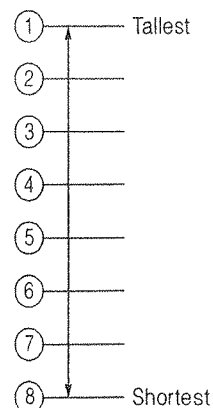
Solution 9 to 13

We will read each statement one by one and start coding accordingly.

- Three of them play cricket and table tennis each and two of them play football.

3Cr 3TT 2Fb

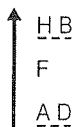
Each of them has a different height



- The tallest does not play football and the shortest does not play cricket.

(1) ~~Fb~~ (8) ~~Cr~~

- F is taller than A and D but shorter than H and B. The arrangement can be like this



Note: Here the heights of H & B and A & D are not given.

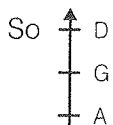
E does not play cricket

E → ~~Cr~~

and is taller than B and also second to the tallest

So E's position is (2)

G is shorter than D but taller than A



- H is fourth from the top so its position is

H → (4)

H plays TT with D so

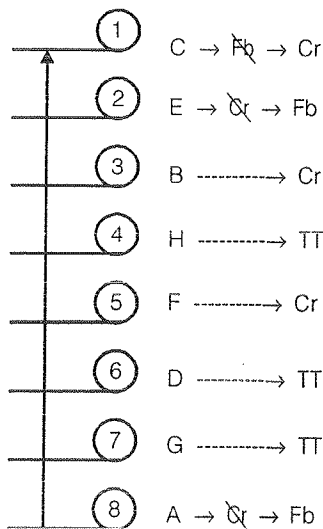
H → TT

D → TT

- G does not play either cricket or football so G will play table tennis

G → TT

Now overall arrangements will be like this



9. (c)

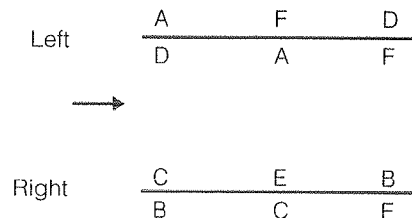
10. (c)

11. (b)

12. (a)

13. (b)

Solution (14 to 17)



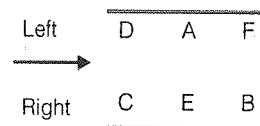
From the last sentence, we get that F is also on the left side, So E will be on the right side. D will be on the left side

E does not have a corner office so E must be in the middle.

E and F do not face each other and F's office is further down the corridor, so F occupies the last office on the left side.

Office of C and D face each other, so C will have first office on the right side and D will have the first office on the left side.

Final office arrangement will be like this



14. (c)

15. (d)

16. (a)

Since there is a corridor between office of F & B so A is the only neighbour of F.

17. (b)

Solution (18 to 22)

There are three vehicles

Maruti, Santro & Opel

There are two engineers, two doctors and three teachers among them

So 2 Engg. 2 Doc 3 Tea

- C is lady doctor and does not travel with the pair of sisters, A & F

C → Doc

C → ~~A~~ ~~F~~

- B is a male engineer and travels only with G a teacher in Maruti,
so G must be female also
 $G \rightarrow \text{Tea}$
 $B \rightarrow \text{Engg.}$
 $B \text{ } G \text{ } \rightarrow \text{Maruti}$
- D is male doctor
 $D \rightarrow \text{Doc}$
- A is not an engineer and travels in Santro so
 $A \text{ } E \rightarrow \text{Santro}$
Obviously C is travelling in Opel.
C and D are doctors and can't travel in same vehicle
so D must travel in Santro. Now we will get following table.

Vehicle	Person	Profession
Maruti	B	Engg.
	<u>G</u>	Tea.
Santro	<u>A</u>	Tea.
	E	Engg.
	D	Doc.
Opel	<u>C</u>	Doc.
	E	Tea.

18. (a)

19. (c)

20. (b)

21. (b)

22. (d)

Solution (23 to 27)

These questions can be solved easily by tabular chart.

Friends Companies	A	B	C	D	E	F
Pentasoft						
Quark						
Raymonds						
Sunmet						
T & G						
Udupi						

Colour Companies	Blue	Green	Pink	Yellow	Purple	Red
Pentasoft						
Quark						
Raymonds						
Sunmet						
T & G						
Udupi						

We will start reading each conditions and mark a '✓' sign or 'x' sign accordingly.

From the condition (i) we get following tables.

Friends Companies	A	B	C	D	E	F
Pentasoft						
Quark						
Raymonds						
Sunmet						
T & G						
Udupi						

Colour Companies	Blue	Green	Pink	Yellow	Purple	Red
Pentasoft	x	✓	x	x	x	x
Quark	x	x				
Raymonds	x	x				
Sunmet	✓	x	x	x	x	x
T & G	x	x				
Udupi	x	x				

Further applying condition (ii) we get following tables.

Companies \ Friends	A	B	C	D	E	F
Pentasoft						
Quark						
Raymonds						x
Sunmet						
T & G						x
Udupi						

Companies \ Colour	Blue	Green	Pink	Yellow	Purple	Red
Pentasoft	x	✓	x	x	x	x
Quark	x	x				
Raymonds	x	x				
Sunmet	✓	x	x	x	x	x
T & G	x	x				
Udupi	x	x				

Applying condition (iii) we get following tables.

Companies \ Friends	A	B	C	D	E	F
Pentasoft	x	x				
Quark	✓	x	x	x	x	x
Raymonds	x					x
Sunmet	x					
T & G	x					x
Udupi	x					

Companies \ Colour	Blue	Green	Pink	Yellow	Purple	Red
Pentasoft	x	✓	x	x	x	x
Quark	x	x	✓	x	x	x
Raymonds	x	x	x			
Sunmet	✓	x	x	x	x	x
T & G	x	x	x			
Udupi	x	x	x			

Further applying condition (iv) we get following tables.

Companies \ Friends	A	B	C	D	E	F
Pentasoft	x	x				
Quark	✓	x	x	x	x	x
Raymonds	x					x
Sunmet	x					
T & G	x			x		x
Udupi	x					

Companies \ Colour	Blue	Green	Pink	Yellow	Purple	Red
Pentasoft	x	✓	x	x	x	x
Quark	x	x	✓	x	x	x
Raymonds	x	x	x		x	
Sunmet	✓	x	x	x	x	x
T & G	x	x	x			
Udupi	x	x	x			

Further applying condition (v) we get following tables.

Companies \ Friends	A	B	C	D	E	F
Pentasoft	x					
Quark	✓	x	x	x	x	x
Raymonds	x				x	x
Sunmet	x	x		x	x	
T & G	x			x	x	x
Udupi	x	x	x	x	✓	x

Companies \ Colour	Blue	Green	Pink	Yellow	Purple	Red
Pentasoft	x	✓	x	x	x	x
Quark	x	x	✓	x	x	x
Raymonds	x	x	x		x	
Sunmet	✓	x	x	x	x	x
T & G	x	x	x			
Udupi	x	x	x			

Further applying (vi) we get following tables.

Friends Companies	A	B	C	D	E	F
Pentasoftware	x	x	✓	x	x	x
Quark	✓	x	x	x	x	x
Raymonds	x		x		x	x
Sunmet	x	x	x	x	x	
T & G	x		x	x	x	x
Udupi	x	x	x	x	✓	x

Colour Companies	Blue	Green	Pink	Yellow	Purple	Red
Pentasoftware	x	✓	x	x	x	x
Quark	x	x	✓	x	x	x
Raymonds	x	x	x		x	
Sunmet	✓	x	x	x	x	x
T & G	x	x	x	x	x	
Udupi	x	x	x			

Now we will mark '✓' on the only left space and mark 'x' on the remaining spaces. Then the following table emerges.

Friends Companies	A	B	C	D	E	F
Pentasoftware	x	x	✓	x	x	x
Quark	✓	x	x	x	x	x
Raymonds	x	x	x	✓	x	x
Sunmet	x	x	x	x	x	✓
T & G	x	✓	x	x	x	x
Udupi	x	x	x	x	✓	x

Colour Companies	Blue	Green	Pink	Yellow	Purple	Red
Pentasoftware	x	✓	x	x	x	x
Quark	x	x	✓	x	x	x
Raymonds	x	x	x	✓	x	x
Sunmet	✓	x	x	x	x	x
T & G	x	x	x	x	x	✓
Udupi	x	x	x	x	✓	x

With the help of the above tables we can solve all the questions easily.

Note: After drawing table further modification can be done according to given conditions. There is no need to draw further tables. Tables drawn further is just to explain the steps in elaborate manner.

23. (a)

24. (b)

25. (d)

26. (b)

27. (a)

Solution (28 to 30)

We can be solved these questions with the help of tabular chart.

Months Courses	Jan	Feb	Mar	Apr	May
A					
B					
C					
D					
E					

Lecturers Courses	P	Q	R	S	T
A					
B					
C					
D					
E					

We will start reading each condition and mark '✓' sign or 'x' sign accordingly.

P teaches course B but not in the month of April or May

Courses \ Months	Jan	Feb	Mar	Apr	May
A					
B				x	x
C					
D					
E					

Courses \ Lecturers	P	Q	R	S	T
A	x				
B	✓	x	x	x	x
C	x				
D	x				
E	x				

Q teaches course A in the month of March

Courses \ Months	Jan	Feb	Mar	Apr	May
A	x	x	✓	x	x
B			x	x	x
C			x		
D			x		
E			x		

Courses \ Lecturers	P	Q	R	S	T
A	x	✓	x	x	x
B	✓	x	x	x	x
C	x	x			
D	x	x			
E	x	x			

R teaches in the month of January but does not teach course C or D.

Courses \ Months	Jan	Feb	Mar	Apr	May
A	x	x	✓	x	x
B	x	✓	x	x	x
C	x	x	x		
D	x	x	x		
E	✓	x	x	x	x

Courses \ Lecturers	P	Q	R	S	T
A	x	✓	x	x	x
B	✓	x	x	x	x
C	x	x	x		
D	x	x	x		
E	x	x	✓	x	x

Now, we can easily answer given questions with the help of above table.

Note: After drawing first table further modifications can be done according to conditions given. There is no need to draw further table. Further table drawn is just to explain the steps in elaborate manner.

Final table can be referred as.

28. (c)

29. (a)

30. (c)

Month	Subject	Teacher
January	E	R
February	B	P
March	A	Q
April	C/D	S/T
May	D/C	T/S

Solution (31 to 34)

$$\rightarrow O = T + 2$$

$$R = O + 2$$

Also

$$R = M + 1$$

When $T = 1, O = 3, R = 5, M = 4$

Since from (iv) There are not as many rows of lily as fireball

$\therefore$ Lily < Fireball

So, Lily = 2, Fireball = 6

Now we can answer all the question easily.

31. (b)

32. (c)

33. (c)

34. (b)

Solution (35 to 37)

These questions can be solved easily by drawing tabular chart.

Friends \ Colour	Red	Yellow	Blue	White	Green
Amar					
Kapil					
Sarvesh					
Rohan					
Nagesh					

Friends \ Liking	Read	Play	Travel	Sing	Write
Amar					
Kapil					
Sarvesh					
Rohan					
Nagesh					

We will start reading each condition and mark '✓' sign or '×' sign accordingly.

- Kapil, who has liking for singing does not wear yellow trouser.

Friends \ Colour	Red	Yellow	Blue	White	Green
Amar					
Kapil		×			
Sarvesh					
Rohan					
Nagesh					

Friends \ Liking	Read	Play	Travel	Sing	Write
Amar				×	
Kapil	×	×	×	✓	×
Sarvesh				×	
Rohan				×	
Nagesh				×	

- Sarvesh wears read trouser and does not like reading or writing.

Friends \ Colour	Red	Yellow	Blue	White	Green
Amar	×				
Kapil	×	×			
Sarvesh	✓	×	×	×	×
Rohan	×				
Nagesh	×				

Friends \ Liking	Read	Play	Travel	Sing	Write
Amar				×	
Kapil	×	×	×	✓	×
Sarvesh	×			×	×
Rohan				×	
Nagesh				×	

- Nagesh like to play and does not wear blue or yellow trousers.

Friends \ Colour	Red	Yellow	Blue	White	Green
Amar	x				
Kapil	x	x			
Sarvesh	✓	x	x	x	x
Rohan	x				
Nagesh	x	x	x		

Friends \ Liking	Read	Play	Travel	Sing	Write
Amar		x		x	
Kapil	x	x	x	✓	x
Sarvesh	x	x		x	x
Rohan		x		x	
Nagesh	x	✓	x	x	x

- Amar has liking for weiting and Rohan does not wear yellow or green trousers.

Friends \ Colour	Red	Yellow	Blue	White	Green
Amar	x	✓			
Kapil	x	x			
Sarvesh	✓	x	x	x	x
Rohan	x	x			x
Nagesh	x	x	x		

Friends \ Liking	Read	Play	Travel	Sing	Write
Amar	x	x	x	x	✓
Kapil	x	x	x	✓	x
Sarvesh	x	x	✓	x	x
Rohan	✓	x	x	x	x
Nagesh	x	✓	x	x	x

Now, we can easily answer given questions with the help of above table.

Note: After drawing first table further modifications can be done according to conditions given there is no need to draw further table. Further table drawn is just to explain the steps in elaborate manner.

35. (d)

36. (b)

37. (c)

