

CAT Data Interpretation

Practice Paper · 20 Questions · 5 Sets

Total Questions 20	Total Sets 5	Recommended Time 45 minutes	Marking 4 options per question, single correct
------------------------------	------------------------	---------------------------------------	---

Instructions: This section consists of 5 Data Interpretation sets comprising a total of 20 multiple-choice questions. Each question carries four answer options (A, B, C, D), out of which only one is correct. Questions are numbered continuously from 1 to 20 across all sets.

SET 1 | Smart City Infrastructure Spending

Topic: Data Table (Growth, Ratio & Percentages)

EASY

Directions for Questions 1–4: Refer to the data presented below to answer the questions that follow.

The table represents the annual capital expenditure (in USD Millions) by a metropolitan government across four key smart city infrastructure sectors from 2021 to 2024.

Sector	2021	2022	2023	2024
Mass Transit	120	150	180	240
Sanitation & Water	80	90	110	150
Education Tech	200	220	250	300
Digital Security	50	60	80	110
Total Spending	450	520	620	800

Q1 Which infrastructure sector registered the highest percentage growth in spending from 2021 to 2024?

- A) Sanitation & Water
- B) Education Tech
- C) Digital Security
- D) Mass Transit

Q2 What is the average annual spending (in USD Millions) on Education Tech over the four-year period?

- A) 242.5
- B) 250.0
- C) 235.5
- D) 220.0

Q3 In the year 2023, the spending on Mass Transit accounted for approximately what percentage of the total capital expenditure for that year?

- A) 25%
- B) 27%
- C) 29%
- D) 31%

Q4

What is the ratio of the total spending on Sanitation & Water to the total spending on Digital Security over the entire four-year period?

A) 11 : 8

B) 43 : 30

C) 30 : 43

D) 41 : 30

SET 2 | Smartphone Manufacturing Operations

Topic: Mixed Chart (Bar + Line)

MEDIUM

Directions for Questions 5–8: Refer to the data presented below to answer the questions that follow.

A multinational electronics brand manufactures smartphones across five independent facilities (F1 to F5). The smartphones are classified strictly into two segments: "Flagship" and "Budget".

Production Volume (Bar Chart Data) — total annual production in thousands of units:

- F1 = 400
- F2 = 500
- F3 = 250
- F4 = 350
- F5 = 600

Segment Share (Line Chart Data) — % of total production that is "Flagship":

- F1 = 25%
- F2 = 20%
- F3 = 40%
- F4 = 30%
- F5 = 15%

Q5 Which facility produces the highest absolute number of Budget smartphones?

- A) F1
- B) F2
- C) F4
- D) F5

Q6 What is the overall percentage of Flagship smartphones produced across all five facilities combined?

- A) 21.5%
- B) 23.6%
- C) 25.2%
- D) 27.1%

Q7 What is the ratio of the number of Flagship units produced in F4 to the number of Budget units produced in F3?

- A) 2 : 3
- B) 7 : 10
- C) 3 : 4
- D) 21 : 25

Q8 If facility F2 increases its total production volume by 20% next year, but the share of its Flagship devices drops to 15%, what will be the absolute change in the volume of Flagship devices produced by F2?

- A) Increase of 10,000 units
- B) Decrease of 10,000 units
- C) Increase of 5,000 units
- D) Decrease of 5,000 units

SET 3 | Coffee Blend Formulations

Topic: Pie Chart + Ratio Table

MEDIUM

Directions for Questions 9–12: Refer to the data presented below to answer the questions that follow.

An artisanal roastery uses exactly 5,000 kg of raw coffee beans annually to formulate 5 signature blends (B1 to B5). Every blend consists strictly of two bean varieties: Arabica and Robusta.

Volume Distribution (Pie Chart Data) — % of the 5,000 kg across the 5 blends:

- B1 = 20%
- B2 = 30%
- B3 = 15%
- B4 = 25%
- B5 = 10%

Composition Ratios (Table Data) — Arabica : Robusta by weight within each blend:

- B1: 3 : 2
- B2: 7 : 3
- B3: 1 : 4
- B4: 3 : 7
- B5: 4 : 1

Q9 What is the total quantity of Arabica beans (in kg) used across all 5 blends combined?

- A) 2450
- B) 2575
- C) 2625
- D) 2750

Q10 Which signature blend utilizes the highest absolute quantity of Robusta beans?

- A) B2
- B) B3
- C) B4
- D) B5

Q11 What is the ratio of Arabica beans in blend B2 to the Robusta beans in blend B5?

- A) 10 : 1
- B) 21 : 2
- C) 11 : 2
- D) 5 : 1

Q12 If the procurement cost of Arabica beans is USD 10 per kg and Robusta beans is USD 6 per kg, what is the raw material cost for 1 kg of Blend B1?

- A) \$7.80
- B) \$8.00
- C) \$8.40
- D) \$8.80

SET 4 | Corporate Carbon Footprint

Topic: Scatter Plot Matrix

DIFFICULT

Directions for Questions 13–16: Refer to the data presented below to answer the questions that follow.

An ESG auditing firm plots the environmental footprint of six multinational companies (C1 to C6). X-axis: Annual Revenue (USD Billions). Y-axis: Annual Carbon Emissions (Million Metric Tons, MMT). The exact coordinate points (Revenue, Emissions) are given below.

Company	C1	C2	C3	C4	C5	C6
Revenue, Emissions	(20, 10)	(50, 20)	(30, 24)	(15, 12)	(40, 10)	(25, 25)

Note: Emission Intensity (EI) = Annual Carbon Emissions ÷ Annual Revenue.

Q13 Which company boasts the lowest Emission Intensity (i.e., the most revenue-efficient carbon footprint)?

- A) C1
- B) C4
- C) C5
- D) C6

Q14 An international regulatory body passes a resolution requiring companies to maintain an Emission Intensity strictly below 0.60 MMT per USD Billion. How many of these six companies currently fail to meet this target?

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

Q15 Company C2 implements a heavy restructuring phase for the next year: it pledges to reduce its absolute Carbon Emissions by exactly 25% while simultaneously growing its Revenue by 10%. What will be Company C2's new Emission Intensity?

- A) ~0.27
- B) ~0.30
- C) ~0.33
- D) ~0.36

Q16 What is the average revenue (in USD Billions) of the companies whose absolute carbon emissions strictly exceed 15 MMT?

- A) 32
- B) 35
- C) 38
- D) 40

Answer Key

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

Detailed Solutions & Shortcuts

SET 1: Smart City Infrastructure Spending

Solution Q1 [Answer: C]

Percentage growth formula: $(\text{Final} - \text{Initial}) / \text{Initial} \times 100$.

Mass Transit: $(240-120)/120 = 100\%$ Sanitation & Water: $(150-80)/80 = 87.5\%$

Education Tech: $(300-200)/200 = 50\%$ Digital Security: $(110-50)/50 = 120\%$

Shortcut: Compare multipliers — Digital Security goes from 50 to 110 (>2x, i.e. 2.2 times its initial value), making it the largest increase.

Solution Q2 [Answer: A]

Sum of Education Tech spending: $200+220+250+300 = 970$. Average = $970/4 = 242.5$.

Shortcut: Base-deviation method — take base 200; deviations are +0, +20, +50, +100 (sum 170, avg 42.5); total = $200+42.5 = 242.5$.

Solution Q3 [Answer: C]

Mass Transit in 2023 = 180; Total in 2023 = 620.

$180/620 \times 100 = 18/62 \times 100 \approx 29.03\%$.

Solution Q4 [Answer: B]

Total Sanitation & Water = $80+90+110+150 = 430$. Total Digital Security = $50+60+80+110 = 300$.

Ratio = $430 : 300 = 43 : 30$.

SET 2: Smartphone Manufacturing Operations

Solution Q5 [Answer: D]

Budget % = $100\% - \text{Flagship \%}$. Absolute Budget volumes:

F1: 75% of 400 = 300 F2: 80% of 500 = 400 F3: 60% of 250 = 150

F4: 70% of 350 = 245 F5: 85% of 600 = 510 — clearly the highest.

Shortcut: F5 holds both the maximum overall volume (600) and the largest Budget-share percentage (85%), so it dominates without detailed calculation.

Solution Q6 [Answer: B]

Absolute Flagship units per facility: F1 = $25\% \times 400 = 100$; F2 = $20\% \times 500 = 100$; F3 = $40\% \times 250 = 100$;

F4 = $30\% \times 350 = 105$; F5 = $15\% \times 600 = 90$. Total Flagships = 495k. Total volume = 2100k.

Weighted % = $495/2100 \times 100 \approx 23.57\%$.

Solution Q7 [Answer: B]

Flagships in F4 = 105. Budget in F3 = $60\% \times 250 = 150$.

Ratio = $105 : 150 = 7 : 10$ (dividing by 15).

Solution Q8 [Answer: B]

Initial F2 Flagship production = $20\% \times 500\text{k} = 100\text{k}$.

Next year F2 total production = $500\text{k} \times 1.20 = 600\text{k}$.

Next year F2 Flagship production = $15\% \times 600\text{k} = 90\text{k}$.

Net change = $90\text{k} - 100\text{k} = -10\text{k}$ units (decrease of 10,000 units).

SET 3: Coffee Blend Formulations

Pre-calculation grid (1% of 5,000 kg = 50 kg):

Blend	Total (kg)	Arabica (kg)	Robusta (kg)
B1	1000	600	400
B2	1500	1050	450
B3	750	150	600
B4	1250	375	875
B5	500	400	100

Solution Q9 [Answer: B]

Total Arabica = $600+1050+150+375+400 = 2575$ kg.

Solution Q10 [Answer: C]

Robusta allocations: B1=400, B2=450, B3=600, B4=875, B5=100. B4 is the highest.

Solution Q11 [Answer: B]

Arabica in B2 = 1050 kg. Robusta in B5 = 100 kg.

Ratio = $1050 : 100 = 10.5 : 1 = 21 : 2$.

Solution Q12 [Answer: C]

1 kg of B1 = 0.6 kg Arabica + 0.4 kg Robusta.

Cost = $(0.6 \times \$10) + (0.4 \times \$6) = 6 + 2.4 = \$8.40$.

SET 4: Corporate Carbon Footprint

Pre-calculation grid — Emission Intensity (Y/X):

Company	C1	C2	C3	C4	C5	C6
El (Emissions/Revenue)	0.50	0.40	0.80	0.80	0.25	1.00

Solution Q13 [Answer: C]

C5 clearly yields the lowest EI value (0.25).

Shortcut: On a Revenue–Emissions scatter plot, the minimum Emissions/Revenue ratio is the point farthest down-and-right, i.e. the lowest angle from the X-axis origin — C5 matches this position.

Solution Q14 [Answer: C]

The threshold requires EI strictly below 0.60. Companies failing ($EI \geq 0.60$): C3 (0.80), C4 (0.80), C6 (1.00).

Total = 3 companies.

Solution Q15 [Answer: A]

C2 initial parameters: Emissions = 20 MMT, Revenue = 50 Billion.

Revised Emissions = $20 \times 0.75 = 15$ MMT. Revised Revenue = $50 \times 1.10 = 55$ Billion.

Revised EI = $15/55 = 3/11 \approx 0.2727$.

Solution Q16 [Answer: B]

Companies with emissions exceeding 15 MMT: C2 (20), C3 (24), C6 (25).

Their revenues are 50, 30, and 25 respectively. Average = $(50+30+25)/3 = 105/3 = 35$ Billion.

SET 5: Inter-city Supply Chain Logistics

Data matrix reconstruction — let P, Q, R, S denote July/August volumes:

Clue 1: $P(\text{Jul}) = 100$. Clue 2: $Q(\text{Jul}) = Q(\text{Aug}) = q$. Clue 3: $R(\text{Aug}) = (4/3) \cdot R(\text{Jul})$; $R(\text{Jul}) + R(\text{Aug}) = 350 \rightarrow R(\text{Jul}) = 150, R(\text{Aug}) = 200$.

Clue 5: Total P = Total R = 350 $\rightarrow P(\text{Aug}) = 350 - 100 = 250$. Clue 4: $S(\text{Aug}) = q + 40$.

August total: $250 + q + 200 + (q+40) = 600 \rightarrow 2q = 110 \rightarrow q = 55$. So $Q(\text{Jul})=Q(\text{Aug})=55, S(\text{Aug})=95$.

July total: $100 + 55 + 150 + S(\text{Jul}) = 400 \rightarrow S(\text{Jul}) = 95$.

Month	P	Q	R	S	Total
July	100	55	150	95	400
August	250	55	200	95	600

Solution Q17 [Answer: C]

City S in July = 95 units (from the completed matrix).

Solution Q18 [Answer: C]

Total Q = $55+55 = 110$. Total S = $95+95 = 190$. Absolute difference = $|110-190| = 80$.

Solution Q19 [Answer: B]

P in August = 250; August total = 600. Percentage = $250/600 \times 100 = 41.667\% \approx 41.7\%$.

Solution Q20 [Answer: A]

R in July = 150; P in August = 250. Ratio = $150 : 250 = 3 : 5$.