CH 2 ANALYTICAL REASONING

ANSWERS AND EXPLANATIONS

1-5: Here, the persons who travel are: A, B, C, D, E, F, and G. Stations are: Base station, #I, #II, #III, #IV, and #V. Let us proceed with the following information: (1), (4), (5), (6), (9), (8), and (10).

These information give us the following table:

Station	Get in	Get down
Base station	– – –	× × ×
# I		× × ×
# II	× × ×	
# III	Only G	B, D
# IV	A	Only E
# V	× × ×	A, G, C

Now, from clue (2), F gets down at # II. And he got in either at base station or at # I.

Now, since F got down at #II and he had got in with C, it implies that both C and F got in either at base station or at # I.

Again, since B and D get down at # III this implies that they too got in either at base station or at # I.

It is given that E got in with two other persons i.e., in a group of three persons. Obviously, **E got in at base station.**

Hence, once again the above information can be summarised as :

Station	Get in	Get down
Base station	E and (C, F) or (B, D)	× × ×
# I	(C,F) or (B, D)	× × ×
# II	× × ×	Only F
# III	Only G	B, D

# IV	A	Only E
# V	× × ×	A, G, C

1. (c) 2. (d) 3. (d) 4. (d) 5. (b)

6-10: Here the persons are P, Q, R, S, T, V and W and the vehicles are I, II and III. If there are at least two passengers in each vehicle and one of them is a male then, in the group there are at least three males.

Among them **R is a female** and she is a doctor. **p and v are also females.** From clue (ii) we get W is a teacher. And **q is a male** and ' he is an engineer. He travels with only W. This implies **W is a female.** And both of them travel in vehicle I.

From clue (iii), **S is a male** and he is a doctor. From clue (v), P is not an engineer (and she can 't be a doctor because there are only two doctors R and S). Hence, P is a teacher and she travels in vehicle II.

Now, see the bold parts. It says that there are four females R, P, V and W. Hence the remaining persons must be males because in each vehicle there is at least one male. Hence, **T is a male.** This implies that S and T will occupy seats in two different vehicles (II and III) because in vehicle I. Q travels with only W.

Again since, R can travel neither with S (see clue iv) nor with P and V (see clue i). Thus, we get their sitting arrangement as follows:

Vehicle	Person
I.	Q, W
II.	P, S, V
III.	T, R

Thus the obtained information can be summarised as below:

Person	Profession	Vehicle	Sex
Q	Engineer	I	Male
W	Teacher	I	Female
P	Teacher	II	Female
S	Doctor	II	Male
V	Engineer	II	Female
T	Teacher	III	Male
R	Doctor	III	Female

6.   (a) 7.   (c)   8.   (b) 9.   (d)

10.   (b)

(11-15):

Student's Name	Favourite subject							Rank in descending order of performance
	S	C	B	F	E	M	H	
P	×	×	×	×	×	×	✓	3
Q	×	×	×	×	✓	×	×	6
R	×	×	×	×	×	✓	×	2
S	×	×	✓	×	×	×	×	4
T	✓	×	×	×	×	×	×	7
V	×	×	×	✓	×	×	×	1
W	×	✓	×	×	×	×	×	5

S-Science, C-Chemistry, B-Biology, F-French, E-English, M-Mathematics, H-Hindi.

11. (b)   12. (a)   13. (e)   14. (d)   15. (c)

16. (d) As W is to be placed immediately to the left of X, we cannot place X in window 1.

17. (b) Clearly, W must be placed in window no. 2 as dictated by the restrictions.

18. (d) If U is placed in window no. 5, then Y will placed in window 6.

19-21   Clearly, C joined as an officer. Since, B joined on neither Wednesday nor Friday. Therefore, B joined on Saturday and A joined on Friday. These information can be summerized as follows :

Person	Post	Day
F	Manager	Monday
B	Supervisor	Saturday
D	Technician	Thursday
C	Officer	Wednesday
E	Clerk	Tuesday
A	Sales Executive	Friday

19. (b)   20.(d)
21.(d)

22-25. Total Number of flats = 13;   Unoccupied flats = 5

Occupied flats = 8

Number of flats on second floor = 4

Second floor comprises four flats. One occupant is lawyer and since he has only one neighbour, this implies that out of four flats on second floor, two are unoccupied.

Again, since no flat is unoccupied on the third floor, it implies that there are three unoccupied flats on floor IV.

Since there are at least three flats on any floor and no two same profession stay on any floor and the doctor is not the neighbour of any lawyer, then floor III comprises only three flats. Thus, floor IV comprises six flats (3 occupied + 3 unoccupied).

Since there are three managers and no two same profession stay on any floor, therefore, there will be a manager in each floor. Also there are only two occupant in second floor and one of them is lawyer, therefore, second occupant should be manager.

Again, since there are two teachers, there will be a teacher each on floors III and IV. Again, doctor can't be neighbour of a lawyer. Hence, the doctor and lawyer will not reside on same floor. Therefore, on floor III – either Doctor or Lawyer then,

on floor IV – either Lawyer or Doctor.

Floor	Total Flats	Occupied flats	Unoccupied flats	Occupants
II	4	2	2	Lawyer,Manager
III	3	3	0	Teacher, Manager,Lawyer or Doctor
IV	6	3	3	Teacher, Manager,Doctor or Lawyer

22. (d) Clearly, there are three flats.

23. (a) From above table that combination is Lawyer & Manager.

24. (c) Both the manager and the teacher are the neighbour of other lawyer.

25. (b) There are three flats occupied.

26-28.

	Discipline					Musical Instrument				
Name	Med	Eng	Ar	Art	Mg	Sit	Tab	Sar	Gui	Viol
Neeraj	×	—	×	×	—	×	×	✓	×	×
Yash	×	—	×	×	—	—	×	×	—	×
Mehul	✓	×	×	×	×	×	×	×	×	✓
Ram	×	×	×	✓	×	×	✓	×	×	×
Prakash	×	×	✓	×	×	—	×	×	—	×

26. (b)

27. (c) Guitarist is either Yash or Prakash. Therefore discipline may be Engineering or Architecture or Management.

28. (c)

29-32.

As History is not taught on Monday or Thursday, it must be taught on Friday. Since it is given that at least one subject is taught every day, this helps to match Hindi — Thursday.

As D teaches only one subject (Psychology) and Geography is not taught by E or B and from the information: No person teaches two subjects on the same day, it is clear that C teaches Geography (since A teaches English on Monday).

Hence, the above information can be summerized in table as follows –

Subject	Person	Day
Sociology	B	Wednesday
History	E	**Friday**
English	A	Monday
Geography	C	Monday
Economics	B/E/A/C	Tuesday
Psychology	D	Tuesday

From above table.

29. (a) C teaches Geography.

30. (c) History taught on Friday.

31. (d) From given dates it is not clear.

32. (d) Hindi is taught on Thursday.

33. (a) Either C or G has to be first and D has to come before E. Hence, E cannot, finish second.

34. (c) F finishes second when D finishes third. Thus F finishes ahead of E. Therefore, option (c) is correct.

35. (c) In the event of C finishing first, G finishes last and we will have the following three possible ordering of finishes.

CFDEG, CDEFG and CDFEG.

36. (c) When F finishes ahead of D, than F will definitely finish at the second place.

37. (d) When there is exactly one golfer between C and D, then E finishes at the fourth place.

38-42. The given information is summarised in a table as follows:

	Subjects	
Teachers	Compulsory	Optional
A	History	English
B	History	Chemistry
C	History	Mathematics
D (Female)	English	History
E	Physics	Mathematics
F	Mathematics	Physics

38. (a) History is the compulsory subject of C.

39. (d) D is a female member in the group.

40. (d) The compulsory subject of F (Mathematics) is the optional subject of C.

41. (c) E has physics and Mathematics as his two subjects.

42. (d) A, B and C all have History as the compulsory subjects.

43-47.

	Dramatics	Computer Sec.	Physics	History	Mathematics
Madhu	✓	✓	✓		
Shobha	✓	✓		✓	
Anjali		✓	✓	✓	✓
Poonam	✓		✓	✓	
Nisha			✓	✓	✓

43. (c) Shobha

44. (c) Madhu

45. (a) Poonam

46. (d) Anjali

47. (c) Nisha

48-52.

We prepare a table from the given data as under :

	Maths	Geography	History	Political Sc.	Bio
A	✔	x	✔	✔	x
B	✔	✔	x	✔	x
C	✔	✔	✔	x	x
D	x	✔	x	✔	✔
E	x	x	✔	✔	✔

48. (b) Clearly, from the table D is intelligent in Political Science, Geography and Biology.

49. (b) B is intelligent in Mathematics, Political Science and Geography.

50. (c) A is intelligent in Mathematics and History but not in Geography.

51. (d) C is intelligent in Mathematics, History and Geography.

52. (d) E is intelligent in Political Science, History and biology.

53-55. The given information can be analyzed as under :

	Hockey	Volleyball	Baseball	Cricket	Football
Ravi	✔	✔	✔		
Kunal	✔	✔		✔	
Sachin	✔		✔		✔
Gaurav		✔		✔	✔
		✔			
Michael			✔		✔

53. (b) Kunal is good in Hockey, Cricket and Volleyball.

54. (c) Gaurav is good in Baseball, Cricket, Volleyball and Football.

55. (c) Ravi is good in Baseball, Volleyball and Hockey.

54-60:

On the basis of the given clues we ge the following information:

Car Persons travelling in car

P F (–),   D (–)

Q B (+),   E (+)

R A (–),   ? (–)

Besides this, we also came to know C is a female but still we do not know about the sex of G. But it is given that there is at least one female in each car. The above table shows that the car Q needs a female to fulfil the condition described above. Hence, the seventh person is a female, i.e., G is a female. But still we do not know among the cars Q and R, in which car C and G are. But it is clear that both are not in the same car. Let us proceed to draw family tree.

$$E(+) \Leftrightarrow F(-)$$
$$B(+) \Leftrightarrow A(-)$$
$$C(-) \quad D(-)$$
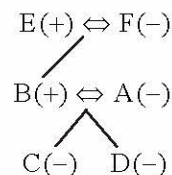
Since, C does not travel with her grandfather and grandmother, C is not in the car P and in Q. Hence, **C is in the car R and G is in the car Q.** Still we are not aware of G's position in the family tree.

56. (c)   57. (c)   58. (b)   59. (c)   60. (d)