

Data Interpretation for CAT

Question 1: Six friends, A through F, bought shares of six companies, P to U on a particular day, say Day 1. Each friend bought shares of at least one of these companies and no friend had any share of any company before that day. On the very next day, say Day 2, all of them sold all the shares that they had bought on Day 1. Shares are always bought or sold on their respective market values. The market values (in ₹) of 1 share of each of the companies, P through U, in that order, were 1200, 1400, 1000, 1500, 1300, and 900 on Day 1. On Day 2, the market values (in ₹) of 1 share of each of the companies were 900, 1500, 1300, 1000, 1200, and 1400 respectively. Further, it was also known that:

- (i) No friend paid any additional charge (brokerage, etc.) in buying or selling shares.
- (ii) Each friend bought a different number of shares and no one of them bought more than 6 shares.
- (iii) No two friends bought shares of the same company.
- (iv) All the questions below are pertaining to the transactions and the period mentioned above.
 - a. If the six friends together suffered a loss of ₹ 3500 then how many shares of company R were bought by any of the friends?
 - A) 3
 - B) 4
 - C) 2
 - D) 6
 - b. Which of the following outcomes is not possible for the six friends?
 - A) They together suffered a loss of Rs 700
 - B) They together gained a profit of Rs 900
 - C) They together gained a profit of Rs 3500
 - D) They together neither suffered any loss nor gained any profit
 - c. If D earned a profit of ₹ 1500 and B suffered a loss ₹ 900 then which of the following can be true?
 - A) A suffered a loss of Rs 300
 - B) C earned a profit of Rs 2500
 - C) F suffered a loss of Rs 1800
 - D) None of the above

Solutions:

a)

From the given point (ii) we can find out the maximum profit/loss by all the friends together. For maximum profit, we can assign a maximum no. of shares to the company giving maximum return, and likewise, we can assign the shares to every company.

For maximum loss, we can assign a maximum no. of shares to the company giving minimum return, and likewise, we can assign the shares to every company.

	P	Q	R	S	T	U
Day 1	1200	1400	1000	1500	1300	900
Day 2	900	1500	1300	1000	1200	1400

Profit/Loss on One Share	-300	100	300	-500	-100	500
No. of Shares for Maximum Profit	2	4	5	1	3	6
No of shares for Maximum Loss	5	3	2	6	4	1

Maximum Profit: $(-300*2) + (100*4) + (300*5) + (-500*1) + (-100*3) + (500*6) = 3500$

Maximum Loss: $(-300*5) + (100*3) + (300*2) + (-500*6) + (-100*4) + (500*1) = 3500$

Therefore if six friends together face a loss of 3500 then the number of shares of company R bought by any of the friends are 2.

The correct answer is option C.

b) From the given point (ii) we can find out the maximum profit/loss by all the friends together. For maximum profit, we can assign a maximum no. of shares to the company giving maximum return, and likewise, we can assign the shares to every company.

For maximum loss, we can assign a maximum no. of shares to the company giving minimum return, and likewise, we can assign the shares to every company.

	P	Q	R	S	T	U
Day 1	1200	1400	1000	1500	1300	900
Day 2	900	1500	1300	1000	1200	1400
Profit/Loss on One Share	-300	100	300	-500	-100	500
No. of Shares for Maximum Profit	2	4	5	1	3	6
No of shares for Maximum Loss	5	3	2	6	4	1

Maximum Profit: $(-300*2) + (100*4) + (300*5) + (-500*1) + (-100*3) + (500*6) = 3500$

Maximum Loss: $(-300*5) + (100*3) + (300*2) + (-500*6) + (-100*4) + (500*1) = 3500$

Since the condition (ii) and (iii) prohibits the purchase of same number of shares by two persons and there are only 3 values with both the positive and negative numbers therefore in this case it is not possible that six friends together neither suffer any loss nor gain any profit. We can also verify it by using the elimination method:

One of the ways in which Option 1 is possible is:

	P	Q	R	S	T	U
Profit/Loss on One Share	-300	100	300	-500	-100	500
No. of shares Purchased	6	2	5	4	1	3

One of the ways in which Option 2 is possible is:

	P	Q	R	S	T	U
Profit/Loss on One Share	-300	100	300	-500	-100	500
No. of shares Purchased	3	6	4	1	5	2

Option C is the maximum profit they can make together is 3500 as proved in the Common. Hence, the correct option is D.

c) From the given point (ii) we can find out the maximum profit/loss by all the friends together. For maximum profit, we can assign a maximum no. of shares to the company giving maximum return, and likewise, we can assign the shares to every company. For maximum loss, we can assign a maximum no. of shares to the company giving minimum return, and likewise, we can assign the shares to every company.

	P	Q	R	S	T	U
Day 1	1200	1400	1000	1500	1300	900
Day 2	900	1500	1300	1000	1200	1400
Profit/Loss on One Share	-300	100	300	-500	-100	500
No. of Shares for Maximum Profit	2	4	5	1	3	6
No of shares for Maximum Loss	5	3	2	6	4	1

Maximum Profit: $(-300 \times 2) + (100 \times 4) + (300 \times 5) + (-500 \times 1) + (-100 \times 3) + (500 \times 6) = 3500$

Maximum Loss: $(-300 \times 5) + (100 \times 3) + (300 \times 2) + (-500 \times 6) + (-100 \times 4) + (500 \times 1) = 3500$

	P	Q	R	S	T	U
Day 1	1200	1400	1000	1500	1300	900
Day 2	900	1500	1300	1000	1200	1400
Profit/Loss on One Share	-300	100	300	-500	-100	500

In the above generated table B can suffer a loss of Rs.900 only when he purchases 3 shares of company P. On the other hand, D can only earn a profit of Rs.1500 when it either purchases 3 shares of company U or 5 shares of company R. Since, 3 shares have already been purchased

by B and according to the given condition (ii) we can say that D purchased 5 shares of company R.

On the basis of the elimination method,

- Option 1 is not possible as one can suffer a loss of Rs.300 only when it buys 3 shares of company T but according to condition (ii), it is not possible.
- Option 2 is not possible as one can earn a profit of Rs.2500 only when it buys 5 shares of company U but according to condition (ii), it is not possible.
- Option 3 is not possible as one can suffer a loss of Rs.1800 only when it buys 6 shares of company P but according to condition (iii), it is not possible.

Therefore, the option None of the above is correct.

Answer: The correct answer is option D.

Question 2: These questions are based on the data given below.

In a recently held test series consisting of three matches-I, II, and III, five players- Sehwag, Ganguly, Tendulkar, Dravid, and Laxman are the top five scoring batsmen, not necessarily in the same order.

- No two players scored the same number of runs in any match
 - Sehwag scored more runs than Ganguly in the 1st and 2nd matches.
 - The player who scored the highest runs in the 3rd match scored the least runs in the 1st match.
 - Dravid scored more runs than Laxman but fewer runs than Tendulkar in the 2nd Match. Tendulkar scored more runs than Laxman in the 1st match. Laxman scored more runs than Ganguly but less than Dravid in the 3rd match.
 - Tendulkar scored the lowest runs in one match and his rank continuously declined from the first match to the third match. He was not the top scorer in any of the three matches.
- Among the given five players, who scored the least number of runs in the 2nd match?
 - Sehwag
 - Ganguly
 - Laxman
 - Cannot be determined
 - Who is the second-highest scorer in the 1st match?
 - Sehwag
 - Laxman
 - David
 - None Of These

Solution:

a) Let us make a table as per the data given in the question:

Rank 1	1	2	3	4	5
I	Sh	ST	G/L	L/G	D
II	Sh	G	ST	D	L

III	D				ST
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Sh: Sehwag; G: Ganguly; ST; Sachi Tendulkar; L: Laxman; D: David

From the table we are clear that Laxman scored the least number of runs in the 2nd match.

b) Let us make a table as per the data given in the question:

Rank 1	1	2	3	4	5
I	Sh	ST	L/G	G/L	D
II	Sh	G	ST	D	L
III	D			S	ST

Sh: Sehwag; G: Ganguly; ST; Sachi Tendulkar; L: Laxman; D: David

From the table we can say that Tendulkar is the second-highest scorer in the 1st match