

# TANCET Data Analysis & Sufficiency

## Sample Paper – 7

Duration: 24 Minutes

Maximum Marks: 20

### Instructions

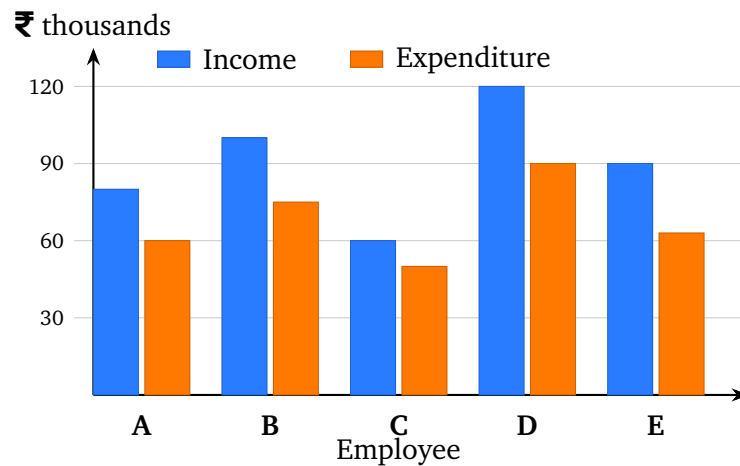
1. This paper contains **20 questions** modelled on the **Data Analysis & Sufficiency** section of TANCET MBA.
2. **Questions 1–10** are Data Interpretation questions with **4 options (A–D)**.
3. **Questions 11–20** are Data Sufficiency questions with **5 options (A–E)**.
4. For Data Sufficiency questions, the options are:  
(A) Statement I alone is sufficient, but Statement II is not.  
(B) Statement II alone is sufficient, but Statement I is not.  
(C) Each statement alone is sufficient.  
(D) Both statements together are not sufficient.  
(E) Both statements together are sufficient, but neither alone is.
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 the monthly income, expenditure, and savings (in ₹ thousands) of five employees. Answer questions 1–5.

| Employee | Income (₹ k) | Expenditure (₹ k) | Savings (₹ k) |
|----------|--------------|-------------------|---------------|
| A        | 80           | 60                | 20            |
| B        | 100          | 75                | 25            |
| C        | 60           | 50                | 10            |
| D        | 120          | 90                | 30            |
| E        | 90           | 63                | 27            |





Q1. Which employee has the highest monthly savings?

- (A) Employee B
- (B) Employee D
- (C) Employee E
- (D) Employee A

Q2. What is the savings rate (savings as % of income) of Employee B?

- (A) 20%
- (B) 22%
- (C) 25%
- (D) 28%

Q3. What is the total monthly income (in ₹ thousands) of all five employees combined?

- (A) 450
- (B) 440
- (C) 460
- (D) 470

Q4. What percentage of Employee E's monthly income is spent on expenditure?

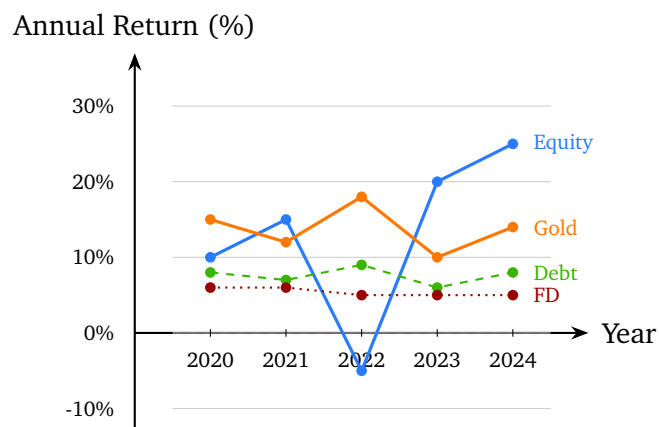


- (A) 65%
- (B) 68%
- (C) 72%
- (D) 70%

**Q5.** By how many thousand rupees does Employee A's monthly income exceed Employee C's monthly income?

- (A) ₹15k
- (B) ₹20k
- (C) ₹25k
- (D) ₹30k

The line graph below shows the annual returns (%) of four investment instruments from 2020 to 2024. Answer questions 6–10.



**Q6.** In which year did the Equity fund give the highest annual return?

- (A) 2024
- (B) 2023
- (C) 2021
- (D) 2022

**Q7.** What was the average annual return of the Debt fund across the five years (2020–2024)?



- (A) 7.0%
- (B) 7.2%
- (C) 7.6%
- (D) 8.0%

**Q8.** Which investment instrument gave a negative return in 2022?

- (A) Debt
- (B) Gold
- (C) FD
- (D) Equity

**Q9.** What is the difference (in percentage points) between Gold's highest and lowest annual returns across all five years?

- (A) 8
- (B) 6
- (C) 10
- (D) 4

**Q10.** In 2021, which investment instrument gave the lowest return?

- (A) Equity
- (B) Gold
- (C) FD
- (D) Debt

### 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.

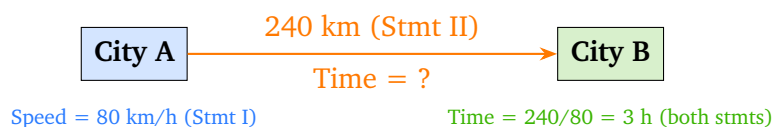
**Q11.** What is the value of  $m$ ?

- I.  $m$  is a factor of 24 and  $m > 6$ .
- II.  $m = 8$ .

- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q12.** How long did Person X take to travel from City A to City B?

- I. Person X traveled at an average speed of 80 km/h.
- II. The distance between City A and City B is 240 km.



- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q13.** What is 15% of a number  $z$ ?



I.  $z = 200$ .

II. 30% of  $z = 60$ .

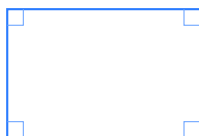
- (A) Statement I alone is sufficient, but Statement II alone is not sufficient.  
(B) Statement II alone is sufficient, but Statement I alone is not sufficient.  
(C) Each statement alone is sufficient.  
(D) Both statements together are not sufficient.  
(E) Both statements together are sufficient,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

**Q14.** Is quadrilateral  $ABCD$  a rectangle?

I. All four angles of  $ABCD$  are equal.

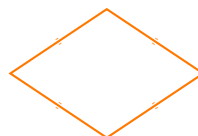
II. Opposite sides of  $ABCD$  are equal.

Stmt I: Rectangle ✓



All angles =  $90^\circ$

Stmt II: Could be rhombus



Opp sides equal

- (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.  
(E) Both statements together are sufficient, but neither alone is.

**Q15.** What is the LCM of two numbers  $a$  and  $b$ ?

I.  $a = 12$  and  $b$  is a multiple of 4.

II.  $b$  is greater than  $a$ .

- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q16.** What is the total number of students in the school?

- I. The ratio of boys to girls is 3 : 5.
- II. There are 240 boys in the school.

- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q17.** What is the value of  $a^2 - b^2$ ?

- I.  $a - b = 5$  and  $a + b = 15$ .
- II.  $a^2 + b^2 = 125$ .

- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q18.** Is  $x$  a positive number?

- I.  $x^2 = 16$ .
- II.  $|x| = 4$ .

- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q19.** What is the selling price of an item?

- I. The item has a marked price of ₹500.
- II. A discount of 20% is applied on the marked price and the selling price is ₹400.

- (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.
- (E) Both statements together are sufficient, but neither alone is.

**Q20.** What is the average of three consecutive even numbers?

- I. The smallest of the three consecutive even numbers is 14.
- II. The largest of the three consecutive even numbers is 18.

- (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.
- (E) Both statements together are sufficient, but neither alone is.





**Part A (Data Interpretation – Q1 to Q10):**

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

**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   | A   | D   | B   | C   |



## Detailed Solutions

### Part A: Data Interpretation – Solutions

**Solution 1** (*Q1 – Highest monthly savings*)

#### Solution

Monthly savings: A = ₹20k, B = ₹25k, C = ₹10k, D = ₹30k, E = ₹27k.

Employee D has the highest savings at ₹30k.

**Answer: (B)**

**Solution 2** (*Q2 – Savings rate of Employee B*)

#### Solution

Employee B: Savings = ₹25k, Income = ₹100k.

$$\text{Savings rate} = \frac{25}{100} \times 100 = 25\%$$

**Answer: (C)**

**Solution 3** (*Q3 – Total monthly income of all employees*)

#### Solution

Total income = 80 + 100 + 60 + 120 + 90 = 450 thousand.

**Answer: (A)**

**Solution 4** (*Q4 – Expenditure as % of income for Employee E*)

#### Solution

Employee E: Expenditure = ₹63k, Income = ₹90k.

$$\text{Percentage} = \frac{63}{90} \times 100 = 70\%$$

**Answer: (D)**

**Solution 5** (*Q5 – A's income exceeds C's income by*)



**Solution**

Income of A = ₹80k; Income of C = ₹60k.

$$\text{Difference} = 80 - 60 = 20\text{k}$$

**Answer: (B)**

**Solution 6** (Q6 – Equity's highest annual return year)**Solution**

Equity annual returns: 2020 = 10%, 2021 = 15%, 2022 = -5%, 2023 = 20%, 2024 = 25%.

The highest return is 25% in **2024**.

**Answer: (A)**

**Solution 7** (Q7 – Average annual return of Debt fund)**Solution**

Debt returns: 2020 = 8%, 2021 = 7%, 2022 = 9%, 2023 = 6%, 2024 = 8%.

$$\text{Average} = \frac{8 + 7 + 9 + 6 + 8}{5} = \frac{38}{5} = 7.6\%$$

**Answer: (C)**

**Solution 8** (Q8 – Negative return in 2022)**Solution**

Returns in 2022: Equity = -5%, Debt = 9%, Gold = 18%, FD = 5%.

Only **Equity** gave a negative return (-5%) in 2022.

**Answer: (D)**

**Solution 9** (Q9 – Gold: highest minus lowest annual return)

**Solution**

Gold returns: 2020 = 15%, 2021 = 12%, 2022 = 18%, 2023 = 10%, 2024 = 14%.

Maximum = 18% (2022); Minimum = 10% (2023).

$$\text{Difference} = 18 - 10 = 8 \text{ percentage points}$$

**Answer: (A)**

**Solution 10** (Q10 – Lowest return in 2021)**Solution**

Returns in 2021: Equity = 15%, Gold = 12%, Debt = 7%, FD = 6%.

FD gave the lowest return at 6% in 2021.

**Answer: (C)**

**Part B: Data Sufficiency – Solutions****Solution 11** (Q11 – Value of  $m$ )**Solution**

**Using Statement I alone:** Factors of 24 greater than 6: {8, 12, 24}. There are multiple values. Cannot uniquely determine  $m$ . **Not sufficient.**

**Using Statement II alone:**  $m = 8$  is directly given. Uniquely determines  $m$ . **Sufficient.**  
Statement II alone is sufficient; Statement I alone is not.

**Answer: (B)**

**Solution 12** (Q12 – Travel time from City A to City B)**Solution**

Recall: Time = Distance  $\div$  Speed.

**Using Statement I alone:** Speed = 80 km/h, but distance is unknown. Cannot find time. **Not sufficient.**

**Using Statement II alone:** Distance = 240 km, but speed is unknown. Cannot find time. **Not sufficient.**



Both together:

$$\text{Time} = \frac{240}{80} = 3 \text{ hours}$$

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

**Answer: (E)**

### Solution 13 (Q13 – 15% of $z$ )

#### Solution

**Using Statement I alone:**  $z = 200$ . 15% of 200 =  $0.15 \times 200 = 30$ . **Sufficient.**

**Using Statement II alone:** 30% of  $z = 60 \Rightarrow z = \frac{60}{0.30} = 200$ . 15% of 200 = 30. **Sufficient.**

Each statement alone is sufficient.

**Answer: (C)**

### Solution 14 (Q14 – Is $ABCD$ a rectangle?)

#### Solution

**Using Statement I alone:** All four angles of  $ABCD$  are equal. The sum of interior angles of any quadrilateral is  $360^\circ$ . If all four are equal, each angle =  $360^\circ/4 = 90^\circ$ . A quadrilateral with all four right angles is a rectangle. **Sufficient.**

**Using Statement II alone:** Opposite sides of  $ABCD$  are equal. This is the property of a parallelogram. A parallelogram can be a rectangle, but it could also be a rhombus (all sides equal) or a general parallelogram that is not a rectangle. **Not sufficient.**

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

**Answer: (A)**

### Solution 15 (Q15 – LCM of $a$ and $b$ )

#### Solution

**Using Statement I alone:**  $a = 12$ ;  $b$  is a multiple of 4, so  $b \in \{4, 8, 12, 16, 20, \dots\}$ .  $\text{LCM}(12, 4) = 12$ ,  $\text{LCM}(12, 8) = 24$ ,  $\text{LCM}(12, 16) = 48$ , etc. LCM varies. **Not sufficient.**

**Using Statement II alone:**  $b > 12$  (since  $b > a = ?$ ; actually  $b > a$  is given but  $a$  is unknown). No specific value of  $b$  is known. **Not sufficient.**

**Both together:**  $a = 12$ ;  $b$  is a multiple of 4 and  $b > 12$ , so  $b \in \{16, 20, 24, 28, \dots\}$ .



$\text{LCM}(12, 16) = 48$ ,  $\text{LCM}(12, 20) = 60$ ,  $\text{LCM}(12, 24) = 24$ , etc. Still not uniquely determined. **Not sufficient.**

**Answer: (D)**

### Solution 16 (Q16 – Total students in school)

#### Solution

**Using Statement I alone:** Boys : Girls = 3 : 5, but the actual numbers are unknown. Total cannot be determined. **Not sufficient.**

**Using Statement II alone:** 240 boys, but the number of girls is unknown. Total cannot be determined. **Not sufficient.**

**Both together:** Let boys =  $3k$  and girls =  $5k$ . Then  $3k = 240 \Rightarrow k = 80$ . Girls =  $5 \times 80 = 400$ . Total =  $240 + 400 = 640$ . **Sufficient.**

Neither alone is sufficient, but both together are.

**Answer: (E)**

### Solution 17 (Q17 – Value of $a^2 - b^2$ )

#### Solution

**Using Statement I alone:**  $a - b = 5$  and  $a + b = 15$ .

$$a^2 - b^2 = (a - b)(a + b) = 5 \times 15 = 75$$

Uniquely determined. **Sufficient.**

**Using Statement II alone:**  $a^2 + b^2 = 125$ . Many pairs  $(a, b)$  satisfy this (e.g.,  $a = 10, b = 5$  gives  $a^2 + b^2 = 125$  and  $a^2 - b^2 = 75$ ; but  $a = \sqrt{125}, b = 0$  gives  $a^2 - b^2 = 125$ ). Without knowing  $a - b$  or  $a + b$ ,  $a^2 - b^2$  is not uniquely determined. **Not sufficient.**

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

**Answer: (A)**

### Solution 18 (Q18 – Is $x$ a positive number?)



**Solution**

**Using Statement I alone:**  $x^2 = 16 \Rightarrow x = +4$  or  $x = -4$ . Sign of  $x$  unknown. **Not sufficient.**

**Using Statement II alone:**  $|x| = 4 \Rightarrow x = +4$  or  $x = -4$ . Sign of  $x$  unknown. **Not sufficient.**

**Both together:** Combining  $x^2 = 16$  and  $|x| = 4$  still gives  $x = \pm 4$ . Cannot determine whether  $x$  is positive. **Not sufficient.**

**Answer: (D)**

**Solution 19** (Q19 – Selling price of item)**Solution**

**Using Statement I alone:** Marked price = 500, but no discount information is given. Selling price cannot be determined. **Not sufficient.**

**Using Statement II alone:** The selling price is directly stated as ₹400. **Sufficient.**

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

**Answer: (B)**

**Solution 20** (Q20 – Average of three consecutive even numbers)**Solution**

**Using Statement I alone:** Smallest even number = 14. The three consecutive even numbers are 14, 16, 18.

$$\text{Average} = \frac{14 + 16 + 18}{3} = \frac{48}{3} = 16$$

**Sufficient.**

**Using Statement II alone:** Largest even number = 18. The three consecutive even numbers are 14, 16, 18.

$$\text{Average} = \frac{14 + 16 + 18}{3} = 16$$

**Sufficient.**

Each statement alone is sufficient.

**Answer: (C)**

— End of Paper —



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