

Logical Reasoning Puzzles — Practice Questions

20 Practice Questions with Answers & Solutions | CAT Logical Reasoning

This set covers the core Logical Reasoning puzzle families tested in CAT DILR: arrangement & distribution puzzles, quantitative & numerical reasoning puzzles, advanced logical puzzles, and miscellaneous logic-structure sets. Each question includes the answer and a full step-by-step solution directly below it. Difficulty spans Easy (E), Medium (M) and Tough (T).

Topics Covered			QUESTION MAPPING
Category	Sub-Topic	Question Numbers	
Arrangement & Distribution	Linear & Circular Arrangements	Q1, Q5, Q17	
	Matrix / Grid Matching	Q6, Q18	
	Selection & Team Formation	Q7	
Quantitative & Numerical	Grid-Based Fillers	Q8	
	Alphanumeric Riddles	Q2, Q9	
	Missing Data Tables	Q4, Q10	
Advanced Logical Puzzles	Binary Logic	Q11, Q19	
	Games & Tournaments	Q12	
	Scheduling & Sequencing	Q13, Q20	
Miscellaneous Logic Sets	Venn Diagrams (Set Theory)	Q3, Q14	
	Routes & Networks	Q15	
	Cubes & Visual Logic	Q16	

Difficulty Legend			QUESTION DISTRIBUTION
Level	Questions	Q Numbers	Border Colour
Easy	4	Q1 – Q4	Green
Medium	11	Q5 – Q15	Orange
Tough	5	Q16 – Q20	Red

EASY

Q1 – Q4

Q1. Linear Arrangement Arrangement & Distribution Five friends A, B, C, D, and E are sitting in a row facing north, in positions 1 to 5 from left to right. - A is at the leftmost end. - B is immediately to the left of C. - D is exactly in the middle. - E is not sitting at either end. Who is sitting immediately to the right of D? (A) B (B) C (C) E (D) Cannot be determined Answer: (A) B D is in the middle (position 3). Since E cannot be at an end, and A is fixed at position 1, E must be at position 2 (the only non-end position left besides 3 and 4). B is immediately left of C, so the consecutive pair (B, C) must occupy positions 4 and 5 in that order: B=4, C=5. Final order: A(1), E(2), D(3), B(4), C(5). The person immediately right of D (position 3) is B (position 4).	EASY
Q2. Alphanumeric Riddle Quantitative & Numerical In a certain code, "TABLE" is written as "UBCMF" (each letter is shifted forward by one position in the alphabet). How is "CHAIR" written in the same code? (A) DIBJS (B) DIBJT (C) DJBIS (D) EIBJS Answer: (A) DIBJS Each letter shifts forward by one: C→D, H→I, A→B, I→J, R→S. Combining gives "DIBJS".	EASY

Q3. Venn Diagram (Set Theory) *Miscellaneous Logic Sets*

EASY

In a class of 60 students, 35 play cricket, 30 play football, and 12 play both sports.

How many students play neither sport?

- (A) 5
- (B) 7
- (C) 10
- (D) 12

Answer: (B) 7

Students playing at least one sport = $35 + 30 - 12 = 53$ (using the inclusion-exclusion principle). Students playing neither = $60 - 53 = 7$.

Q4. Missing Data Table *Quantitative & Numerical*

EASY

A table records Item, Price, Quantity, and Total (Price $\times$ Quantity):

- Item A: Price = 20, Quantity = 5, Total = ?
- Item B: Price = ?, Quantity = 4, Total = 80
- Item C: Price = 15, Quantity = ?, Total = 90

What is the sum of the three missing values (Total of A, Price of B, and Quantity of C)?

- (A) 116
- (B) 126
- (C) 136
- (D) 106

Answer: (B) 126

Total of A = $20 \times 5 = 100$. Price of B = $80 \div 4 = 20$. Quantity of C = $90 \div 15 = 6$. Sum = $100 + 20 + 6 = 126$.

MEDIUM

Q5 - Q15

Q5. Circular Arrangement *Arrangement & Distribution*

MEDIUM

Six friends A, B, C, D, E, and F are sitting around a circular table, facing the center.

- B sits immediately to the right of A.
- D sits directly opposite A.
- C sits between B and D.
- F sits immediately to the left of A.

Who sits immediately to the right of E?

- (A) A
- (B) F
- (C) D
- (D) C

Answer: (B) F

Place A at seat 1. B is immediately right of A $\Rightarrow$ seat 2. D is opposite A (seat $1+3=4$) $\Rightarrow$ seat 4. C is between B and D $\Rightarrow$ seat 3. F is immediately left of A $\Rightarrow$ seat 6. Only seat 5 remains, which must be E (the only person left). Moving clockwise from E (seat 5), the next seat is 6 = F. So F sits immediately to the right of E.

Q6. Matrix / Grid Matching *Arrangement & Distribution*

MEDIUM

Four people — Anil, Bina, Chetan, and Deepa — each have a different favourite colour (Red, Blue, Green, Yellow) and a different pet (Cat, Dog, Fish, Bird).

- Anil's favourite colour is not Red or Blue.
- The person who likes Green owns a Dog.
- Bina owns a Fish, and her favourite colour is not Yellow.
- Chetan's favourite colour is Blue.
- Deepa does not own a Bird.
- Deepa's favourite colour is not Green.

What is Anil's favourite colour and pet?

- (A) Green, Dog
- (B) Yellow, Cat
- (C) Green, Cat
- (D) Red, Dog

Answer: (A) Green, Dog

Chetan = Blue. Anil $\neq$ Red/Blue $\Rightarrow$ Anil is Green or Yellow. Bina owns Fish and is not Green (since Green owns a Dog) and not Yellow $\Rightarrow$ Bina = Red. Remaining colours Green, Yellow go to Anil and Deepa; since Deepa $\neq$ Green, Deepa = Yellow and Anil = Green. Anil (Green) therefore owns the Dog. Remaining pets Cat, Bird go to Chetan and Deepa; since Deepa $\neq$ Bird, Deepa = Cat and Chetan = Bird. Final: Anil = Green/Dog, Bina = Red/Fish, Chetan = Blue/Bird, Deepa = Yellow/Cat.

Q7. Selection & Team Formation *Arrangement & Distribution*

MEDIUM

A committee of exactly 3 people must be selected from 6 candidates: P, Q, R, S, T, U, subject to:

- If P is selected, Q must also be selected.
- R and S cannot be selected together.
- At least one of T or U must be selected.

How many different valid committees of 3 are possible?

- (A) 6
(B) 8
(C) 9
(D) 10

Answer: (C) 9

Total ways to choose 3 from 6 = 20. Reject: committees with P but not Q (6 ways: PRS, PRT, PRU, PST, PSU, PTU), committees with both R and S (3 ways: RST, RSU, and QRS — already counted appropriately), and committees with neither T nor U (PQR, PQS). After removing all invalid overlaps carefully, exactly 9 committees satisfy all three conditions simultaneously: PQT, PQU, QRT, QRU, QST, QSU, QTU, RTU, STU.

Q8. Grid-Based Filler *Quantitative & Numerical*

MEDIUM

Fill a 3×3 grid with the numbers 1, 2, 3 such that each row and each column contains each number exactly once (a Latin square). The partially filled grid is:

- Row 1:

	2	
--	---	--
- Row 2:

		1
--	--	---
- Row 3:

3		
---	--	--
- The sum of the main diagonal (top-left to bottom-right) is 6.

What value goes in Row 1, Column 1?

- (A) 1
(B) 2
(C) 3
(D) Cannot be determined

Answer: (A) 1

Column 1 already has a 3 (Row 3), so Row 1 Col 1 cannot be 3; since Row 1 has 2 at Col 2, Row 1 Col 1 must be 1 or 3 — eliminating 3 leaves 1. This gives Row 1 = 1, 2, 3. Column 1 then needs 2 for Row 2 (since 1 and 3 are used), so Row 2 Col 1 = 2, making Row 2 = 2, 3, 1. Row 3 becomes 3, 1, 2. The diagonal (1, 3, 2) sums to 6, confirming the solution.

Q9. Alphanumeric Riddle *Quantitative & Numerical*

MEDIUM

In a certain code, "MONEY" is written as "OQPGA" (each letter is shifted forward by two positions in the alphabet, wrapping from Z to A).

How is "SMILE" written in the same code?

- (A) UOKNG
(B) UOKMG
(C) UPKNG
(D) TOKNG

Answer: (A) UOKNG

Shifting each letter forward by two: S→U, M→O, I→K, L→N, E→G. Combining gives "UOKNG".

Q10. Missing Data Table *Quantitative & Numerical*

MEDIUM

A payroll table shows Employee, Hours Worked, Hourly Rate, and Total Pay:

- Employee A: Hours = 8, Rate = 250, Total = ?
- Employee B: Hours = ?, Rate = 300, Total = 2400
- Employee C: Hours = 10, Rate = ?, Total = 2000

What is the sum of (Total of A) + (Hours of B) + (Rate of C)?

- (A) 2198
(B) 2208
(C) 2308
(D) 2108

Answer: (B) 2208

Total of A = $8 \times 250 = 2000$. Hours of B = $2400 \div 300 = 8$. Rate of C = $2000 \div 10 = 200$. Sum = $2000 + 8 + 200 = 2208$.

Q11. Binary Logic *Advanced Logical Puzzles*

MEDIUM

Three people X, Y, and Z are each either a truth-teller (always tells the truth) or a liar (always lies).

- X says: "Y is a liar."
- Y says: "Z is a liar."
- Z says: "X and Y are both liars."

How many of the three are liars?

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

Answer: (C) 2

Assume X is a truth-teller: then Y is a liar (from X's statement), so Y's statement is false, making Z a truth-teller. But then Z's statement "X and Y are both liars" must be true, which contradicts X being a truth-teller. So X must be a liar. Since X lies, "Y is a liar" is false, so Y is a truth-teller. Since Y is truthful, "Z is a liar" is true, so Z is a liar. Checking Z's statement (a lie): "X and Y are both liars" is indeed false since Y is truthful — consistent. Final: X = liar, Y = truth-teller, Z = liar ⇒ 2 liars.

Q12. Games & Tournaments *Advanced Logical Puzzles*

MEDIUM

Four teams A, B, C, D play a round-robin tournament (each team plays every other team exactly once). A win earns 3 points, a draw earns 1 point to each team, and a loss earns 0 points. Final standings: A = 7, B = 5, C = 3, D = 1.

How many matches ended in a draw?

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

Answer: (B) 2

Total matches = $4C2 = 6$. If every match had a decisive result, total points distributed = $6 \times 3 = 18$. Actual total points = $7+5+3+1 = 16$. Each draw reduces the total by 1 point compared to a decisive match ($1+1=2$ instead of $3+0=3$). Deficit = $18 - 16 = 2$, so there were 2 draws.

Q13. Scheduling & Sequencing *Advanced Logical Puzzles*

MEDIUM

Five tasks P, Q, R, S, T must be scheduled in five consecutive time slots (1 to 5), one task per slot.

- Q is scheduled immediately after P.
- R is scheduled in slot 1 or slot 5.
- S is scheduled before T.
- T is scheduled in slot 4.
- P is not scheduled in slot 2.

In which slot is P scheduled?

- (A) Slot 1
- (B) Slot 2
- (C) Slot 3
- (D) Slot 5

Answer: (A) Slot 1

T = slot 4. If R = slot 1, the remaining slots {2,3,5} must hold P,Q (consecutive) and S; only (2,3) is a valid consecutive pair, forcing S = slot 5 — but S must be before T (slot 4), which fails. So R = slot 5. Remaining slots {1,2,3} hold P,Q,S. P,Q must be consecutive: either (1,2) or (2,3). Since P cannot be in slot 2, only P=1, Q=2 works, leaving S=3 (which is indeed before T=4). Final schedule: P=1, Q=2, S=3, T=4, R=5.

Q14. Venn Diagram (Set Theory) *Miscellaneous Logic Sets*

MEDIUM

In a survey of 100 people on beverage preference (Tea, Coffee, Juice):

- 50 like Tea, 45 like Coffee, 40 like Juice.
- 20 like both Tea and Coffee, 15 like both Coffee and Juice, 18 like both Tea and Juice.
- 8 like all three.

How many people like exactly one beverage?

- (A) 43
- (B) 48
- (C) 53
- (D) 58

Answer: (C) 53

Only Tea = $50 - 20 - 18 + 8 = 20$. Only Coffee = $45 - 20 - 15 + 8 = 18$. Only Juice = $40 - 18 - 15 + 8 = 15$. Exactly one beverage = $20 + 18 + 15 = 53$. (Cross-check: total liking at least one = 90, exactly two = 29, exactly three = 8; $53+29+8 = 90$, which matches.)

Q15. Routes & Networks *Miscellaneous Logic Sets*

MEDIUM

Five cities P, Q, R, S, T are connected by bidirectional roads: P-Q, Q-R, R-S, S-T, P-T, Q-T.

What is the minimum number of roads needed to travel from P to S, and via which route?

- (A) 2 roads, via T
- (B) 2 roads, via Q
- (C) 3 roads, via Q and R
- (D) 1 road, direct

Answer: (A) 2 roads, via T

There is no direct P-S road, ruling out option (D). The path P-Q-R-S takes 3 roads. However, P-T-S is possible directly since both the P-T and S-T roads exist, requiring only 2 roads — the shortest possible route.

TOUGH

Q16 - Q20

Q16. Cubes & Visual Logic *Miscellaneous Logic Sets*

TOUGH

A cube of side 4 cm is painted red on all six faces and then cut into 64 smaller cubes of side 1 cm each.

How many of the smaller cubes have exactly two faces painted?

- (A) 16
- (B) 20
- (C) 24
- (D) 28

Answer: (C) 24

For an $n \times n \times n$ cube, cubes with exactly two painted faces lie along the edges (excluding corners): $12 \times (n-2)$. For $n=4$: $12 \times 2 = 24$. (Cross-check: corners with 3 faces = 8, edges with 2 faces = 24, face-centres with 1 face = $6 \times 2^2 = 24$, interior with 0 faces = $2^3 = 8$; total = $8+24+24+8 = 64$, matching the total number of unit cubes.)

Q17. Circular Arrangement *Arrangement & Distribution***TOUGH**

Seven friends A, B, C, D, E, F, and G sit around a circular table, facing the center.

- C sits immediately to the right of A.
- G sits second to the right of C.
- E sits immediately to the left of G.
- D sits immediately to the right of B.
- F sits immediately to the right of D.

Who sits immediately to the right of G?

- (A) B
- (B) E
- (C) D
- (D) F

Answer: (A) B

Place A at seat 1, C at seat 2 (immediately right of A). G is second to the right of C: seat $2+2 = \text{seat } 4$. E is immediately left of G: seat 3. This uses seats 1–4 for A, C, E, G in order. The remaining seats 5, 6, 7 must hold B, D, F as a block, with D immediately right of B and F immediately right of D: $B=5, D=6, F=7$. Since these are the only two people-blocks and together they fill all 7 seats of the circle, this arrangement is uniquely fixed. The seat immediately right of G (seat 4) is seat 5 = B.

Q18. Matrix / Grid Matching *Arrangement & Distribution***TOUGH**

Four friends — Aman, Bhavna, Chirag, and Divya — live in four different cities (Delhi, Mumbai, Chennai, Kolkata) and have four different professions (Doctor, Engineer, Lawyer, Teacher).

- The Doctor lives in Delhi.
- The Engineer does not live in Chennai or Kolkata.
- Chirag lives in Chennai.
- Divya is not the Engineer.
- The Teacher lives in Kolkata.
- Aman does not live in Mumbai.
- Aman is not the Teacher.

What is Bhavna's profession and city?

- (A) Engineer, Mumbai
- (B) Doctor, Delhi
- (C) Lawyer, Chennai
- (D) Teacher, Kolkata

Answer: (A) Engineer, Mumbai

Chirag = Chennai. Since the Doctor lives in Delhi and the Engineer cannot live in Chennai or Kolkata, the Engineer must live in Mumbai (Delhi is already tied to the Doctor). Aman does not live in Mumbai, so Aman lives in Delhi or Kolkata; but the Teacher lives in Kolkata and Aman is not the Teacher, so Aman cannot live in Kolkata either $\Rightarrow$ Aman = Delhi = Doctor. Divya is not the Engineer, and the Engineer lives in Mumbai, so Divya does not live in Mumbai $\Rightarrow$ Divya = Kolkata = Teacher. By elimination, Bhavna = Mumbai = Engineer, and Chirag = Chennai = Lawyer (the only profession left).

Q19. Binary Logic *Advanced Logical Puzzles***TOUGH**

Four people J, K, L, M each make a statement. Exactly two of them always tell the truth, and exactly two always lie.

- J says: "K is a liar."
- K says: "L and M are both liars."
- L says: "J is a truth-teller."
- M says: "K is a truth-teller."

Which two people are the truth-tellers?

- (A) J and L
- (B) J and K
- (C) K and M
- (D) L and M

Answer: (A) J and L

Testing all six possible truth-teller pairs, only "J and L truthful, K and M liars" is fully consistent: J (truthful) says K is a liar — true. L (truthful) says J is a truth-teller — true. K (liar) says "L and M are both liars" — false, since L is actually truthful, so the statement is correctly false. M (liar) says "K is a truth-teller" — false, since K is actually a liar, correctly false. Every other pairing produces a direct contradiction when checked against all four statements.

Q20. Scheduling & Sequencing *Advanced Logical Puzzles***TOUGH**

Six activities P, Q, R, S, T, U must each be scheduled on a different day from Monday to Saturday.

- Q is scheduled on Wednesday.
- P is scheduled exactly two days before U.
- R is scheduled immediately after S.
- T is not scheduled on Monday.

On which day is T scheduled?

- (A) Monday
- (B) Thursday
- (C) Friday
- (D) Saturday

Answer: (C) Friday

Q = Wednesday. For "P two days before U" ($U = P+2$) with Wednesday excluded, two options exist: $P=\text{Tuesday}, U=\text{Thursday}$ or $P=\text{Thursday}, U=\text{Saturday}$. Testing the first: remaining days {Mon, Fri, Sat} must hold S, R (consecutive) and T; only Fri-Sat work as consecutive, giving $S=\text{Fri}, R=\text{Sat}, T=\text{Monday}$ — but T cannot be Monday, so this option is rejected. Testing the second: remaining days {Mon, Tue, Fri} must hold S, R (consecutive) and T; only Mon-Tue work as consecutive, giving $S=\text{Monday}, R=\text{Tuesday}, T=\text{Friday}$, which satisfies all constraints. Final schedule: $S=\text{Mon}, R=\text{Tue}, Q=\text{Wed}, P=\text{Thu}, T=\text{Fri}, U=\text{Sat}$. T is scheduled on Friday.

Answer Key Summary

Q1-Q4	
Q5-Q8	
Q9-Q12	
Q13-Q16	
Q17-Q20	
	Q1 (A)
	Q5 (B)
	Q9 (A)
	Q13 (A)
	Q17 (A)
	Q2 (A)
	Q6 (A)
	Q10 (B)
	Q14 (C)
	Q18 (A)
	Q3 (B)
	Q7 (C)
	Q11 (C)
	Q15 (A)
	Q19 (A)
	Q4 (B)
	Q8 (A)
	Q12 (B)
	Q16 (C)
	Q20 (C)

Note: This practice set is intended for concept revision and self-assessment only. Puzzle style, format, and difficulty are illustrative and may differ from the exact pattern of actual CAT question papers.