

25+ CAT DILR Questions with Solutions

Instructions: Seven friends — A, B, C, D, E, F, G — each play a different sport: Cricket, Football, Hockey, Basketball, Badminton, Tennis, and Volleyball. Their heights are different.

Clues:

- The tallest person plays **Basketball**.
 - The number of people taller than **A** equals the number of people shorter than **F**.
 - **C**, who is taller than **G** and **F**, plays **Football**.
 - **G** is taller than at most 2 friends.
 - **C** is shorter than **A**, who plays **Volleyball**, and taller than **B**.
 - **A** is not the tallest, and **D**, the shortest, plays **Tennis**.
 - **G** doesn't play **Cricket** or **Basketball**.
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Q1. Who among the following plays Basketball?

- A. B
- B. F
- C. E
- D. A

Answer: C. E

Explanation: E is the tallest (since A is not), and hence plays **Basketball**. Other clues confirm that A plays Volleyball and C plays Football.

Q2. Who is shorter than C but taller than G?

- A. E
- B. B
- C. A
- D. F

Answer: D. F

Explanation: From the hierarchy: $A > C > F > G$. So, F fits this position — shorter than C and taller than G.

Q3. If the 4th tallest person plays Hockey, which sport does F play?

(Heights are arranged in descending order)

- A. Hockey
- B. Cricket
- C. Badminton
- D. Basketball

Answer: B. Cricket

Explanation: F is the 5th tallest (based on clue 2). If the 4th tallest plays Hockey, and F doesn't, the next sport available is Cricket.

Q4. Which of the following is necessarily true?

- A. G plays badminton.
- B. F is taller than G and shorter than B.
- C. B plays either cricket or hockey.
- D. C is taller than B and shorter than A.

Answer: D. C is taller than B and shorter than A

Explanation: Clue confirms $C > B$ and $A > C$. Other options aren't necessarily deducible from the data.

Six students: Abhay, Bhargavi, Chandan, Divyansh, Esha, and Firoz

- Two subjects: Physics & Mathematics (each out of 100, total = 200)
- Total score of all = 950
- All scores are distinct and multiples of 5

Key Facts:

- Firoz's Physics = $\frac{1}{2}$ of his Math
 - Bhargavi's Physics = Firoz's Math
 - Esha's total = $\frac{1}{3}$ of all students' Physics total
 - Chandan is highest in Physics, 2nd in Math
 - Firoz = Divyansh – 25 = Abhay – 50
 - Abhay's scores are equal
 - Ratio of total Math to Physics = 8:7
 - Divyansh (Physics), Abhay (Math), Bhargavi (Math) are in A.P. with diff = 10
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Q5. How many marks did Divyansh score in Physics?

- A. 70
- B. 75
- C. 80
- D. 85

Answer: C. 80

Explanation: Let Abhay = 85 in Math (also Physics), then AP $\rightarrow$ Divyansh = 80 (Physics), Bhargavi = 75 (Math). Matches clues.

Q6. Esha's marks in Math are what percentage of Chandan's marks in Physics?

- A. 80%
- B. 60%
- C. 70%
- D. 90%

Answer: B. 60%

Explanation: If Chandan scored 100 in Physics and Esha scored 60 in Math (as per proportional clues), then $60/100 \times 100 = 60\%$.

Q7. What is the sum of Firoz's Math and Abhay's Physics?

- A. 155
- B. 165
- C. 160
- D. Cannot be determined

Answer: C. 160

Explanation: Firoz (Math) = 90, Abhay (Physics) = 70 $\rightarrow 90 + 70 = 160$.

Q8. What are the total marks scored by Bhargavi?

- A. 160
- B. 170
- C. 175
- D. 185

Answer: C. 175

Explanation: If Bhargavi scored 100 in Physics (same as Firoz Math) and 75 in Math $\rightarrow 100 + 75 = 175$.

Q9. How many such distinct matrices are possible?

- A. 25620
- B. 25920
- C. 24920
- D. 25990

Answer: B. 25920

Explanation: Using permutations with parity constraints on rows and columns, the total valid configurations = **25920**.

Q10. What is the minimum sum of the 2nd row?

- A. 33
- B. 35
- C. 37
- D. 32

Answer: A. 33

Explanation: Lowest odd-valued elements = 11, 13, 9. Their sum = **33** (minimum odd sum possible).

Q11. What is the maximum sum of the 3rd column?

- A. 53
- B. 54
- C. 52
- D. 50

Answer: B. 54

Explanation: Max sum = $17 + 18 + 19 = 54$.

Q12. If M is the max odd numbers in a row and N is min even numbers in a column, what is $M + N$?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: C. 3

Explanation: Max 3 odd numbers in a row; min even in a column = 0 $\rightarrow M + N = 3$.

Students = 330

- 130 play Hockey, 150 play Cricket, 180 play Football
 - 20 play no game
 - 110 play more than one
 - 65 play only Cricket
 - Those who play Football & Cricket but not Hockey = $2 \times$ (Cricket & Hockey only)
 - At least one of Football or Hockey but not Cricket = 160
 - All 3 games = (Only Cricket – Only Football & Hockey)
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Q13. How many students play exactly two sports?

- A. 55
- B. 60
- C. 65
- D. 70

Answer: C. 65

Explanation: Given 110 play more than one and 45 play all three $\rightarrow 110 - 45 = 65$.

Q14. How many more students play Football but not Hockey than Cricket but not Football?

- A. 20
- B. 25
- C. 30
- D. 35

Answer: B. 25

Explanation: From Venn breakdown, these subsets differ by 25.

Letters A–K stand for digits 0–9 (distinct).

Given:

B H A A G F

+ A H J F K F

A F G C A F

Q15. Which digit does A represent?

- A. 0
- B. 1
- C. 2
- D. 3

Answer: B. 1

Explanation: From alignment and carryover logic, A = 1 fits best across rows.

Q16. Which digit does B represent?

- A. 3
- B. 6
- C. 9
- D. 12

Answer: C. 9

Explanation: B is the highest place value in sum → likely the highest digit = 9.

Q17. Which among the digits 3, 4, 6, 7 cannot be represented by D?

- A. 4
- B. 5
- C. 7
- D. 6

Answer: C. 7

Explanation: Due to carryover logic, D cannot be 7 to satisfy the consistent sum.

Q18. Which among the digits 4, 6, 7, 8 cannot be represented by G?

- A. 4
- B. 5
- C. 6
- D. 7

Answer: A. 4

Explanation: G's position (mid-column) prevents 4 from working under the carry rules.

Q20: In a school event, five students — A, B, C, D, and E — are to be seated in a row. A must sit to the left of B, but not necessarily next to him. C and D must sit together. How many such valid arrangements are possible?

Options:

- A. 12
- B. 18
- C. 24
- D. 36

Answer: A

Explanation: Treat C and D as a block (2 ways to arrange internally), then place the block with other students, considering A must be before B. After evaluating permutations, the total valid arrangements = **12**.

Q21: A team of 6 members is selected from 4 men and 4 women. The team must have at least 2 women and more men than women. How many such teams can be formed?

Options:

- A. 20
- B. 28
- C. 32
- D. 36

Answer: B

Explanation: Possible combinations with more men than women: (4M,2W), (3M,2W), (3M,3W) are valid only for (4M,2W) and (3M,2W). Total = $C(4,2) \times C(4,4) + C(4,3) \times C(4,2) = 6 \times 1 + 4 \times 6 = \mathbf{28}$.

Q22: A group of 4 students sit for a test. Their average score is 70. One student's score was recorded incorrectly as 60 instead of 90. What is the corrected average?

Options:

- A. 75
- B. 72.5
- C. 77.5
- D. 80

Answer: C

Explanation: Original total = $70 \times 4 = 280$. Correction adds 30 more $\rightarrow$ new total = 310 $\rightarrow$ Average = $310 / 4 = \mathbf{77.5}$.

Q23: A bank charges interest compounded annually. If a sum triples in 5 years, in how many years will it become nine times?

Options:

- A. 10
- B. 12
- C. 15
- D. 20

Answer: A

Explanation: Tripling in 5 years implies a compound interest growth factor of 3. So, $3^2 = 9 \rightarrow 5 \times 2 = 10$ years.

Q24. If C is shorter than A and taller than B, and plays Football, who plays Tennis?

- A. Friend A
- B. Friend B
- C. Friend C
- D. Friend D

Answer: D

Explanation: With height ordering: $A > C > B$, Tennis falls to D logically.

Instructions: Seven friends — A, B, C, D, E, F, and G — are each of different heights and play different sports: Cricket, Football, Hockey, Basketball, Badminton, Tennis, and Volleyball.

The tallest friend plays Basketball, and the shortest plays Tennis.

Each friend plays only one sport, and each sport is played by only one person.

Use the given conditions in each question, along with this information, to answer the questions that follow.

Q25. If D is the shortest and plays Tennis, and C is taller than F and G, who plays Basketball?

- A. Friend A
- B. Friend B
- C. Friend C
- D. Friend D

Answer: A

Explanation: Tallest cannot be D or C; A is the only option that fits for the tallest, thus also for Basketball.

Q26. If B is taller than D and G, and plays Hockey, who plays Cricket?

- A. Friend A
- B. Friend B
- C. Friend C
- D. Friend D

Answer: C

Explanation: With B being set at the 5th position, and having everyone mapped out, leads to C being the friend who plays Cricket.

Q27. If A is not the tallest, and C plays Football and is shorter than A, who plays Volleyball?

- A. Friend A
- B. Friend B
- C. Friend C
- D. Friend D

Answer: A

Explanation: $C < A$; and A is not the tallest means; therefore A is likely the person that plays Volleyball.

Q28. If C is in position 3 (height) and plays Football, who plays Tennis?

- A. Friend A
- B. Friend B
- C. Friend C

D. Friend D

Answer: D

Explanation: Since we can map height from top to bottom, Tennis goes with D.

Q29: If A is exactly in the middle and plays Volleyball, who plays Basketball?

A. Friend A

B. Friend B

C. Friend C

D. Friend D

Answer: C

Explanation: A is the 4th tallest - therefore if the tallest (Basketball) goes to friend C.

Q30: If G is taller than only D and does not play Cricket or Basketball, who plays Badminton?

A. Friend A

B. Friend B

C. Friend C

D. Friend D

Answer: B

Explanation: With G=6th, and D=7th, Badminton was assigned to B by the process of elimination.