

CAT Data Interpretation & Logical Reasoning

Sample Paper – 12

Duration: 40 Minutes

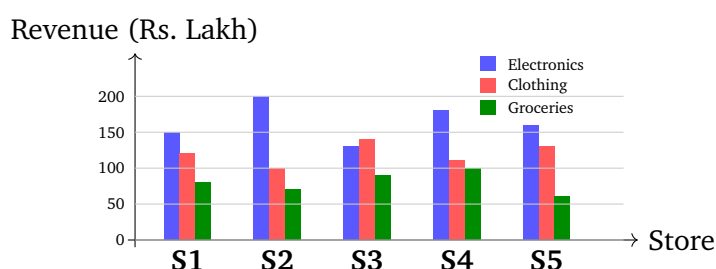
Maximum Marks: 60

Instructions

- This paper contains **20 questions** across **4 sets** (2 Data Interpretation + 2 Logical Reasoning), modelled on the DILR section of **CAT**.
- Each correct answer carries **+3 marks**. There is a penalty of **–1 mark per wrong answer**; **0 marks** for unattempted questions.
- All 20 questions are single-correct MCQ. Maximum Marks: **60**.
- **No personal calculators** are permitted; a basic on-screen calculator is provided in the actual CAT exam.
- **Rough sheets** are provided at the test centre. Each set has a common data/scenario; read it carefully before attempting the questions.

Set A: Data Interpretation — Retail Store Performance (Q1 – Q5)

The grouped bar chart below shows the **revenue** (in Rs. Lakh) of **5 stores** across **3 product lines** — Electronics, Clothing, and Groceries.



Q1. Which store had the **highest total revenue** across all three product lines?

- (A) S2 (Rs. 370 Lakh)
(B) S3 (Rs. 360 Lakh)



(C) S4 (Rs. 390 Lakh)

(D) S5 (Rs. 350 Lakh)

Q2. What is the **total Groceries revenue** across all five stores?

(A) Rs. 350 Lakh

(B) Rs. 370 Lakh

(C) Rs. 390 Lakh

(D) Rs. 400 Lakh

Q3. Which store had the **highest Electronics revenue**?

(A) S2 (Rs. 200 Lakh)

(B) S4 (Rs. 180 Lakh)

(C) S1 (Rs. 150 Lakh)

(D) S5 (Rs. 160 Lakh)

Q4. Which **product line** had the highest **total revenue** across all five stores?

(A) Groceries (Rs. 400 Lakh)

(B) Electronics (Rs. 820 Lakh)

(C) Clothing (Rs. 600 Lakh)

(D) All product lines had equal revenue

Q5. What was the **total revenue** of Store **S3** across all product lines?

(A) Rs. 340 Lakh

(B) Rs. 350 Lakh

(C) Rs. 360 Lakh

(D) Rs. 370 Lakh

Set B: Data Interpretation — Annual Water Consumption (Q6 – Q10)



The table below shows the **annual water consumption** (in Billion Litres, BL) of five cities, split between Industrial and Domestic use.

City	Industrial (BL)	Domestic (BL)	Total (BL)
City A	120	80	200
City B	90	110	200
City C	150	100	250
City D	80	120	200
City E	60	90	150
Total	500	500	1000

Q6. Which city had the **highest total water consumption**?

- (A) City A (200 BL)
- (B) City B (200 BL)
- (C) City D (200 BL)
- (D) City C (250 BL)

Q7. In how many cities did **Domestic consumption exceed Industrial consumption**?

- (A) 3 (City B, City D, City E)
- (B) 2
- (C) 4
- (D) 1

Q8. What is the **combined total water consumption** of City A and City E?

- (A) 300 BL
- (B) 350 BL
- (C) 380 BL
- (D) 400 BL

Q9. What **percentage** of the total water consumption (1000 BL) comes from **Industrial use**?



- (A) 40%
- (B) 45%
- (C) 50%
- (D) 55%

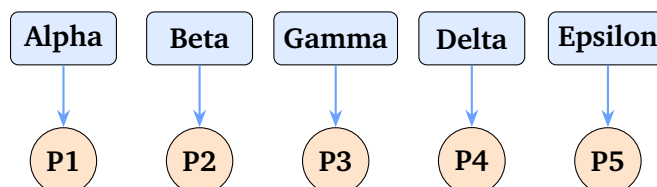
Q10. What is the **ratio of Industrial to Domestic consumption** in City C?

- (A) 1:1
- (B) 4:3
- (C) 2:1
- (D) 3:2

**Set C: Logical Reasoning — Project
Assignment Puzzle (Q11 – Q15)**

Five projects — P1, P2, P3, P4, P5 — are each assigned to exactly one of five teams: Alpha, Beta, Gamma, Delta, Epsilon (one project per team). The following conditions apply:

- (i) Alpha is assigned either P1 or P3, but **NOT P3**.
- (ii) Beta is assigned **P2**.
- (iii) Gamma is **NOT** assigned P4 or P5.
- (iv) Delta is assigned **P4**.
- (v) If Alpha is assigned P1, then Gamma is assigned **P3**.
- (vi) Alpha is **not** assigned P3.



Q11. Based on the conditions above, which team is assigned **Project P3**?

- (A) Gamma
- (B) Alpha



- (C) Epsilon
- (D) Beta

Q12. Which project is assigned to **Epsilon**?

- (A) P1
- (B) P5
- (C) P3
- (D) P4

Q13. What is **Alpha's** assigned project?

- (A) P2
- (B) P3
- (C) P1
- (D) P5

Q14. Which team is assigned **Project P4**?

- (A) Alpha
- (B) Gamma
- (C) Epsilon
- (D) Delta

Q15. If Gamma and Epsilon **swap their projects**, which team would then handle **P3**?

- (A) Epsilon
- (B) Gamma
- (C) Alpha
- (D) Beta



**Set D: Logical Reasoning —
Books on a Shelf (Q16 – Q20)**

Seven books — Math (M), Physics (Ph), Chemistry (Ch), Biology (B), English (En), History (Hi), Geography (G) — are arranged on a shelf in positions **1 to 7** from left to right (one book per position). The following conditions apply:

- (i) Math is at **position 1**.
- (ii) Physics is at **position 3** (one book between Math and Physics).
- (iii) Chemistry is **immediately to the right of Physics**.
- (iv) Biology is at **position 7**.
- (v) History is at **position 6**.
- (vi) English is at **position 5**.

Math Pos 1	? Pos 2	Physics Pos 3	Chem. Pos 4	English Pos 5	History Pos 6	Biology Pos 7
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Q16. Which book is at **position 2**?

- (A) Physics
- (B) Geography
- (C) English
- (D) History

Q17. Which **position** is History at?

- (A) 4
- (B) 5
- (C) 6
- (D) 7

Q18. How many books are **between** Math (position 1) and Chemistry (position 4)?



- (A) 0
- (B) 1
- (C) 3
- (D) 2

Q19. Which book is **immediately to the right** of Physics (position 3)?

- (A) Chemistry
- (B) English
- (C) Geography
- (D) History

Q20. Which book occupies the **rightmost position** (position 7)?

- (A) History
- (B) Biology
- (C) English
- (D) Geography



Detailed Solutions**Sol. 1.****Solution**

Concept — Row Summation and Maximum: Add Electronics, Clothing, and Groceries revenue for each store; identify the largest total.

Step 1 — Calculate total revenue for each store:

- S1: $150 + 120 + 80 = 350$ Lakh
- S2: $200 + 100 + 70 = 370$ Lakh
- S3: $130 + 140 + 90 = 360$ Lakh
- S4: $180 + 110 + 100 = 390$ Lakh
- S5: $160 + 130 + 60 = 350$ Lakh

Step 2 — Identify the highest total: $390 > 370 > 360 > 350 = 350$. Store S4 has the highest total revenue.

Why other options are wrong:

- Option A: S2 (Rs. 370 Lakh) — second highest, less than S4's 390.
- Option B: S3 (Rs. 360 Lakh) — third highest among the five stores.
- Option D: S5 (Rs. 350 Lakh) — tied for lowest total, well below S4.

Final Answer: S4 had the highest total revenue (Rs. 390 Lakh) $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 1](#)

Sol. 2.**Solution**

Concept — Column Summation: Add the Groceries revenue for all five stores.

Step 1 — Identify Groceries revenue for each store: S1 = 80, S2 = 70, S3 = 90, S4 = 100, S5 = 60.

Step 2 — Sum all values: $80 + 70 + 90 + 100 + 60 = 400$ Lakh.

Why other options are wrong:

- Option A: Rs. 350 Lakh — under-counts; omits or misreads S4 Groceries (100).



- Option B: Rs. 370 Lakh — under-counts by 30; arithmetic error in summing.
- Option C: Rs. 390 Lakh — under-counts by 10; likely misreads one store value.

Final Answer: Total Groceries revenue = 400 Lakh $\Rightarrow$ D

Answer: (D) [Go Back to Q 2](#)

Sol. 3.

Solution

Concept — Comparing Values in a Single Category: Read the Electronics revenue for each store and identify the maximum.

Step 1 — Electronics revenue per store: S1 = 150, S2 = 200, S3 = 130, S4 = 180, S5 = 160.

Step 2 — Identify the highest: $200 > 180 > 160 > 150 > 130$. S2 has the highest Electronics revenue.

Why other options are wrong:

- Option B: S4 (180 Lakh) — second highest in Electronics, less than S2's 200.
- Option C: S1 (150 Lakh) — fourth highest in Electronics.
- Option D: S5 (160 Lakh) — third highest in Electronics.

Final Answer: S2 had the highest Electronics revenue (Rs. 200 Lakh) $\Rightarrow$ A

Answer: (A) [Go Back to Q 3](#)

Sol. 4.

Solution

Concept — Column Totals Comparison: Sum each product line across all five stores, then compare.

Step 1 — Calculate total revenue per product line:

- Electronics: $150 + 200 + 130 + 180 + 160 = 820$ Lakh
- Clothing: $120 + 100 + 140 + 110 + 130 = 600$ Lakh
- Groceries: $80 + 70 + 90 + 100 + 60 = 400$ Lakh



Step 2 — Compare and identify the highest: $820 > 600 > 400$. Electronics had the highest total revenue.

Why other options are wrong:

- Option A: Groceries (400 Lakh) — the lowest total among the three product lines.
- Option C: Clothing (600 Lakh) — second highest; significantly less than Electronics.
- Option D: All equal — the three totals (820, 600, 400) are clearly different.

Final Answer: Electronics had the highest total revenue (Rs. 820 Lakh) $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 4](#)

Sol. 5.

Solution

Concept — Row Summation: Add all three product line revenues for Store S3.

Step 1 — Identify S3's revenue for each product line: Electronics = 130, Clothing = 140, Groceries = 90.

Step 2 — Sum the values: $130 + 140 + 90 = 360$ Lakh.

Why other options are wrong:

- Option A: Rs. 340 Lakh — under-counts by 20; likely misreads Clothing as 120 instead of 140.
- Option B: Rs. 350 Lakh — under-counts by 10; small arithmetic error.
- Option D: Rs. 370 Lakh — over-counts by 10; perhaps adds an extra 10 to one category.

Final Answer: Store S3's total revenue = 360 Lakh $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 5](#)



Sol. 6.

Solution

Concept — Identifying the Maximum in a Column: Compare the Total (BL) column for all five cities.

Step 1 — Read total consumption for each city:

- City A: 200 BL
- City B: 200 BL
- City C: 250 BL
- City D: 200 BL
- City E: 150 BL

Step 2 — Identify the highest: $250 > 200 = 200 = 200 > 150$. City C has the highest total water consumption.

Why other options are wrong:

- Option A: City A (200 BL) — equal to Cities B and D, but less than City C.
- Option B: City B (200 BL) — same total as Cities A and D, below City C.
- Option C: City D (200 BL) — tied at 200 BL, still 50 BL less than City C.

Final Answer: City C had the highest total consumption (250 BL) $\Rightarrow$ D

Answer: (D) [Go Back to Q 6](#)

Sol. 7.

Solution

Concept — Pairwise Comparison: Check whether Domestic $>$ Industrial for each city.

Step 1 — Compare Domestic vs. Industrial for each city:

- City A: Domestic 80 vs. Industrial 120 $\Rightarrow$ Industrial $>$ Domestic. No.
- City B: Domestic 110 vs. Industrial 90 $\Rightarrow$ Domestic $>$ Industrial. **Yes.**
- City C: Domestic 100 vs. Industrial 150 $\Rightarrow$ Industrial $>$ Domestic. No.
- City D: Domestic 120 vs. Industrial 80 $\Rightarrow$ Domestic $>$ Industrial. **Yes.**
- City E: Domestic 90 vs. Industrial 60 $\Rightarrow$ Domestic $>$ Industrial. **Yes.**

Step 2 — Count: Cities B, D, and E: **3 cities** where Domestic exceeds Industrial.



Why other options are wrong:

- Option B: 2 — misses one city (perhaps overlooks City E).
- Option C: 4 — incorrectly counts City C or City A as having higher Domestic use.
- Option D: 1 — significant undercount; only recognizes one of the three cities.

Final Answer: Domestic exceeded Industrial in 3 cities (B, D, E) $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 7](#)

Sol. 8.

Solution

Concept — Simple Addition: Add the total consumption of City A and City E.

Step 1 — Read total consumption: City A = 200 BL; City E = 150 BL.

Step 2 — Add: $200 + 150 = 350$ BL.

Why other options are wrong:

- Option A: 300 BL — under-counts by 50; perhaps uses City E = 100 instead of 150.
- Option C: 380 BL — over-counts by 30; possibly misreads City A as 230 instead of 200.
- Option D: 400 BL — over-counts by 50; perhaps uses City A = 250 (confusing it with City C).

Final Answer: Combined total of City A and City E = 350 BL $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 8](#)

Sol. 9.

Solution

Concept — Percentage Calculation: $\% = \frac{\text{Industrial Total}}{\text{Grand Total}} \times 100$.

Step 1 — Identify Industrial Total and Grand Total: Total Industrial = 500 BL; Grand Total = 1000 BL.



Step 2 — Calculate the percentage:

$$\% = \frac{500}{1000} \times 100 = 50\%$$

Why other options are wrong:

- Option A: 40% — would require Industrial total = 400 BL, not 500.
- Option B: 45% — would require Industrial total = 450 BL, not 500.
- Option D: 55% — would require Industrial total = 550 BL, not 500.

Final Answer: Industrial use accounts for 50% of total water consumption $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 9](#)

Sol. 10.

Solution

Concept — Ratio Simplification: Express Industrial:Domestic for City C in its simplest form.

Step 1 — Read City C values: Industrial = 150 BL; Domestic = 100 BL.

Step 2 — Simplify the ratio: $150 : 100 = \frac{150}{50} : \frac{100}{50} = 3 : 2$.

Why other options are wrong:

- Option A: 1:1 — would mean Industrial = Domestic (e.g., 125:125 for City C), which is not the case.
- Option B: 4:3 — would imply values like 160:120, not 150:100.
- Option C: 2:1 — would require Domestic to be half of Industrial (i.e., 75 BL), but Domestic = 100 BL.

Final Answer: Industrial to Domestic ratio in City C = $3 : 2 \Rightarrow$ **D**

Answer: (D) [Go Back to Q 10](#)



Sol. 11.

Solution

Concept — Logical Deduction (Assignment Puzzle): Apply all conditions systematically to derive the unique assignment.

Step 1 — Apply fixed conditions (ii) and (iv): Beta = P2; Delta = P4.

Step 2 — Determine Alpha's project using (i) and (vi): From (vi): Alpha $\neq$ P3. From (i): Alpha is P1 or P3, but not P3. Therefore Alpha = P1.

Step 3 — Apply condition (v): Alpha = P1 $\Rightarrow$ Gamma = P3 (by condition v).

Step 4 — Assign the remaining project: Remaining project is P5; remaining team is Epsilon. So Epsilon = P5.

Final assignment: Alpha=P1, Beta=P2, Gamma=P3, Delta=P4, Epsilon=P5.

Why other options are wrong:

- Option B: Alpha — Alpha is assigned P1, not P3.
- Option C: Epsilon — Epsilon is assigned P5, not P3.
- Option D: Beta — Beta is assigned P2 (condition ii), not P3.

Final Answer: Gamma is assigned Project P3 $\Rightarrow$ A

Answer: (A) [Go Back to Q 11](#)

Sol. 12.

Solution

Concept — Reading the Derived Assignment: From the fully derived assignment: Alpha=P1, Beta=P2, Gamma=P3, Delta=P4, Epsilon=P5.

Step 1 — Locate Epsilon in the assignment: Epsilon is assigned P5.

Step 2 — Verify: All other projects (P1 through P4) are assigned to Alpha, Beta, Gamma, and Delta respectively. P5 is the only project remaining for Epsilon.

Why other options are wrong:

- Option A: P1 — P1 is assigned to Alpha.
- Option C: P3 — P3 is assigned to Gamma.
- Option D: P4 — P4 is assigned to Delta (condition iv).

Final Answer: Epsilon is assigned Project P5 $\Rightarrow$ B



Answer: (B) [Go Back to Q 12](#)

Sol. 13.

Solution

Concept — Reading the Derived Assignment: From the derived assignment, Alpha is assigned P1.

Step 1 — Identify Alpha's project: From Step 2 of the derivation: Alpha = P1 (conditions i and vi together force this).

Step 2 — Verify with condition (v): Alpha = P1 $\Rightarrow$ Gamma = P3 ✓ (consistent with derived assignment).

Why other options are wrong:

- Option A: P2 — P2 is assigned to Beta (condition ii).
- Option B: P3 — Alpha cannot be assigned P3 per condition (vi).
- Option D: P5 — P5 is assigned to Epsilon; Alpha must take P1 (condition i + vi).

Final Answer: Alpha is assigned Project P1 $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 13](#)

Sol. 14.

Solution

Concept — Direct Application of a Given Condition: Condition (iv) directly states Delta is assigned P4.

Step 1 — Apply condition (iv): Delta = P4. This is stated as a direct constraint, requiring no derivation.

Step 2 — Confirm consistency: Delta = P4 is consistent with the full assignment (Alpha=P1, Beta=P2, Gamma=P3, Delta=P4, Epsilon=P5) ✓.

Why other options are wrong:

- Option A: Alpha — Alpha is assigned P1, not P4.
- Option B: Gamma — Gamma is assigned P3, not P4; condition (iii) also forbids Gamma from taking P4.



- Option C: Epsilon — Epsilon is assigned P5, not P4.

Final Answer: Delta is assigned Project P4 $\Rightarrow$ D

Answer: (D) [Go Back to Q 14](#)

Sol. 15.

Solution

Concept — Effect of a Swap: If Gamma and Epsilon swap their projects, Gamma takes Epsilon's project and vice versa.

Step 1 — Identify original assignments: Gamma = P3; Epsilon = P5.

Step 2 — Apply the swap: After the swap: Gamma = P5; Epsilon = P3. The other teams (Alpha=P1, Beta=P2, Delta=P4) are unaffected.

Step 3 — Identify who now handles P3: Epsilon now holds P3.

Why other options are wrong:

- Option B: Gamma — after the swap, Gamma holds P5 (not P3).
- Option C: Alpha — Alpha holds P1 and is unaffected by the Gamma–Epsilon swap.
- Option D: Beta — Beta holds P2 and is unaffected by the Gamma–Epsilon swap.

Final Answer: Epsilon would handle P3 after the swap $\Rightarrow$ A

Answer: (A) [Go Back to Q 15](#)

Sol. 16.

Solution

Concept — Logical Deduction (Shelf Arrangement): Apply all conditions to derive the full arrangement, then read position 2.

Step 1 — Apply the fixed conditions: Math=1, Physics=3 (one gap between pos 1 and pos 3 ✓), Chemistry=4 (immediately right of Physics ✓), English=5, History=6, Biology=7.

Step 2 — Identify the remaining book: Seven books total; positions 1,3,4,5,6,7 are filled. Position 2 is the only unfilled slot. The only unplaced book is **Geogra-**



phy.

Why other options are wrong:

- Option A: Physics — Physics is at position 3 (condition ii).
- Option C: English — English is at position 5 (condition vi).
- Option D: History — History is at position 6 (condition v).

Final Answer: Geography is at position 2 $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 16](#)

Sol. 17.

Solution

Concept — Direct Reading of a Given Condition: Condition (v) directly states History is at position 6.

Step 1 — Apply condition (v): History = position 6. This is directly given; no derivation needed.

Step 2 — Confirm the full arrangement: Math(1), Geography(2), Physics(3), Chemistry(4), English(5), History(6), Biology(7) ✓.

Why other options are wrong:

- Option A: Position 4 — position 4 is occupied by Chemistry (condition iii).
- Option B: Position 5 — position 5 is occupied by English (condition vi).
- Option D: Position 7 — position 7 is occupied by Biology (condition iv).

Final Answer: History is at position 6 $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 17](#)

Sol. 18.

Solution

Concept — Counting Intermediate Positions: Count the books at positions strictly between position 1 and position 4.

Step 1 — Identify positions strictly between 1 and 4: These are positions 2 and 3.



Step 2 — Identify the books at those positions: Position 2 = Geography; Position 3 = Physics. That is **2 books**.

Why other options are wrong:

- Option A: 0 — would require Math and Chemistry to be in adjacent positions, but they are at 1 and 4.
- Option B: 1 — would require only one position between 1 and 4, but there are two (positions 2 and 3).
- Option C: 3 — would require positions 2, 3, and another in between, but positions 1 to 4 span exactly two intermediate slots.

Final Answer: 2 books (Geography and Physics) lie between Math and Chemistry ⇒ D

Answer: (D) [Go Back to Q 18](#)

Sol. 19.

Solution

Concept — Adjacent Positions: The book immediately to the right of position 3 is at position 4.

Step 1 — Apply condition (iii): Chemistry is immediately to the right of Physics. Physics is at position 3, so Chemistry is at position 4.

Step 2 — Confirm: The full arrangement is Math(1), Geography(2), Physics(3), Chemistry(4), English(5), History(6), Biology(7). Position 4 = Chemistry ✓.

Why other options are wrong:

- Option B: English — English is at position 5, not immediately right of Physics.
- Option C: Geography — Geography is at position 2, to the left of Physics.
- Option D: History — History is at position 6, three places to the right of Physics.

Final Answer: Chemistry is immediately to the right of Physics ⇒ A

Answer: (A) [Go Back to Q 19](#)



Sol. 20.**Solution**

Concept — Direct Reading of a Given Condition: Condition (iv) directly states Biology is at position 7.

Step 1 — Apply condition (iv): Biology = position 7 (rightmost). This is directly given.

Step 2 — Confirm the full arrangement: Math(1), Geography(2), Physics(3), Chemistry(4), English(5), History(6), Biology(7) ✓.

Why other options are wrong:

- Option A: History — History is at position 6, one place to the left of the rightmost.
- Option C: English — English is at position 5, two places from the right end.
- Option D: Geography — Geography is at position 2, near the left end of the shelf.

Final Answer: Biology occupies the rightmost position (position 7) ⇒ B

Answer: (B) [Go Back to Q 20](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	D	3	A	4	B	5	C
6	D	7	A	8	B	9	C	10	D
11	A	12	B	13	C	14	D	15	A
16	B	17	C	18	D	19	A	20	B

Quick Reference: Correct Answers

Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	6	D	11	A	16	B
2	D	7	A	12	B	17	C
3	A	8	B	13	C	18	D
4	B	9	C	14	D	19	A
5	C	10	D	15	A	20	B

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