CAT Data Interpretation & Logical Reasoning

Sample Paper – 19

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 — Railway Passenger Traffic (Q1 – Q5)

The table below shows passenger traffic (in thousands) at five railway stations for the years 2021, 2022, and 2023. Study the data carefully and answer Questions 1–5.

Station	2021 (000s)	2022 (000s)	2023 (000s)
Agra	450	520	480
Bareilly	280	310	350
Chittor	360	340	390
Dehradun	200	240	260
Etawah	150	170	180
Total	**1,440**	**1,580**	**1,660**

Q1. What was the **total passenger traffic** across all stations in 2022 (in thousands)?

(A) 1,520

(B) 1,550

(C) 1,580

(D) 1,620

Q2. Which station recorded a **decrease** in passenger traffic from 2021 to 2022?

(A) Bareilly

(B) Dehradun

(C) Etawah

(D) Chittor

Q3. By approximately what **percentage** did Dehradun's traffic increase from 2021 to 2023?

(A) 30%

(B) 25%

(C) 35%

(D) 40%

Q4. In which year did Agra record its **highest** passenger traffic?

(A) 2023

(B) 2022

(C) 2021

(D) Equal in 2022 and 2023

Q5. What was the **combined** passenger traffic of Bareilly and Etawah in 2023 (in thousands)?

(A) 490

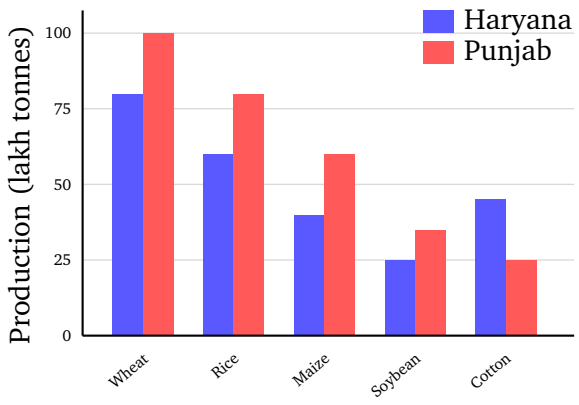
(B) 510

(C) 530

(D) 550

Set B: Data Interpretation — Agricultural Production (Q6 – Q10)

The grouped bar chart below shows agricultural production (in lakh tonnes) for five crops in Haryana and Punjab. Study the chart carefully and answer Questions 6–10.



Q6. Which crop had the **highest production** in Punjab?

(A) Rice (80 lakh tonnes)

(B) Cotton (25 lakh tonnes)

(C) Maize (60 lakh tonnes)

(D) Wheat (100 lakh tonnes)

Q7. What is the **total production** of all crops in Haryana (in lakh tonnes)?

(A) 250

(B) 260

(C) 240

(D) 270

Q8. By how many lakh tonnes does Punjab's Wheat production **exceed** Haryana's Wheat production?

(A) 15

(B) 20

(C) 25

(D) 30

Q9. What is the **ratio** of total production in Haryana to total production in Punjab?

(A) 3:4

(B) 4:5

(C) 5:6

(D) 7:9

Q10. For which crop is the **absolute difference** in production between Haryana and Punjab the **smallest**?

(A) Wheat (difference = 20)

(B) Rice (difference = 20)

(C) Maize (difference = 20)

(D) Soybean (difference = 10)

Set C: Logical Reasoning — Family Relations (Q11 – Q15)

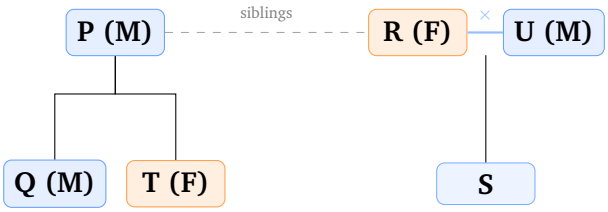
Read the following family information carefully and answer Questions 11–15.

(i) **P** is male and is the father of **Q** (male) and **T** (female).

(ii) **R** is female and is the mother of **S**.

(iii) **U** is male and is the husband of R.

(iv) **P** and **R** are siblings (P is R's brother).



Q11. What is the relationship of **Q** to **S**?

(A) Cousin

(B) Sibling

(C) Nephew/Niece

(D) Uncle/Aunt

Q12. How is **T** related to **U**?

(A) Sister

(B) Niece

(C) Daughter

(D) Cousin

Q13. Who is the **father** of S?

(A) P

(B) T

(C) U

(D) Q

Q14. What is the relationship between **Q** and **T**?

(A) Cousins

(B) Parent and Child

(C) Uncle and Niece

(D) Siblings

Q15. How many **children** does P have in this family?

(A) 2

(B) 1

(C) 3

(D) 4

Set D: Logical Reasoning — Project Assignment Puzzle (Q16 – Q20)

Four analysts **W, X, Y, Z** are each assigned a unique project from: **Infrastructure, Healthcare, Education, Technology**. Each analyst is from a unique city: **Mumbai, Delhi, Pune, Hyderabad**. The following conditions apply:

(i) W is from **Mumbai**.

(ii) The analyst from **Delhi** is assigned the **Technology** project.

(iii) Y is assigned the **Healthcare** project.

(iv) Z is from **Pune**.

(v) X does **not** live in Hyderabad.

(vi) W is **not** assigned the Infrastructure project.

Deduction: W=Mumbai, Z=Pune. Remaining cities for X and Y: Delhi and Hyderabad. From (v): X $\neq$ Hyderabad $\Rightarrow$ X=Delhi, Y=Hyderabad. From (ii): X(Delhi) $\Rightarrow$ Technology. From (iii): Y $\Rightarrow$ Healthcare. Remaining projects {Infrastructure, Education} for W and Z. From (vi): W $\neq$ Infrastructure $\Rightarrow$ W=Education, Z=Infrastructure.

Analyst	City	Project
W	Mumbai	Education
X	Delhi	Technology
Y	Hyderabad	Healthcare
Z	Pune	Infrastructure

Q16. Which project is **W** assigned?

(A) Technology

(B) Education

(C) Healthcare

(D) Infrastructure

Q17. Who is from **Delhi**?

(A) W

(B) Y

(C) X

(D) Z

Q18. Which analyst is assigned the **Infrastructure** project?

(A) W

(B) X

(C) Y

(D) Z

Q19. What is the **city** of the analyst assigned to Healthcare?

(A) Hyderabad

(B) Mumbai

(C) Delhi

(D) Pune

Q20. Which of the following statements is **TRUE**?

(A) Z is from Delhi

(B) X is assigned Technology

(C) W is from Hyderabad

(D) Y is from Pune

Detailed Solutions

Sol. 1.

Solution

Concept: Sum all station traffic values for 2022.

Step-by-step:

$$520 + 310 + 340 + 240 + 170 = 1{,}580 \text{ thousand}$$

- Agra: 520
- Bareilly: 310
- Chittor: 340
- Dehradun: 240
- Etawah: 170
- **Total = 1,580 thousand**

Why other options are wrong:

- (A) 1,520 — understates by 60; likely misread Chittor as 280.
- (B) 1,550 — understates by 30; common addition error.
- (D) 1,620 — overstates by 40; likely used 2023 Bareilly value.

Total 2022 traffic = 1,580 thousand. $\boxed{C}$

Answer: (C) Go Back to Q 1

Sol. 2.

Solution

Concept: Compare 2021 and 2022 values for each station to find where traffic fell.

Step-by-step:

- Agra: $450 \to 520$ **(increase)**
- Bareilly: $280 \to 310$ **(increase)**
- Chittor: $360 \to 340$ **(decrease by 20)**

- Dehradun: $200 \to 240$ **(increase)**
- Etawah: $150 \to 170$ **(increase)**

Only Chittor recorded a decrease from 2021 to 2022.

Why other options are wrong:

- (A) Bareilly increased from 280 to 310.
- (B) Dehradun increased from 200 to 240.
- (C) Etawah increased from 150 to 170.

Chittor: 360 $\to$ 340 (decrease). $\boxed{D}$

Answer: (D) Go Back to Q 2

Sol. 3.

Solution

Concept: Percentage increase $= \dfrac{\text{New} - \text{Old}}{\text{Old}} \times 100.$

Step-by-step:

$$\text{Percentage increase} = \frac{260 - 200}{200} \times 100 = \frac{60}{200} \times 100 = 30\%$$

Why other options are wrong:

- (B) 25% $\Rightarrow$ would mean an increase of $200 \times 0.25 = 50$, giving 250 (not 260).
- (C) 35% $\Rightarrow$ would mean an increase of $200 \times 0.35 = 70$, giving 270 (not 260).
- (D) 40% $\Rightarrow$ would mean an increase of $200 \times 0.40 = 80$, giving 280 (not 260).

Dehradun's traffic increased by exactly 30%. $\boxed{A}$

Answer: (A) Go Back to Q 3

Sol. 4.

Solution

Concept: Compare Agra's traffic across all three years.

Step-by-step:

- 2021: 450 thousand
- 2022: 520 thousand **(highest)**
- 2023: 480 thousand

Why other options are wrong:

- (A) 2023 — Agra had 480 in 2023, which is less than 520 in 2022.
- (C) 2021 — Agra had 450 in 2021, the lowest of the three years.
- (D) Equal in 2022 and 2023 — $520 \neq 480$, so they are not equal.

Agra's highest traffic was in 2022 (520 thousand). $\boxed{B}$

Answer: (B) Go Back to Q 4

Sol. 5.

Solution

Concept: Add the 2023 traffic figures for Bareilly and Etawah.

Step-by-step:

$$350 + 180 = 530 \text{ thousand}$$

Why other options are wrong:

- (A) 490 — uses 2022 values: $310 + 180 = 490$ (incorrect year).
- (B) 510 — uses mixed years or wrong values.
- (D) 550 — overstates by 20; likely uses 370 for Bareilly.

Combined 2023 traffic of Bareilly + Etawah = 530 thousand. $\boxed{C}$

Answer: (C) Go Back to Q 5

Sol. 6.

Solution

Concept: Identify the crop with the maximum production value in Punjab.

Punjab production data:

- Wheat: 100 lakh tonnes **(highest)**
- Rice: 80 lakh tonnes
- Maize: 60 lakh tonnes
- Soybean: 35 lakh tonnes
- Cotton: 25 lakh tonnes

Why other options are wrong:

- (A) Rice: 80 lakh tonnes — second highest, not the maximum.
- (B) Cotton: 25 lakh tonnes — lowest Punjab production.
- (C) Maize: 60 lakh tonnes — third highest.

Wheat (100 lakh tonnes) had the highest production in Punjab. $\boxed{D}$

Answer: (D) Go Back to Q 6

Sol. 7.

Solution

Concept: Sum all crop production values for Haryana.

Step-by-step:

$$80 + 60 + 40 + 25 + 45 = 250 \text{ lakh tonnes}$$

- Wheat: 80
- Rice: 60
- Maize: 40
- Soybean: 25
- Cotton: 45
- **Total = 250**

Why other options are wrong:

- (B) 260 — overstates by 10; likely adds Cotton as 55 instead of 45.
- (C) 240 — understates by 10; likely drops 10 from one crop.
- (D) 270 — overstates by 20; likely misreads Soybean as 35.

Total Haryana production = 250 lakh tonnes. $\boxed{A}$

Answer: (A) Go Back to Q 7

Sol. 8.

Solution

Concept: Compute the difference in Wheat production between Punjab and Haryana.

Step-by-step:

$$\text{Punjab Wheat} - \text{Haryana Wheat} = 100 - 80 = 20 \text{ lakh tonnes}$$

Why other options are wrong:

- (A) 15 — incorrect; $100 - 85 = 15$ but Haryana Wheat = 80, not 85.
- (C) 25 — incorrect; would require Haryana Wheat = 75.
- (D) 30 — incorrect; would require Haryana Wheat = 70.

Punjab exceeds Haryana in Wheat production by 20 lakh tonnes. $\boxed{B}$

Answer: (B) Go Back to Q 8

Sol. 9.

Solution

Concept: Compute total production for each state and simplify the ratio.

Step-by-step:

- Haryana total: $80 + 60 + 40 + 25 + 45 = 250$ lakh tonnes
- Punjab total: $100 + 80 + 60 + 35 + 25 = 300$ lakh tonnes
- Ratio: $250 : 300 = 5 : 6$

Why other options are wrong:

- (A) 3:4 = 0.75 — but $250/300 \approx 0.833$, not 0.75.
- (B) 4:5 = 0.80 — close but $250/300 = 0.8\overline{3} \neq 0.80$.
- (D) 7:9 $\approx$ 0.778 — not equal to $250/300$.

Ratio of Haryana to Punjab production = 5:6. $\boxed{C}$

Answer: (C) Go Back to Q 9

Sol. 10.

Solution

Concept: Calculate the absolute difference $|H - P|$ for each crop and find the minimum.

Step-by-step:

- Wheat: $|80 - 100| = 20$
- Rice: $|60 - 80| = 20$
- Maize: $|40 - 60| = 20$
- Soybean: $|25 - 35| = 10$ **(smallest)**
- Cotton: $|45 - 25| = 20$

Why other options are wrong:

- (A) Wheat — difference is 20, not the minimum.
- (B) Rice — difference is 20, equal to Wheat, Maize, and Cotton.
- (C) Maize — difference is 20, not the minimum.

Soybean has the smallest absolute difference (10 lakh tonnes). $\boxed{D}$

Answer: (D) Go Back to Q 10

Sol. 11.

Solution

Concept: Determine the relationship between Q and S using the family tree.

Step-by-step:

- Q is the son of P.
- S is the child of R (and U).
- P and R are siblings (condition iv).
- Children of siblings are **first cousins**.
- Therefore, Q and S are **cousins**.

Why other options are wrong:

- (B) Sibling — Q and T are siblings; Q and S have different parents.
- (C) Nephew/Niece — that would apply one generation up/down; Q and S are in the same generation.
- (D) Uncle/Aunt — P is S's uncle (P is R's brother); Q is one generation below P.

Q and S are cousins (children of siblings P and R). $\boxed{A}$

Answer: (A) Go Back to Q 11

Sol. 12.

Solution

Concept: Trace T's relationship to U through the family structure.

Step-by-step:

- T is the daughter of P (condition i).
- P and R are siblings; so R is T's aunt.
- U is R's husband; so U is T's uncle-by-marriage.
- From U's perspective, T is U's **niece**.

Why other options are wrong:

- (A) Sister — T and R would need to share a parent; they do not (T is P's daughter, R is P's sister).

- (C) Daughter — T is P's daughter, not U's daughter; U has S as his child.
- (D) Cousin — cousin requires shared grandparents; T and U are in different generations.

T is the niece of U (T's aunt is R, who is U's wife). $\boxed{B}$

Answer: (B) Go Back to Q 12

Sol. 13.

Solution

Concept: Identify S's father from the given conditions.

Step-by-step:

- Condition (ii): R is the mother of S.
- Condition (iii): U is the husband of R.
- In the family structure, R and U are a married couple, and S is their child.
- Therefore, **U is the father of S**.

Why other options are wrong:

- (A) P — P is R's brother (uncle to S), not S's father.
- (B) T — T is P's daughter; T and S are cousins (same generation), not parent-child.
- (D) Q — Q is P's son; Q and S are cousins, not parent-child.

U is the father of S. $\boxed{C}$

Answer: (C) Go Back to Q 13

Sol. 14.

Solution

Concept: Determine the relationship between Q and T.

Step-by-step:

- Condition (i): P is the father of both Q and T.
- Q and T share the same father (P).

- Two people with the same parent are **siblings**.

Why other options are wrong:

- (A) Cousins — cousins have parents who are siblings; Q and T share the same parent (P).
- (B) Parent and Child — Q (male) and T (female) are both children of P; neither is the parent of the other.
- (C) Uncle and Niece — that relationship requires one to be the sibling of the other's parent.

Q and T are siblings (both children of P). $\boxed{D}$

Answer: (D) Go Back to Q 14

Sol. 15.

Solution

Concept: Count the children of P directly from the given conditions.

Step-by-step:

- Condition (i): P is the father of Q and T.
- No other condition assigns additional children to P.
- Therefore, P has exactly **2 children**: Q and T.

Why other options are wrong:

- (B) 1 — P has two named children (Q and T), not one.
- (C) 3 — no third child is mentioned for P.
- (D) 4 — no additional children are assigned to P.

P has 2 children: Q and T. $\boxed{A}$

Answer: (A) Go Back to Q 15

Sol. 16.

Solution

Concept: Apply the deduction chain to find W's project.

Step-by-step:

- From (i): W is from Mumbai.
- From (iv): Z is from Pune.
- Remaining cities for X and Y: Delhi and Hyderabad.
- From (v): X $\neq$ Hyderabad $\Rightarrow$ X=Delhi, Y=Hyderabad.
- From (ii): analyst from Delhi $\Rightarrow$ Technology, so X=Technology.
- From (iii): Y $\Rightarrow$ Healthcare.
- Remaining projects: {Infrastructure, Education} for W and Z.
- From (vi): W $\neq$ Infrastructure $\Rightarrow$ **W = Education**.

Why other options are wrong:

- (A) Technology — assigned to X (Delhi).
- (C) Healthcare — assigned to Y.
- (D) Infrastructure — assigned to Z (eliminated for W by condition vi).

W is assigned the Education project. $\boxed{B}$

Answer: (B) Go Back to Q 16

Sol. 17.

Solution

Concept: Identify which analyst is from Delhi using the deduction.

Step-by-step:

- W=Mumbai, Z=Pune (given by conditions i and iv).
- Remaining cities for X and Y: Delhi and Hyderabad.
- Condition (v): X $\neq$ Hyderabad $\Rightarrow$ X = **Delhi**.

Why other options are wrong:

- (A) W — W is from Mumbai (condition i).

- (B) Y — Y ends up in Hyderabad (the remaining city after X takes Delhi).
- (D) Z — Z is from Pune (condition iv).

X is from Delhi. $\boxed{C}$

Answer: (C) Go Back to Q 17

Sol. 18.

Solution

Concept: Identify who receives the Infrastructure project.

Step-by-step:

- X=Technology (from condition ii, X is from Delhi).
- Y=Healthcare (condition iii).
- Remaining: {Infrastructure, Education} for W and Z.
- From (vi): W $\neq$ Infrastructure $\Rightarrow$ W=Education and **Z=Infrastructure**.

Why other options are wrong:

- (A) W — W gets Education (condition vi eliminates Infrastructure for W).
- (B) X — X is assigned Technology.
- (C) Y — Y is assigned Healthcare.

Z is assigned the Infrastructure project. $\boxed{D}$

Answer: (D) Go Back to Q 18

Sol. 19.

Solution

Concept: Find the city of the Healthcare analyst (Y).

Step-by-step:

- From condition (iii): Y=Healthcare.
- W=Mumbai, Z=Pune, X=Delhi (from prior deductions).
- Y gets the only remaining city: **Hyderabad**.

Why other options are wrong:

- (B) Mumbai — W's city.
- (C) Delhi — X's city (X=Technology, not Healthcare).
- (D) Pune — Z's city.

The Healthcare analyst (Y) is from Hyderabad. $\boxed{A}$

Answer: (A) Go Back to Q 19

Sol. 20.

Solution

Concept: Evaluate each statement against the final assignment.

Final assignment: W(Mumbai, Education), X(Delhi, Technology), Y(Hyderabad, Healthcare), Z(Pune, Infrastructure).

Evaluation:

- (A) "Z is from Delhi" — **FALSE**; Z is from Pune.
- (B) "X is assigned Technology" — **TRUE**; X(Delhi) $\Rightarrow$ Technology.
- (C) "W is from Hyderabad" — **FALSE**; W is from Mumbai.
- (D) "Y is from Pune" — **FALSE**; Y is from Hyderabad.

Only statement (B) is true. $\boxed{B}$

Answer: (B) Go Back to Q 20

Answer Key — CAT DILR Sample Paper 19

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 — All 20 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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