

CAT Data Interpretation & Logical Reasoning

Sample Paper – 20

Duration: 40 Minutes**Maximum Marks:** 60

Instructions

- This paper contains **20 questions** divided across **4 sets** (2 Data Interpretation + 2 Logical Reasoning), with 5 questions per set.
- **Marking Scheme:** +3 marks for each correct answer; –1 mark for each wrong answer; 0 marks for unattempted questions.
- All questions are **single-correct MCQ** (one best option out of four).
- Personal calculators are **not** permitted; an on-screen calculator is provided at the test centre.
- Rough sheets will be provided at the test centre. No additional stationery is allowed.

Set A: Data Interpretation — Company Annual Budget Allocation (Q1 – Q5)

The table below shows the annual budget allocation (in Rs. Crore) for five departments of a company. The total budget is **Rs. 500 Crore**. Study the data carefully and answer Questions 1–5.

Department	Budget (Rs. Crore)
Operations	150
R&D	100
Marketing	75
HR	50
IT	125
Total	500

Q1. What is the **total budget** allocated to R&D and IT combined?

- (A) Rs. 200 Crore
(B) Rs. 210 Crore



- (C) Rs. 220 Crore
- (D) Rs. 225 Crore

Q2. Which department has the **lowest budget allocation**?

- (A) HR
- (B) Marketing
- (C) R&D
- (D) IT

Q3. What **percentage** of the total budget is allocated to Marketing?

- (A) 12%
- (B) 15%
- (C) 18%
- (D) 20%

Q4. If the Operations budget is **increased by 20%**, what will be the new Operations budget?

- (A) Rs. 160 Crore
- (B) Rs. 170 Crore
- (C) Rs. 180 Crore
- (D) Rs. 190 Crore

Q5. The IT budget is **how many times** the HR budget?

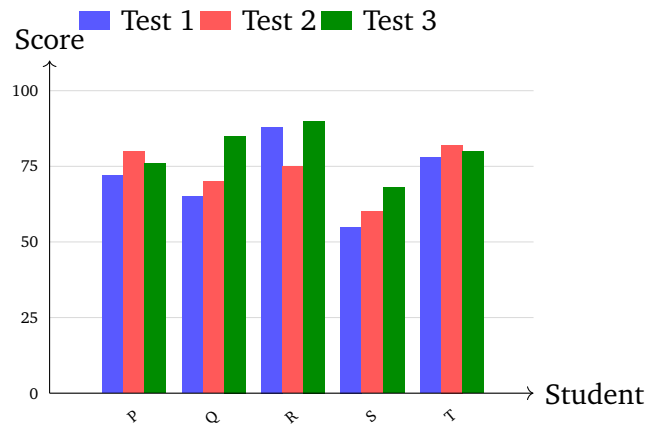
- (A) 2.0 times
- (B) 2.2 times
- (C) 2.8 times
- (D) 2.5 times

Set B: Data Interpretation — Student Test Scores (Q6 – Q10)



The grouped bar chart below shows the scores (out of 100) of five students P, Q, R, S, T across three tests. Study the chart carefully and answer Questions 6–10.

Data summary: Test 1 scores — P:72, Q:65, R:88, S:55, T:78; Test 2 scores — P:80, Q:70, R:75, S:60, T:82; Test 3 scores — P:76, Q:85, R:90, S:68, T:80.



Q6. Which student scored the **highest marks in Test 3**?

- (A) R
- (B) Q
- (C) T
- (D) P

Q7. What was the **average score** of all 5 students in Test 1?

- (A) 70.0
- (B) 71.6
- (C) 72.0
- (D) 73.5

Q8. Which student showed the **highest improvement** from Test 1 to Test 3?

- (A) S
- (B) P
- (C) Q
- (D) R

Q9. In which test was the **total score** of all five students the highest?

- (A) Test 1
- (B) Equal in Test 2 and 3
- (C) Test 2
- (D) Test 3

Q10. What is the **total score** of student R across all three tests?

- (A) 253
- (B) 248
- (C) 260
- (D) 255

**Set C: Logical Reasoning —
League Table Ranking (Q11 – Q15)**

Six teams **Alpha, Beta, Gamma, Delta, Epsilon, Zeta** are ranked 1st through 6th (1st = best) in a league. The following conditions apply:

- (i) Alpha is ranked **higher** (smaller rank number) than Beta.
- (ii) Gamma is ranked **3rd**.
- (iii) Delta is ranked **immediately below** Zeta (Delta's rank = Zeta's rank + 1).
- (iv) Epsilon is ranked **1st**.
- (v) Zeta is ranked **4th**.

Deduction: Epsilon = 1st (iv). Gamma = 3rd (ii). Zeta = 4th (v). Delta = 5th (iii, immediately below Zeta). Remaining ranks 2nd and 6th go to Alpha and Beta. From (i): Alpha < Beta in rank number $\Rightarrow$ Alpha = 2nd, Beta = 6th.



Rank	Team
1st	Epsilon
2nd	Alpha
3rd	Gamma
4th	Zeta
5th	Delta
6th	Beta

Q11. Which team is ranked **2nd**?

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

Q12. What rank does **Delta** hold?

- (A) 3rd
- (B) 4th
- (C) 5th
- (D) 6th

Q13. Which team is ranked **immediately below Gamma** (i.e., ranked 4th)?

- (A) Alpha
- (B) Delta
- (C) Beta
- (D) Zeta

Q14. Which team is ranked **last** (6th)?

- (A) Beta
- (B) Delta



- (C) Alpha
- (D) Epsilon

Q15. How many teams are ranked **between Epsilon and Gamma** (exclusive)?

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

**Set D: Logical Reasoning — Direction-
Based Navigation (Q16 – Q20)**

A person starts from point **O** and moves as follows:

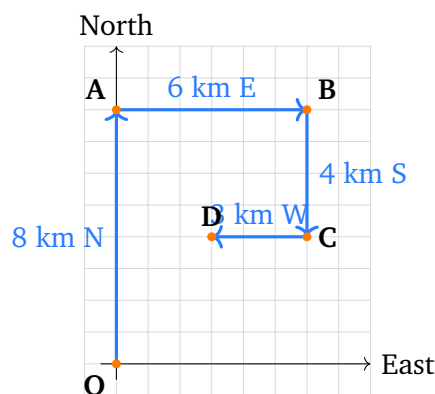
Step 1: Walks **8 km North** from O to reach point A.

Step 2: Walks **6 km East** from A to reach point B.

Step 3: Walks **4 km South** from B to reach point C.

Step 4: Walks **3 km West** from C to reach point D.

Coordinates (North = $+y$, East = $+x$): $O = (0,0)$, $A = (0,8)$, $B = (6,8)$, $C = (6,4)$, $D = (3,4)$.



Q16. What is the **straight-line distance** from O to B?

- (A) 6 km
- (B) 8 km



(C) 10 km

(D) 12 km

Q17. In which **direction** is point C from point A?

(A) South

(B) West

(C) North-East

(D) South-East

Q18. What is the **total distance traveled** from O to D?

(A) 21 km

(B) 18 km

(C) 24 km

(D) 20 km

Q19. What is the **straight-line distance** from D to O?

(A) 4 km

(B) 5 km

(C) 6 km

(D) 7 km

Q20. The person continues from D and walks **4 km East** to reach point E. In which direction is E from O?

(A) East

(B) North

(C) North-East

(D) South-East



Detailed Solutions

Sol. 1.

Solution

Concept: Add the budget values of R&D and IT directly from the table.

Step-by-step:

$$\text{R\&D} + \text{IT} = 100 + 125 = \mathbf{225 \text{ Crore}}$$

Why other options are wrong:

- (A) Rs. 200 Crore — would be correct only if IT were Rs. 100 Crore (same as R&D).
- (B) Rs. 210 Crore — off by Rs. 15 Crore; perhaps confused with another pair.
- (C) Rs. 220 Crore — Rs. 5 Crore short of the actual total.

R&D (100) + IT (125) = Rs. 225 Crore. D

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

Sol. 2.

Solution

Concept: Identify the minimum value in the Budget column.

Step-by-step comparison:

- Operations: Rs. 150 Crore
- R&D: Rs. 100 Crore
- Marketing: Rs. 75 Crore
- HR: Rs. 50 Crore ← **Lowest**
- IT: Rs. 125 Crore

Why other options are wrong:

- (B) Marketing at Rs. 75 Crore is second-lowest, not the lowest.
- (C) R&D at Rs. 100 Crore is third-lowest.
- (D) IT at Rs. 125 Crore is second-highest.



HR has the lowest budget allocation at Rs. 50 Crore. A

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

Sol. 3.

Solution

Concept: Percentage = (Department Budget ÷ Total Budget) × 100.

Step-by-step:

$$\frac{75}{500} \times 100 = 15\%$$

Why other options are wrong:

- (A) 12% — would require a Marketing budget of Rs. 60 Crore, not Rs. 75 Crore.
- (C) 18% — would require Rs. 90 Crore; Marketing is only Rs. 75 Crore.
- (D) 20% — would require Rs. 100 Crore; that is the R&D budget.

Marketing accounts for 15% of the total budget. B

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

Sol. 4.

Solution

Concept: New budget = Original budget × (1 + increase fraction).

Step-by-step:

$$150 \times 1.20 = \mathbf{180 \text{ Crore}}$$

Verification: Increase = $150 \times 0.20 = 30$ Crore; New total = $150 + 30 = 180$ Crore.

Why other options are wrong:

- (A) Rs. 160 Crore — corresponds to only a $\approx 6.7\%$ increase, not 20%.
- (B) Rs. 170 Crore — corresponds to a $\approx 13.3\%$ increase, not 20%.
- (D) Rs. 190 Crore — corresponds to a $\approx 26.7\%$ increase, too high.

New Operations budget = Rs. 180 Crore. C

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



Sol. 5.

Solution**Concept:** Ratio = IT budget $\div$ HR budget.**Step-by-step:**

$$\frac{125}{50} = 2.5 \text{ times}$$

Why other options are wrong:

- (A) 2.0 times — would require IT = Rs. 100 Crore (same as R&D).
- (B) 2.2 times — would require IT = Rs. 110 Crore, which is incorrect.
- (C) 2.8 times — would require IT = Rs. 140 Crore, which is incorrect.

The IT budget (125) is 2.5 times the HR budget (50). DAnswer: (D) [Go Back to Q 5](#)

Sol. 6.

Solution**Concept:** Identify the maximum score in Test 3 across all students.**Test 3 scores:**

- P: 76 Q: 85 R: 90 $\leftarrow$ Highest S: 68 T: 80

Why other options are wrong:

- (B) Q scored 85 in Test 3 — second highest, not the highest.
- (C) T scored 80 in Test 3 — third highest.
- (D) P scored 76 in Test 3 — fourth highest.

R scored the highest (90) in Test 3. AAnswer: (A) [Go Back to Q 6](#)

Sol. 7.

Solution**Concept:** Average = Total marks $\div$ Number of students.**Step-by-step:**

$$\text{Total} = 72 + 65 + 88 + 55 + 78 = 358$$

$$\text{Average} = \frac{358}{5} = 71.6$$

Why other options are wrong:

- (A) 70.0 — would require a total of 350; actual total is 358.
- (C) 72.0 — would require a total of 360; off by 2.
- (D) 73.5 — would require a total of 367.5; actual total is 358.

Average Test 1 score = 71.6. BAnswer: (B) [Go Back to Q 7](#)

Sol. 8.

Solution**Concept:** Improvement = Test 3 score – Test 1 score; find the maximum.**Step-by-step:**

- P: $76 - 72 = +4$
- Q: $85 - 65 = +20$ ← **Highest improvement**
- R: $90 - 88 = +2$
- S: $68 - 55 = +13$
- T: $80 - 78 = +2$

Why other options are wrong:

- (A) S improved by 13 — significant, but less than Q's 20.
- (B) P improved by only 4 — much less than Q.
- (D) R improved by only 2 — the joint lowest improvement.

Q showed the highest improvement (+20 marks) from Test 1 to Test 3. CAnswer: (C) [Go Back to Q 8](#)

Sol. 9.

Solution**Concept:** Sum all five students' scores for each test and compare.**Step-by-step:**

- Test 1: $72 + 65 + 88 + 55 + 78 = 358$
- Test 2: $80 + 70 + 75 + 60 + 82 = 367$
- Test 3: $76 + 85 + 90 + 68 + 80 = 399 \leftarrow$ **Highest**

Why other options are wrong:

- (A) Test 1 total (358) is the lowest of the three tests.
- (B) Test 2 (367) and Test 3 (399) are not equal.
- (C) Test 2 total (367) is higher than Test 1 but lower than Test 3.

Test 3 had the highest combined score of 399. DAnswer: (D) [Go Back to Q 9](#)

Sol. 10.

Solution**Concept:** Sum student R's scores across all three tests.**Step-by-step:**

$$R_{\text{Test 1}} + R_{\text{Test 2}} + R_{\text{Test 3}} = 88 + 75 + 90 = \mathbf{253}$$

Why other options are wrong:

- (B) 248 — off by 5; possibly used 85 instead of 90 for Test 3.
- (C) 260 — off by 7; possibly added an extra 7 somewhere.
- (D) 255 — off by 2; a common arithmetic slip.

Student R's total score across all three tests = 253. AAnswer: (A) [Go Back to Q 10](#)

Sol. 11.

Solution**Concept:** Derive the full ranking from the given conditions and read off rank 2.**Derivation:**

- Condition (iv): Epsilon = 1st.
- Condition (ii): Gamma = 3rd.
- Condition (v): Zeta = 4th.
- Condition (iii): Delta = Zeta's rank + 1 = 5th.
- Remaining ranks: 2nd and 6th for Alpha and Beta.
- Condition (i): Alpha ranks higher than Beta $\Rightarrow$ Alpha = 2nd, Beta = 6th.

Why other options are wrong:

- (A) Gamma is 3rd, not 2nd.
- (C) Zeta is 4th, not 2nd.
- (D) Delta is 5th, not 2nd.

Alpha is ranked 2nd. BAnswer: (B) [Go Back to Q 11](#)

Sol. 12.

Solution**Concept:** Apply condition (iii): Delta is immediately below Zeta.**Step-by-step:**

- Condition (v): Zeta = 4th.
- Condition (iii): Delta = Zeta's rank + 1 = 4 + 1 = **5th**.

Why other options are wrong:

- (A) 3rd — that is Gamma's rank.
- (B) 4th — that is Zeta's rank, not Delta's.
- (D) 6th — that is Beta's rank.



Delta holds the 5th rank.

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

Sol. 13.

Solution

Concept: The team immediately below Gamma (3rd) is the team in 4th place.

Step-by-step:

- Gamma = 3rd (condition ii).
- The team in 4th place is Zeta (condition v).
- Therefore, Zeta is immediately below Gamma.

Why other options are wrong:

- (A) Alpha is ranked 2nd — above Gamma, not below.
- (B) Delta is ranked 5th — two places below Gamma, not immediately below.
- (C) Beta is ranked 6th — three places below Gamma.

Zeta (4th) is ranked immediately below Gamma (3rd).

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

Sol. 14.

Solution

Concept: From the full ranking, identify the team at the 6th (last) position.

Full ranking: 1st Epsilon, 2nd Alpha, 3rd Gamma, 4th Zeta, 5th Delta, 6th Beta.

Why other options are wrong:

- (B) Delta is 5th, not last.
- (C) Alpha is 2nd — near the top, not last.
- (D) Epsilon is 1st — the best-ranked team.

Beta is ranked last (6th).

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



Sol. 15.

Solution

Concept: Count teams with ranks strictly between Epsilon (1st) and Gamma (3rd).

Step-by-step:

- Epsilon = 1st, Gamma = 3rd.
- Teams strictly between them (rank 2): Alpha.
- Count = **1 team**.

Why other options are wrong:

- (A) 0 — ignores Alpha at 2nd rank, which falls between 1st and 3rd.
- (C) 2 — would require two teams between ranks 1 and 3, but there is only one rank (2nd) between them.
- (D) 3 — overcounts significantly.

Exactly 1 team (Alpha, ranked 2nd) lies between Epsilon and Gamma. B

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

Sol. 16.

Solution

Concept: Use the Pythagorean theorem on the right-angled triangle OAB (O to A is vertical, A to B is horizontal).

Step-by-step:

- O = (0,0), B = (6,8).
- Horizontal distance $OB_x = 6$ km (East); Vertical distance $OB_y = 8$ km (North).

$$OB = \sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = \mathbf{10 \text{ km}}$$

Why other options are wrong:

- (A) 6 km — this is only the East component (A to B), not the hypotenuse.
- (B) 8 km — this is only the North component (O to A), not the hypotenuse.



- (D) 12 km — overestimates the straight-line distance.

Straight-line distance O to B = 10 km. C

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

Sol. 17.

Solution

Concept: Determine the direction by comparing coordinates of A and C.

Step-by-step:

- $A = (0, 8)$; $C = (6, 4)$.
- East component: $6 - 0 = +6$ km (C is to the East of A).
- North component: $4 - 8 = -4$ km (C is to the South of A).
- C is both East and South of A $\Rightarrow$ **South-East** direction.

Why other options are wrong:

- (A) South — C is not directly south; it also shifts 6 km East.
- (B) West — C has a greater East coordinate than A ($x = 6 > 0$), so it cannot be West.
- (C) North-East — C is lower in y than A (South), not higher (North).

C is in the South-East direction from A. D

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

Sol. 18.

Solution

Concept: Total distance traveled = sum of all individual step distances (path length, not straight-line).

Step-by-step:

Step 1 (O to A) + Step 2 (A to B) + Step 3 (B to C) + Step 4 (C to D) = $8 + 6 + 4 + 3 = 21$ km

Why other options are wrong:



- (B) 18 km — misses one of the steps (e.g., omits the 3 km West step).
- (C) 24 km — adds 3 extra km; perhaps double-counts a step.
- (D) 20 km — 1 km short; a common arithmetic slip.

Total distance traveled from O to D = 21 km. A

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

Sol. 19.

Solution

Concept: Straight-line distance using the Pythagorean theorem.

Step-by-step:

- $D = (3, 4)$; $O = (0, 0)$.
- Horizontal: $3 - 0 = 3$ km; Vertical: $4 - 0 = 4$ km.

$$DO = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5 \text{ km}$$

This is a classic 3-4-5 Pythagorean triple.

Why other options are wrong:

- (A) 4 km — only the vertical component from O to D's y -coordinate.
- (C) 6 km — overestimates; $\sqrt{25} = 5$, not 6.
- (D) 7 km — significantly overestimates.

Straight-line distance D to O = 5 km. B

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

Sol. 20.

Solution

Concept: Find point E's coordinates and determine its direction from O.

Step-by-step:

- $D = (3, 4)$. Walking 4 km East: $E = (3 + 4, 4) = (7, 4)$.
- From $O = (0, 0)$ to $E = (7, 4)$: East component = +7, North component =



+4.

- Both components are positive $\Rightarrow$ E lies in the **North-East** direction from O.

Why other options are wrong:

- (A) East — would require E to have $y = 0$ (same as O), but $y = 4 > 0$, so E is also North.
- (B) North — would require E to have $x = 0$ (same as O), but $x = 7 > 0$, so E is also East.
- (D) South-East — would require E to be south of O ($y < 0$), but $y = 4 > 0$.

E = (7, 4) is in the North-East direction from O. C

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



Answer Key — CAT DILR Sample Paper 20

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

Quick Reference — All 20 Answers:

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

For more CAT sample papers, solutions, and preparation resources, visit:

collegedunia.com/exams/cat/sample-paper

