

TANCET Data Analysis & Sufficiency

Sample Paper – 3

Duration: 24 Minutes

Maximum Marks: 20

Instructions

1. This paper contains **20 questions** modelled on the **Data Analysis & Sufficiency** section of TANCET MBA.
2. **Questions 1–10** are Data Interpretation questions with **4 options (A–D)**.
3. **Questions 11–20** are Data Sufficiency questions with **5 options (A–E)**.
4. For Data Sufficiency questions, the options are:
(A) Statement I alone is sufficient, but Statement II alone is not sufficient.
(B) Statement II alone is sufficient, but Statement I alone is not sufficient.
(C) Each statement alone is sufficient.
(D) Both statements together are not sufficient to answer the question.
(E) Both statements together are sufficient, but neither statement alone is sufficient.
5. Each correct answer carries **+1 mark**. Each wrong answer carries a penalty of $-\frac{1}{3}$ **mark**.
6. Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Part A: Data Interpretation

The table below shows student enrollment across five departments in a university over three academic years. Answer questions 1–5.

Department	2020–21	2021–22	2022–23
Engineering	4,200	4,500	4,800
MBA	1,800	2,100	2,400
Arts & Science	3,600	3,800	3,700
Law	900	1,050	1,200
Pharmacy	1,200	1,350	1,500
Total	11,700	12,800	13,600

Q1. Which departments showed a consistent year-on-year increase in enrollment across all three years?

- (A) Engineering, MBA, Pharmacy, and Law
- (B) Only Engineering



- (C) All five departments
- (D) Only MBA and Law

Q2. The total enrollment in 2022–23 is approximately what percentage more than the total enrollment in 2020–21?

- (A) 14%
- (B) 15%
- (C) 17%
- (D) 16%

Q3. In 2021–22, what fraction of the total enrollment did the MBA department represent?

- (A) $\frac{1}{5}$
- (B) $\frac{21}{128}$
- (C) $\frac{1}{6}$
- (D) $\frac{7}{40}$

Q4. How many more students were enrolled in Engineering than in Law over all three years combined?

- (A) 9,350
- (B) 9,850
- (C) 10,350
- (D) 10,850

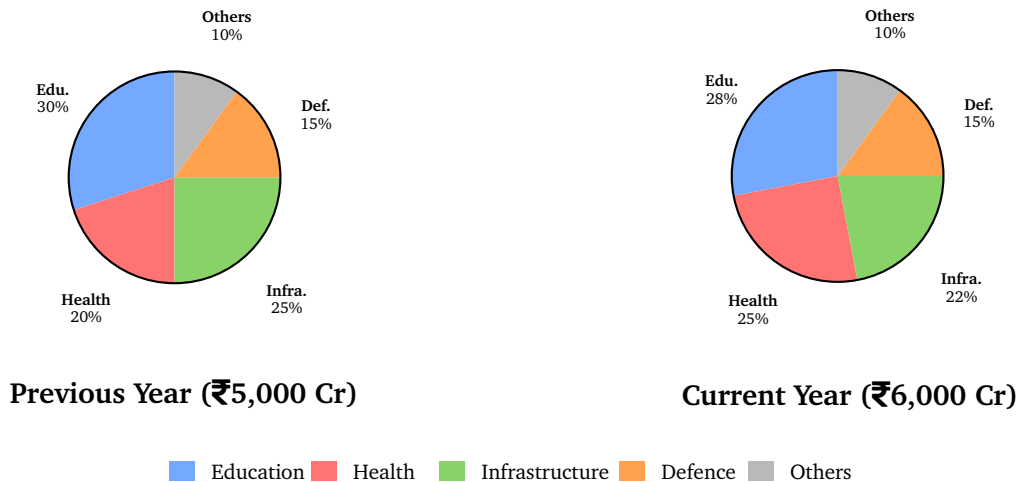
Q5. By how many students did enrollment in Arts & Science decline from 2021–22 to 2022–23?

- (A) 50
- (B) 100



- (C) 150
(D) 200

The pie charts below show the percentage-wise budget distribution across five categories for two consecutive years. Total budget: **Previous Year = ₹5,000 Crore; Current Year = ₹6,000 Crore.** Answer questions 6–10.



Q6. The actual amount spent on Health in the Current Year is:

- (A) ₹1,500 Crore
(B) ₹1,200 Crore
(C) ₹1,000 Crore
(D) ₹1,800 Crore

Q7. What is the increase in absolute expenditure on Education from the Previous Year to the Current Year?

- (A) ₹–60 Crore (a decrease)
(B) ₹100 Crore
(C) ₹120 Crore
(D) ₹180 Crore

Q8. In the Previous Year, the ratio of Infrastructure to Defence expenditure is:



- (A) 4 : 3
- (B) 3 : 2
- (C) 5 : 3
- (D) 2 : 1

Q9. Which of the following categories showed a decrease in percentage allocation but an increase in absolute amount from Previous Year to Current Year?

- (A) Only Health
- (B) Both Education and Infrastructure
- (C) Only Education
- (D) Only Infrastructure

Q10. The total expenditure on Defence across both years combined is:

- (A) ₹1,650 Crore
- (B) ₹1,800 Crore
- (C) ₹1,500 Crore
- (D) ₹2,000 Crore

Part B: Data Sufficiency

For each question below, decide which of the following options applies:

- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q11. How many workers does the factory currently employ?

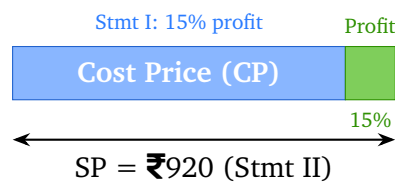


- I. Last year's workforce was increased by 20% to reach the current level.
 II. The current number of workers in the factory is 360.

- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
 (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
 (C) Each statement alone is sufficient.
 (D) Both statements together are not sufficient to answer the question.
 (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q12. What is the cost price of a watch?

- I. The watch is sold at a 15% profit over its cost price.
 II. The selling price of the watch is ₹920.



- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
 (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
 (C) Each statement alone is sufficient.
 (D) Both statements together are not sufficient to answer the question.
 (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q13. Is the integer m divisible by 9?

- I. $m = 9k$ for some positive integer k .
 II. The sum of the digits of m is 36.

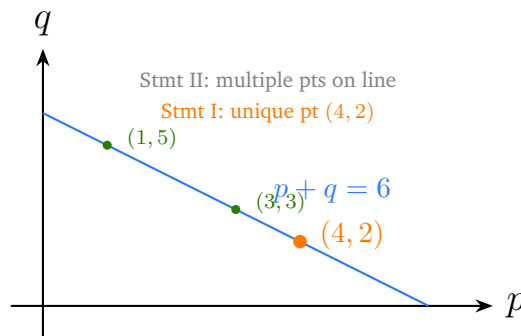
- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.



- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q14. What is the value of $5p + 3q$?

- I. $p = 4$ and $q = 2$.
- II. $p + q = 6$.

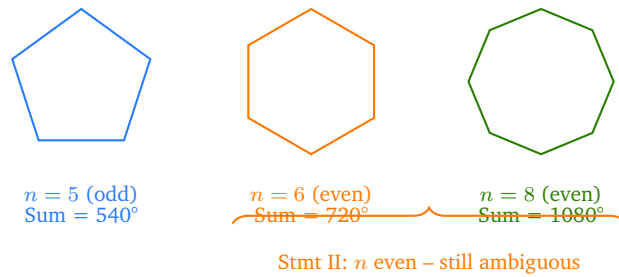


- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q15. What is the sum of interior angles of polygon P ?

- I. Polygon P has n sides.
- II. n is an even number.

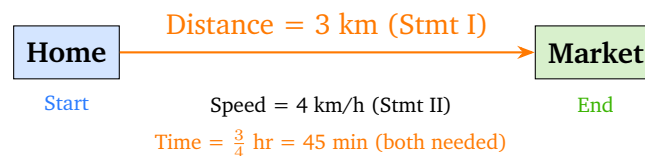




- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q16. How much time will Ram take to walk from his home to the market?

- I. The distance from his home to the market is 3 km.
- II. Ram walks at a speed of 4 km/h.



- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q17. How many students passed the exam?



- I. 35% of the students who appeared in the exam failed.
- II. 130 students passed the exam.

- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

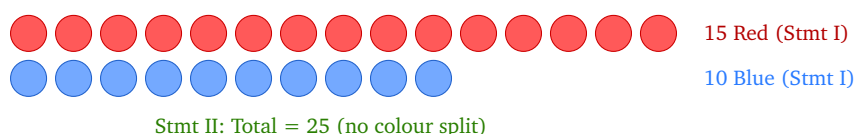
Q18. What is 15% of number Y ?

- I. $Y = 200$.
- II. 85% of Y is 170.

- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q19. What is the ratio of red balls to blue balls in a bag?

- I. The bag contains 15 red balls and 10 blue balls.
- II. The total number of balls in the bag is 25.



- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.

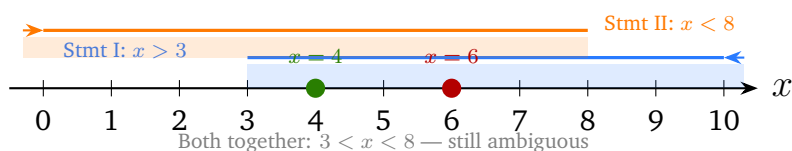


- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Q20. Is $x > 5$?

I. $x > 3$

II. $x < 8$



- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.
- (B) Statement II alone is sufficient, but Statement I alone is not sufficient.
- (C) Each statement alone is sufficient.
- (D) Both statements together are not sufficient to answer the question.
- (E) Both statements together are sufficient, but neither statement alone is sufficient.

Part A (Data Interpretation – Q1 to Q10):

Q	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Ans	A	D	B	C	B	A	D	C	B	A

Part B (Data Sufficiency – Q11 to Q20):

Q	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Ans	B	E	C	A	D	E	B	C	A	D



Detailed Solutions

Part A: Data Interpretation – Solutions

Solution 1 (Q1 – Departments with consistent increase)

Solution

Check each department for year-on-year growth (2020–21 → 2021–22 → 2022–23):

- **Engineering:** 4200, 4500, 4800 – increases each year. ✓
- **MBA:** 1800, 2100, 2400 – increases each year. ✓
- **Arts & Science:** 3600, 3800, **3700** – declined from 2021–22 to 2022–23. ✗
- **Law:** 900, 1050, 1200 – increases each year. ✓
- **Pharmacy:** 1200, 1350, 1500 – increases each year. ✓

Engineering, MBA, Law, and Pharmacy all show consistent increases. Arts & Science does not.

Answer: (A)

Solution 2 (Q2 – Percentage increase in total enrollment)

Solution

Total enrollment in 2020–21 = 11,700. Total enrollment in 2022–23 = 13,600.

$$\text{Percentage increase} = \frac{13600 - 11700}{11700} \times 100 = \frac{1900}{11700} \times 100 \approx 16.24\%$$

The closest option is **16%**.

Answer: (D)

Solution 3 (Q3 – MBA fraction of total in 2021–22)

Solution

MBA enrollment in 2021–22 = 2,100. Total enrollment in 2021–22 = 12,800.

$$\text{Fraction} = \frac{2100}{12800} = \frac{21}{128}$$

Verification: $21 \div 128 \approx 0.1641$, and $2100 \div 12800 \approx 0.1641$. ✓

Answer: (B)



Solution 4 (Q4 – Engineering vs Law over all three years)**Solution**

Engineering total = $4200 + 4500 + 4800 = 13,500$.

Law total = $900 + 1050 + 1200 = 3,150$.

$$\text{Difference} = 13500 - 3150 = 10,350 \text{ students}$$

Answer: (C)

Solution 5 (Q5 – Arts & Science decline)**Solution**

Arts & Science enrollment in 2021–22 = 3,800. In 2022–23 = 3,700.

$$\text{Decline} = 3800 - 3700 = 100 \text{ students}$$

Answer: (B)

Solution 6 (Q6 – Health expenditure, Current Year)**Solution**

Health allocation in Current Year = 25%. Total Current Year budget = ₹6,000 Crore.

$$\text{Health expenditure} = \frac{25}{100} \times 6000 = 1,500 \text{ Crore}$$

Answer: (A)

Solution 7 (Q7 – Absolute increase in Education expenditure)**Solution**

Previous Year: Education = 30% of 5000 = ₹1,500 Crore.

Current Year: Education = 28% of 6000 = ₹1,680 Crore.

$$\text{Increase} = 1680 - 1500 = 180 \text{ Crore}$$

Note: Although the percentage share fell (30% → 28%), the absolute amount increased



due to the larger budget.

Answer: (D)

Solution 8 (Q8 – Infrastructure to Defence ratio, Previous Year)

Solution

Previous Year: Infrastructure = 25%; Defence = 15%.

Since both are shares of the same total budget, the ratio of their expenditures equals the ratio of their percentages:

$$\text{Ratio} = \frac{25}{15} = \frac{5}{3} \implies 5 : 3$$

Answer: (C)

Solution 9 (Q9 – Decreased % share but increased absolute amount)

Solution

Check each category:

Category	PY %	CY %	% Change	PY Abs (₹Cr)	CY Abs (₹Cr)
Education	30	28	↓	1500	1680 ↑
Health	20	25	↑	1000	1500 ↑
Infrastructure	25	22	↓	1250	1320 ↑
Defence	15	15	same	750	900 ↑
Others	10	10	same	500	600 ↑

Both **Education** (30%→28%, ₹1500→₹1680) and **Infrastructure** (25%→22%, ₹1250→₹1320) showed a decrease in percentage allocation but an increase in absolute amount.

Answer: (B)

Solution 10 (Q10 – Total Defence expenditure both years)



Solution

Previous Year Defence = 15% of 5000 = ₹750 Crore.

Current Year Defence = 15% of 6000 = ₹900 Crore.

$$\text{Total} = 750 + 900 = 1,650 \text{ Crore}$$

Answer: (A)

Part B: Data Sufficiency – Solutions**Solution 11** (Q11 – Current number of factory workers)**Solution**

Using Statement I alone: The workforce increased by 20% last year to reach the current level. This tells us how the number changed in percentage terms, but gives no base figure. Without knowing last year's count, the current count cannot be determined. **Not sufficient.**

Using Statement II alone: The current number of workers is 360. This directly and completely answers the question. **Sufficient.**

Statement II alone is sufficient; Statement I alone is not.

Answer: (B)

Solution 12 (Q12 – Cost price of watch)**Solution**

Using Statement I alone: $SP = 1.15 \times CP$. Without knowing SP, CP cannot be found. **Not sufficient.**

Using Statement II alone: $SP = ₹920$. Without knowing the profit percentage, CP cannot be found. **Not sufficient.**

Using both together:

$$CP = \frac{SP}{1.15} = \frac{920}{1.15} = 800$$

Sufficient. Neither alone is sufficient, but both together are.

Answer: (E)

Solution 13 (Q13 – Is m divisible by 9?)

Solution

Using Statement I alone: $m = 9k$ for some positive integer k means m is a multiple of 9 by definition. The answer is definitively “Yes”. **Sufficient.**

Using Statement II alone: The digit sum of m is 36. Since 36 is divisible by 9, and divisibility by 9 is equivalent to the digit sum being divisible by 9, m is divisible by 9. The answer is definitively “Yes”. **Sufficient.**

Each statement alone is sufficient.

Answer: (C)

Solution 14 (*Q14 – Value of $5p + 3q$*)**Solution**

Using Statement I alone: $p = 4, q = 2$.

$$5p + 3q = 5(4) + 3(2) = 20 + 6 = 26$$

A unique, definitive answer. **Sufficient.**

Using Statement II alone: $p + q = 6$. This constrains p and q to a line; multiple pairs satisfy it: $(1, 5) \rightarrow 5(1) + 3(5) = 20$; $(4, 2) \rightarrow 26$; $(3, 3) \rightarrow 24$. $5p + 3q$ takes different values for different solutions. **Not sufficient.**

Statement I alone is sufficient; Statement II alone is not.

Answer: (A)

Solution 15 (*Q15 – Sum of interior angles of polygon P*)**Solution**

The sum of interior angles of an n -sided polygon is $(n - 2) \times 180^\circ$.

Using Statement I alone: Polygon P has n sides – this states the variable name but gives no specific numerical value of n . Infinitely many polygons satisfy this. **Not sufficient.**

Using Statement II alone: n is even – many even values are possible (4, 6, 8, 10, ...), each giving a different sum. **Not sufficient.**

Both together: n is an even number of sides – still many possibilities (hexagon $n = 6$: 720° ; octagon $n = 8$: 1080° ; etc.). No unique answer. **Not sufficient.**

Both statements together are not sufficient.

Answer: (D)



Solution 16 (Q16 – Time for Ram to walk home to market)**Solution**

Recall: $\text{Time} = \frac{\text{Distance}}{\text{Speed}}$.

Using Statement I alone: Distance = 3 km, but speed is unknown. Cannot compute time. **Not sufficient.**

Using Statement II alone: Speed = 4 km/h, but distance is unknown. Cannot compute time. **Not sufficient.**

Both together:

$$\text{Time} = \frac{3}{4} \text{ hour} = 45 \text{ minutes}$$

Sufficient. Neither alone is sufficient, but both together are.

Answer: (E)

Solution 17 (Q17 – How many students passed?)**Solution**

Using Statement I alone: 35% of students who appeared failed, meaning 65% passed. However, without knowing the total number of students who appeared, the exact count of students who passed cannot be determined. **Not sufficient.**

Using Statement II alone: 130 students passed. This directly and completely answers the question. **Sufficient.**

Statement II alone is sufficient; Statement I alone is not.

Answer: (B)

Solution 18 (Q18 – 15% of Y)**Solution**

Using Statement I alone: $Y = 200$.

$$15\% \text{ of } Y = \frac{15}{100} \times 200 = 30$$

Sufficient.

Using Statement II alone: $0.85 \times Y = 170 \implies Y = \frac{170}{0.85} = 200$.

$$15\% \text{ of } 200 = 30$$



Sufficient.

Each statement alone is sufficient.

Answer: (C)

Solution 19 (Q19 – Ratio of red to blue balls)

Solution

Using Statement I alone: Red = 15, Blue = 10.

$$\text{Ratio} = \frac{15}{10} = \frac{3}{2} = 3 : 2$$

A unique, definitive answer. **Sufficient.**

Using Statement II alone: Total = 25 balls. Without knowing how many are red and how many are blue, the ratio cannot be determined. (e.g., 20 red + 5 blue gives 4:1; 15 red + 10 blue gives 3:2.) **Not sufficient.**

Statement I alone is sufficient; Statement II alone is not.

Answer: (A)

Solution 20 (Q20 – Is $x > 5$?)

Solution

Using Statement I alone: $x > 3$. This allows $x = 4$ (not > 5) or $x = 7$ (> 5). Cannot determine definitively. **Not sufficient.**

Using Statement II alone: $x < 8$. This allows $x = 4$ (not > 5) or $x = 6$ (> 5). Cannot determine definitively. **Not sufficient.**

Both together: $3 < x < 8$. Within this range, x could be 4 (answer: No) or x could be 6 (answer: Yes). Still cannot determine definitively whether $x > 5$.

Both statements together are not sufficient.

Answer: (D)

— End of Paper —

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