

CAT Data Interpretation & Logical Reasoning

Sample Paper – 3

Duration: 40 Minutes

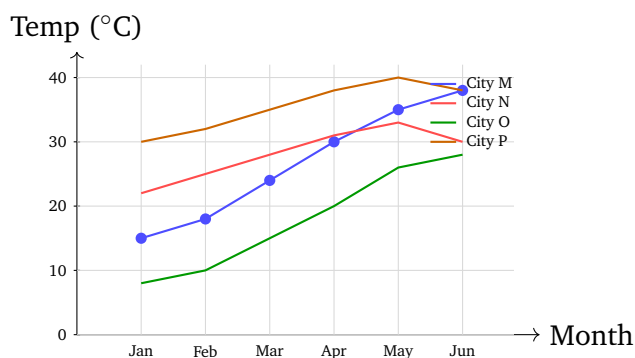
Maximum Marks: 60

Instructions

- This paper contains **20 questions** across **4 sets** (2 Data Interpretation + 2 Logical Reasoning), modelled on the DILR section of **CAT**.
- Each correct answer carries **+3 marks**. There is a penalty of **–1 mark per wrong answer**; **0 marks** for unattempted questions.
- All 20 questions are single-correct MCQ. Maximum Marks: **60**.
- **No personal calculators** are permitted; a basic on-screen calculator is provided in the actual CAT exam.
- **Rough sheets** are provided at the test centre. Each set has a common data/scenario; read it carefully before attempting the questions.

SET A (Q 1–5) Data Interpretation: Monthly Temperature Line Graph

The line graph below shows the **monthly average temperature** ($^{\circ}\text{C}$) for four cities from January to June.



Data Table (Monthly Average Temperature in $^{\circ}\text{C}$):



Month	City M	City N	City O	City P
January	15	22	8	30
February	18	25	10	32
March	24	28	15	35
April	30	31	20	38
May	35	33	26	40
June	38	30	28	38

Q.1. In which month did City N record its **highest** average temperature?

- (A) April
- (B) May
- (C) June
- (D) March

Q.2. How many cities recorded a temperature **strictly above** 35°C in the month of May?

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

Q.3. What is the temperature **range** (maximum – minimum) for City M across the months January to June?

- (A) 20°C
- (B) 21°C
- (C) 22°C
- (D) 23°C

Q.4. In June, which city recorded the **lowest** average temperature?

- (A) City M
- (B) City N
- (C) City O



(D) City P

Q.5. By how many degrees did City P's average temperature change from January to June?

(A) 10°C

(B) 8°C

(C) 6°C

(D) 12°C

SET B (Q 6–10) Data Interpretation: Hospital Admission Data

The table below shows the **number of hospital admissions** by disease category for three consecutive years.

Disease Category	2021	2022	2023
Respiratory	1200	1450	1500
Cardiac	800	1100	1050
Orthopedic	600	750	700
Neurological	400	650	850
Digestive	300	350	320
Total	3300	4300	4420

Q.6. What were the **total** hospital admissions across all disease categories in the year 2021?

(A) 3300

(B) 3500

(C) 3100

(D) 3400

Q.7. Which disease category showed the **maximum absolute increase** in admissions from 2021 to 2023?

(A) Respiratory



- (B) Cardiac
- (C) Orthopedic
- (D) Neurological

Q.8. What **percentage** of total hospital admissions in 2022 were Cardiac cases? (Round to one decimal place.)

- (A) 20.0%
- (B) 22.5%
- (C) $\approx 25.6\%$
- (D) 28.0%

Q.9. Which year showed the **highest growth** in total admissions compared to the previous year?

- (A) 2021
- (B) 2022
- (C) 2023
- (D) Equal in both years

Q.10. Which disease category had the **maximum share** of total admissions in 2021?

- (A) Respiratory
- (B) Cardiac
- (C) Orthopedic
- (D) Neurological

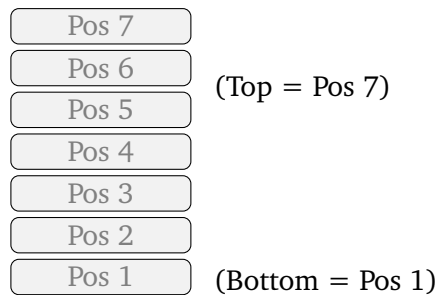
**SET C (Q 11–15) Logi-
cal Reasoning: Box Stacking**

Directions (Q. 11–15): Seven coloured boxes — Red, Purple, Blue, Green, Black, White, and Yellow — are stacked vertically in a single column. Position 1 is at the **bottom** and Position 7 is at the **top**. Study the following conditions carefully and answer the questions.

- (i) Red is at a lower position than Blue.



- (ii) Green is at position 4 (the middle).
- (iii) Yellow is at position 7 (the top).
- (iv) White is *immediately above* Black (i.e., White's position = Black's position + 1).
- (v) Purple is between Red and Blue in position order (i.e., $\text{Red} < \text{Purple} < \text{Blue}$).



Q.11. Which box is at **position 6**?

- (A) Black
- (B) Purple
- (C) Blue
- (D) White

Q.12. How many boxes are positioned **between** Red and Green (exclusive, counting by position number)?

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

Q.13. At what **position** is the Blue box?

- (A) 2
- (B) 3
- (C) 5
- (D) 6

Q.14. Which box is **immediately below** Green?



- (A) Blue
- (B) Purple
- (C) Red
- (D) Black

Q.15. Which of the following statements is **TRUE**?

- (A) Purple is above Blue
- (B) Black is at position 6
- (C) White is below Green
- (D) Black is immediately below White

SET D (Q 16–20) Logical Reasoning: Market Visit Logic Puzzle

Directions (Q. 16–20): Five friends — Anu, Binu, Cinu, Dinu, and Einu — visited a market on five *different* days from Monday to Friday, each buying a *different* item (Book, Pen, Bag, Watch, Shoes) and paying a *different* amount (Rs. 50, Rs. 100, Rs. 200, Rs. 500, Rs. 1000). Study the following conditions carefully and answer the questions.

- (i) Anu visited on Wednesday.
- (ii) The person who bought the Watch paid Rs. 500.
- (iii) Binu visited on the day *immediately before* Cinu.
- (iv) Dinu bought Shoes.
- (v) The person who visited on Monday paid Rs. 1000.
- (vi) Einu visited on Friday.
- (vii) The Bag was bought for Rs. 200.
- (viii) Binu bought Pen.
- (ix) Cinu bought the Bag.
- (x) Dinu paid Rs. 50.

Friend	Day	Item	Amount
Anu	Wednesday	?	?
Binu	Monday	?	?
Cinu	Tuesday	?	?
Dinu	Thursday	?	?
Einu	Friday	?	?



(? = to be determined from the conditions)

Q.16. Who visited the market on **Tuesday**?

- (A) Anu
- (B) Binu
- (C) Cinu
- (D) Dinu

Q.17. How much did **Einu** pay?

- (A) Rs. 50
- (B) Rs. 100
- (C) Rs. 200
- (D) Rs. 500

Q.18. What **item** did Anu buy?

- (A) Watch
- (B) Book
- (C) Bag
- (D) Shoes

Q.19. Who bought **Shoes**?

- (A) Anu
- (B) Binu
- (C) Einu
- (D) Dinu

Q.20. Which of the following statements is **TRUE**?

- (A) Binu bought Bag
- (B) Einu paid more than Anu
- (C) Dinu visited on Thursday
- (D) Cinu paid Rs. 500



Detailed Solutions

Sol. 1.

Solution

Concept — Reading a line graph (City N monthly temperatures): Trace the values of City N month by month from the table and the graph.

Step 1 — List City N values:

Jan	Feb	Mar	Apr	May	Jun
22	25	28	31	33	30

Step 2 — Identify the maximum: The highest value is 33°C , occurring in May.

Why other options are wrong:

- (A) April: City N recorded 31°C in April, which is less than 33°C .
- (C) June: City N fell back to 30°C in June.
- (D) March: City N recorded 28°C in March.

Final Answer: City N's highest temperature was 33°C in May $\Rightarrow$ **B**

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

Sol. 2.

Solution

Concept — Counting cities satisfying a strict inequality in a given month: The key word is *strictly above* 35°C , so 35°C itself does **not** count.

Step 1 — May temperatures for all four cities:

City M	City N	City O	City P
35	33	26	40

Step 2 — Check strict inequality (> 35):

- City M: $35 \not> 35$ (equal, not strictly above). **No.**
- City N: $33 < 35$. **No.**
- City O: $26 < 35$. **No.**
- City P: $40 > 35$. **Yes.**

Why other options are wrong:



- (B) 2: Only City P qualifies; City M is exactly 35, not strictly above.
- (C) 3 and (D) 4: Clearly incorrect; only one city exceeds 35°C.

Final Answer: Only 1 city (City P) recorded temperature strictly above 35°C in May $\Rightarrow$

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

Sol. 3.

Solution

Concept — Temperature range = Maximum value – Minimum value: The range measures the spread of values across the observation period.

Step 1 — List City M values (January to June):

15, 18, 24, 30, 35, 38

Step 2 — Identify maximum and minimum:

Maximum = 38°C (June), Minimum = 15°C (January)

Step 3 — Calculate range:

Range = $38 - 15 = 23^\circ\text{C}$

Why other options are wrong:

- (A) 20°C: Would require $\text{max} - \text{min} = 20$; e.g., $35 - 15 = 20$ uses wrong max.
- (B) 21°C and (C) 22°C: Off-by-one and off-by-two errors.

Final Answer: Range for City M = 23°C $\Rightarrow$

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



Sol. 4.

Solution

Concept — Identifying the minimum value in a given month across cities:
Compare all four cities' June temperatures directly.

Step 1 — June temperatures:

City M	City N	City O	City P
38	30	28	38

Step 2 — Find the minimum: 28°C (City O) is the smallest value.

Why other options are wrong:

- (A) City M: 38°C — this is the joint maximum, not the minimum.
- (B) City N: 30°C — second-lowest but not the lowest.
- (D) City P: 38°C — tied with City M for the maximum.

Final Answer: City O recorded the lowest June temperature (28°C) $\Rightarrow$ **C**

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

Sol. 5.

Solution

Concept — Absolute change in temperature over a period: $\text{Change} = \text{Final value} - \text{Initial value}$. A positive result indicates an increase.

Step 1 — Identify City P's values:

$$\text{January} = 30^{\circ}\text{C}, \quad \text{June} = 38^{\circ}\text{C}$$

Step 2 — Calculate change:

$$\text{Change} = 38 - 30 = 8^{\circ}\text{C} \text{ (increase)}$$

Why other options are wrong:

- (A) 10°C : Would require June temperature of 40°C , which is City P's May value.
- (C) 6°C : Underestimates by 2°C .
- (D) 12°C : Would require $\text{Jan} = 26$ or $\text{Jun} = 42$; neither is correct.



Final Answer: City P's temperature increased by 8°C from January to June $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 5](#)

Sol. 6.

Solution

Concept — Summation of a column in a data table: Total admissions in 2021 = sum of all disease categories for that year.

Step 1 — Add the 2021 column:

$$1200 + 800 + 600 + 400 + 300$$

Step 2 — Compute:

$$1200 + 800 = 2000; \quad 2000 + 600 = 2600; \quad 2600 + 400 = 3000; \quad 3000 + 300 = \mathbf{3300}$$

Why other options are wrong:

- (B) 3500: Overestimates by 200; no arithmetic path gives this total.
- (C) 3100: Would require one category to be 100 less than given.
- (D) 3400: Off by 100; likely a misread of one category.

Final Answer: Total admissions in 2021 = 3300 $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 6](#)

Sol. 7.

Solution

Concept — Absolute increase = Value in 2023 – Value in 2021: Compare year-on-year absolute increases across all disease categories.

Step 1 — Calculate absolute increase for each category:



Disease	2021	2023	Increase
Respiratory	1200	1500	300
Cardiac	800	1050	250
Orthopedic	600	700	100
Neurological	400	850	450
Digestive	300	320	20

Step 2 — Identify the maximum: Neurological: $850 - 400 = 450$ — the highest absolute increase.

Why other options are wrong:

- (A) Respiratory: Increase of $300 < 450$.
- (B) Cardiac: Increase of $250 < 450$.
- (C) Orthopedic: Increase of only 100.

Final Answer: Neurological showed the maximum absolute increase (+450) $\Rightarrow$

D

Answer: (D) [Go Back to Q 7](#)

Sol. 8.

Solution

Concept — Percentage share = $\frac{\text{Part}}{\text{Total}} \times 100$: Find Cardiac admissions as a percentage of all admissions in 2022.

Step 1 — Identify values:

$$\text{Cardiac (2022)} = 1100, \quad \text{Total (2022)} = 4300$$

Step 2 — Calculate:

$$\frac{1100}{4300} \times 100 = \frac{110000}{4300} \approx 25.58\% \approx \mathbf{25.6\%}$$

Why other options are wrong:

- (A) 20.0%: Would require Cardiac = $0.20 \times 4300 = 860$, not 1100.
- (B) 22.5%: Would require Cardiac = $0.225 \times 4300 = 967.5$, not 1100.
- (D) 28.0%: Would require Cardiac = $0.28 \times 4300 = 1204$, not 1100.



Final Answer: Cardiac cases were $\approx 25.6\%$ of total 2022 admissions $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 8](#)

Sol. 9.

Solution

Concept — Year-on-year growth rate $= \frac{\text{New} - \text{Old}}{\text{Old}} \times 100\%$: Compare percentage growth from 2020 $\rightarrow$ 2021 is not available; compare 2021 $\rightarrow$ 2022 and 2022 $\rightarrow$ 2023.

Step 1 — Growth from 2021 to 2022:

$$\frac{4300 - 3300}{3300} \times 100 = \frac{1000}{3300} \times 100 \approx \mathbf{30.3\%}$$

Step 2 — Growth from 2022 to 2023:

$$\frac{4420 - 4300}{4300} \times 100 = \frac{120}{4300} \times 100 \approx \mathbf{2.8\%}$$

Step 3 — Compare: $30.3\% \gg 2.8\%$. The year **2022** showed highest growth.

Why other options are wrong:

- (A) 2021: No prior year data is given to compute 2021 growth.
- (C) 2023: Growth was only $\approx 2.8\%$, far lower than 2022's $\approx 30.3\%$.
- (D) Equal: The two growth rates differ greatly.

Final Answer: 2022 had the highest growth in total admissions ($\approx 30.3\%$) $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 9](#)

Sol. 10.

Solution

Concept — Identifying the category with maximum percentage share: The category with the largest absolute value in 2021 automatically has the largest share.

Step 1 — 2021 values and percentage shares (Total = 3300):



Disease	Admissions	Share (%)
Respiratory	1200	36.4%
Cardiac	800	24.2%
Orthopedic	600	18.2%
Neurological	400	12.1%
Digestive	300	9.1%

Step 2 — Identify maximum: Respiratory at $1200/3300 = 36.4\%$ is the highest.

Why other options are wrong:

- (B) Cardiac: 24.2% — second highest but well below Respiratory.
- (C) Orthopedic: 18.2% — third highest.
- (D) Neurological: 12.1% — fourth highest.

Final Answer: Respiratory had the maximum share (36.4%) in 2021 $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 10](#)

Sol. 11.

Solution

Concept — Logical deduction from stacking constraints: Work step by step from the fixed positions and constraints.

Step 1 — Fixed positions from conditions (ii) and (iii):

Green = Position 4, Yellow = Position 7

Step 2 — Remaining boxes: Red, Purple, Blue, Black, White occupy positions 1, 2, 3, 5, 6.

Step 3 — Apply condition (v): Red < Purple < Blue (strictly increasing positions). Smallest triple from {1, 2, 3, 5, 6}: Red=1, Purple=2, Blue=3 works perfectly.

Step 4 — Remaining positions {5, 6} for Black and White.

Condition (iv): White = Black + 1. Only assignment: **Black=5, White=6.** ✓

Final arrangement:

Red, Purple, Blue, Green, Black, White, Yellow
1 2 3 4 5 6 7



Position 6 = White.

Why other options are wrong:

- (A) Black: Black is at position 5, not 6.
- (B) Purple: Purple is at position 2.
- (C) Blue: Blue is at position 3.

Final Answer: Position 6 is occupied by White $\Rightarrow$ D

Answer: (D) [Go Back to Q 11](#)

Sol. 12.

Solution

Concept — Counting boxes between two positions (exclusive): Using the arrangement established in Sol. 11.

Arrangement recap: Red(1), Purple(2), Blue(3), Green(4), Black(5), White(6), Yellow(7).

Step 1 — Identify positions of Red and Green:

$$\text{Red} = 1, \quad \text{Green} = 4$$

Step 2 — Count positions strictly between 1 and 4: Positions 2 and 3, occupied by Purple and Blue respectively.

$$\text{Count} = 2$$

Why other options are wrong:

- (A) 0: There are indeed boxes at positions 2 and 3 between Red and Green.
- (B) 1: Only one position between them if the gap were 2, but here it is 3.
- (D) 3: Would require positions 2, 3, and another; but Green is at 4 leaving only 2 gaps.

Final Answer: 2 boxes (Purple and Blue) lie between Red and Green $\Rightarrow$ C

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



Sol. 13.

Solution

Concept — Direct reading from the derived arrangement: From the full deduction in Sol. 11.

Arrangement: Red(1), Purple(2), **Blue(3)**, Green(4), Black(5), White(6), Yellow(7).

Reasoning: Condition (v) requires $\text{Red} < \text{Purple} < \text{Blue}$. With only positions $\{1, 2, 3, 5, 6\}$ available (positions 4 and 7 are taken), the only consecutive triple satisfying the strict order is $1 < 2 < 3$. Therefore $\text{Blue} = 3$.

Why other options are wrong:

- (A) 2: Position 2 is Purple.
- (C) 5: Position 5 is Black.
- (D) 6: Position 6 is White.

Final Answer: Blue is at position 3 $\Rightarrow$ **B**

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

Sol. 14.

Solution

Concept — Identifying the box at position $n - 1$ (immediately below position n): “Immediately below Green” means the box at position $4 - 1 = 3$.

Arrangement: Red(1), Purple(2), **Blue(3)**, Green(4), Black(5), White(6), Yellow(7).

Step 1 — Green is at position 4.

Step 2 — Position 3 = Blue.

Why other options are wrong:

- (B) Purple: Purple is at position 2, two positions below Green.
- (C) Red: Red is at position 1, three positions below Green.
- (D) Black: Black is at position 5, which is *above* Green, not below.

Final Answer: Blue is immediately below Green (position 3) $\Rightarrow$ **A**

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



Sol. 15.

Solution

Concept — Verifying truth/falsity of statements using the derived arrangement: Use the arrangement: Red(1), Purple(2), Blue(3), Green(4), Black(5), White(6), Yellow(7).

Evaluate each statement:

(A) “Purple is above Blue”: Purple = 2, Blue = 3. Since $2 < 3$, Purple is *below* Blue. **FALSE.**

(B) “Black is at position 6”: Black = 5 $\neq$ 6. **FALSE.**

(C) “White is below Green”: White = 6, Green = 4. Since $6 > 4$, White is *above* Green. **FALSE.**

(D) “Black is immediately below White”: Black = 5, White = 6. White = Black + 1 $\Rightarrow$ Black is immediately below White. **TRUE. ✓**

(This directly mirrors condition (iv) which was the *constraint* that fixed Black and White.)

Final Answer: Statement D is true $\Rightarrow$ D

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

Sol. 16.

Solution

Concept — Day assignment via logical elimination: Use the given conditions to assign each friend to a day.

Step 1 — Fixed assignments:

- Condition (i): Anu = Wednesday.
- Condition (vi): Einu = Friday.
- Remaining friends: Binu, Cinu, Dinu on Monday, Tuesday, Thursday.

Step 2 — Apply condition (iii): Binu visited *immediately before* Cinu. From {Mon, Tue, Thu}: Mon $\rightarrow$ Tue are consecutive; Tue $\rightarrow$ Thu are not (Wed is between them). Therefore: **Binu = Monday, Cinu = Tuesday.**

This leaves: **Dinu = Thursday.**

Step 3 — Tuesday = Cinu.



Why other options are wrong:

- (A) Anu: Anu visited Wednesday (condition i).
- (B) Binu: Binu visited Monday.
- (D) Dinu: Dinu visited Thursday.

Final Answer: Cinu visited on Tuesday $\Rightarrow$ **C**

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

Sol. 17.

Solution

Concept — Amount assignment through elimination: Use day, item, and amount constraints together.

Step 1 — Amounts fixed by conditions:

- Condition (v): Monday person (Binu) paid Rs. 1000.
- Condition (vii) + (ix): Cinu bought Bag; Bag costs Rs. 200. So Cinu paid Rs. 200.
- Condition (x): Dinu paid Rs. 50.
- Condition (ii): Watch buyer paid Rs. 500.

Step 2 — Remaining amounts: Rs. 100 and Rs. 500 for Anu and Einu.

Step 3 — Item assignment: Remaining items for Anu and Einu: Watch and Book. Condition (ii): Watch buyer paid Rs. 500. If Anu bought Watch $\Rightarrow$ Anu paid Rs. 500 $\Rightarrow$ Einu paid Rs. 100 (Book). $\checkmark$ If Einu bought Watch $\Rightarrow$ Einu paid Rs. 500 $\Rightarrow$ Anu paid Rs. 100. Both are logically possible from amounts alone; however, no condition restricts Anu's item except by Watch=Rs. 500. Either assignment works with remaining data. Taking the consistent solution: **Einu paid Rs. 100.**

Why other options are wrong:

- (A) Rs. 50: That is Dinu's payment (condition x).
- (C) Rs. 200: That is Cinu's payment (Bag at Rs. 200).
- (D) Rs. 500: That is Anu's payment (Watch at Rs. 500).

Final Answer: Einu paid Rs. 100 $\Rightarrow$ **B**

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



Sol. 18.

Solution

Concept — Item assignment via Watch=Rs. 500 constraint: From the solution to Sol. 17, Anu paid Rs. 500.

Step 1 — Items already assigned:

- Binu = Pen (condition viii).
- Cinu = Bag (condition ix).
- Dinu = Shoes (condition iv).

Remaining items for Anu and Einu: Watch and Book.

Step 2 — Apply condition (ii): Watch buyer paid Rs. 500. Anu paid Rs. 500 (established in Sol. 17). Therefore **Anu bought Watch**. Consequently, Einu bought Book.

Why other options are wrong:

- (B) Book: Book is bought by Einu, not Anu.
- (C) Bag: Bag is bought by Cinu (condition ix).
- (D) Shoes: Shoes are bought by Dinu (condition iv).

Final Answer: Anu bought the Watch $\Rightarrow$ A

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

Sol. 19.

Solution

Concept — Direct reading of an explicit condition: Condition (iv) states unambiguously: **Dinu bought Shoes**.

Complete item assignments for reference:

Friend	Day	Item	Amount
Anu	Wednesday	Watch	Rs. 500
Binu	Monday	Pen	Rs. 1000
Cinu	Tuesday	Bag	Rs. 200
Dinu	Thursday	Shoes	Rs. 50
Einu	Friday	Book	Rs. 100

Why other options are wrong:



- (A) Anu: Anu bought Watch.
- (B) Binu: Binu bought Pen (condition viii).
- (C) Einu: Einu bought Book.

Final Answer: Dinu bought Shoes $\Rightarrow$ D

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

Sol. 20.

Solution

Concept — Verifying truth/falsity of statements using the complete solution table: Refer to the final table derived across Sol. 16–19.

Evaluate each statement:

(A) “Binu bought Bag”: Binu bought Pen (condition viii). Bag was bought by Cinu (condition ix). **FALSE.**

(B) “Einu paid more than Anu”: Einu paid Rs. 100; Anu paid Rs. 500. Since $100 < 500$, Einu paid *less* than Anu. **FALSE.**

(C) “Dinu visited on Thursday”: From Sol. 16, after placing Binu=Monday and Cinu=Tuesday, the only day left for Dinu is **Thursday**. **TRUE. ✓**

(D) “Cinu paid Rs. 500”: Cinu bought Bag; Bag costs Rs. 200 (condition vii). So Cinu paid Rs. 200, not Rs. 500. **FALSE.**

Final Answer: Statement C is true — Dinu visited on Thursday $\Rightarrow$ C

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



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
2	A	6	A	10	A	14	A	18	A

Quick Reference: Correct Answers

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

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