

CAT 2024 DILR Question Paper PDF (November 24, 2024) (Shift 2)

Instructions [1 - 5]: The numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 are placed in ten slots of the following grid based on the conditions below.

	Column 1	Column 2	Column 3	Column 4
Row 1				
Row 2				
Row 3				
Row 4				

1. Numbers in any row appear in an increasing order from left to right.

2. Numbers in any column appear in a decreasing order from top to bottom.

3. 1 is placed either in the same row or in the same column as 10.

4. Neither 2 nor 3 is placed in the same row or in the same column as 10.

5. Neither 7 nor 8 is placed in the same row or in the same column as 9.

6. 4 and 6 are placed in the same row.
1. What is the row number which has the least sum of numbers placed in that row?

2. Which of the following statements MUST be true?

I. 10 is placed in a slot in Row 1.

II. 1 is placed in a slot in Row 4.

A. Both I and II

B. Neither I nor II

C. Only II

D. Only I

3. Which of the following statements MUST be true?

I. 2 is placed in a slot in Column 2.

II. 3 is placed in a slot in Column 3.

A. Only I

B. Both I and II

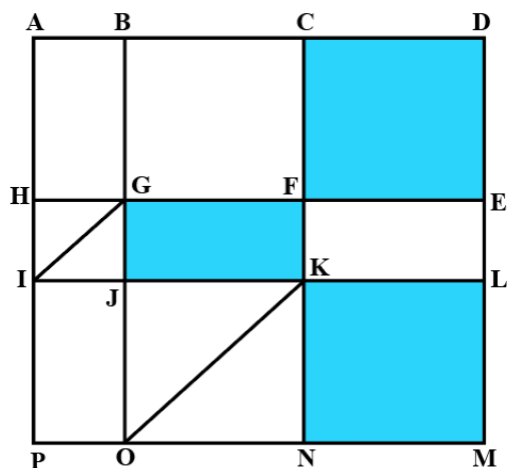
C. Neither I nor II

D. Only II

4. For how many slots in the grid, placement of numbers CANNOT be determined with certainty?

5. What is the sum of the numbers placed in Column 4?

Instructions [6 - 9]: Refer to the schematic diagram of walkways and lakes (rectangles) below.
Distances: OP = 150 m, ON = MN = 300 m, ML = 400 m, EL = 200 m, DE = 400 m.

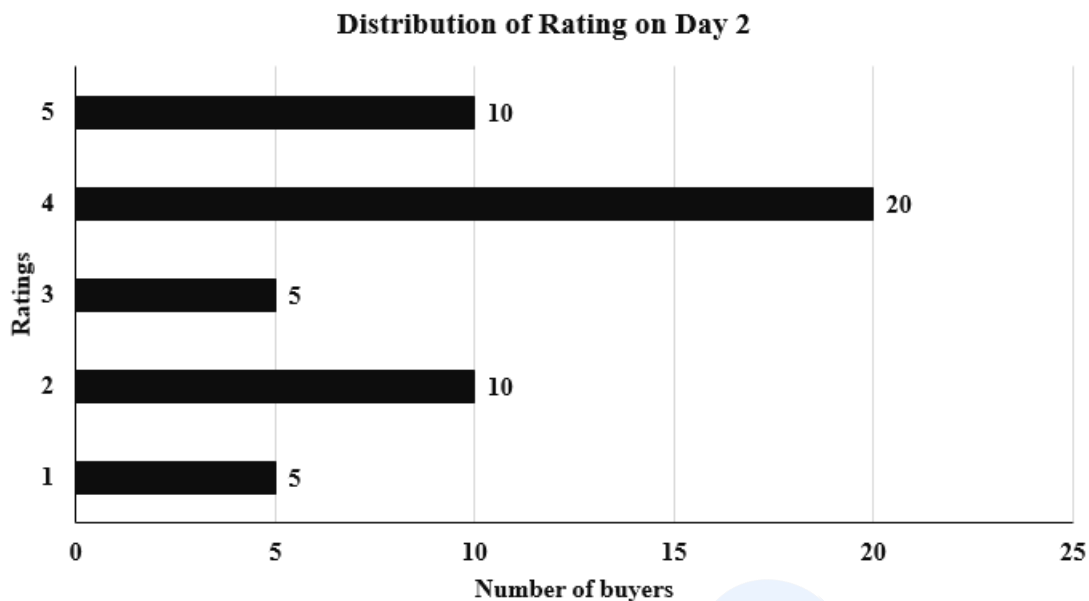


Facilities:

1. The only entry/exit point is at C.
 2. Residences are located on path AH and ML; four are at A, H, M, and L.
 3. Post office is at P; Bank is at B.
6. One resident whose house is located at L, needs to visit the post office as well as the bank. What is the minimum distance (in m) he has to walk starting from his residence and returning to his residence after visiting both the post office and the bank?
- A. 2700
B. 3200
C. 3000
D. 3400
7. One person enters the gated area and decides to walk as much as possible before leaving the area without walking along any path more than once and always walking next to one of the lakes. Note that he may cross a point multiple times. How much distance (in m) will he walk within the gated area?
8. One resident takes a walk within the gated area starting from A and returning to A without going through any point (other than A) more than once. What is the maximum distance (in m) she can walk in this way?
- A. 2800
B. 3000
C. 3800
D. 3200
9. Visitors coming for morning walks are allowed to enter as long as they do not pass by any of the residences and do not cross any point (except C) more than once. What is the maximum distance (in m) that such a visitor can walk within the gated area?

Instructions [10 - 13]: An online e-commerce firm receives daily integer product ratings from 1 through 5 given by buyers.

Average on Day 1 was 3. Cumulative average at the end of Day 2 was 3.1.



Information for Day 3:

- 100 buyers gave ratings.
- The modes of the ratings were 4 and 5.
- Number of buyers for each rating are non-zero multiples of 10.
- The same number of buyers gave ratings of 1 and 2; that number is half the number of buyers who gave a rating of 3.

10. How many buyers gave ratings on Day 1?

11. What is the daily average rating of Day 3?

- 3.6
- 3.0
- 3.2
- 3.5

12. What is the median of all ratings given on Day 3?

13. Which of the following is true about the cumulative average ratings of Day 2 and Day 3?

- The cumulative average of Day 3 increased by less than 5% from Day 2.
- The cumulative average of Day 3 decreased from Day 2.
- The cumulative average of Day 3 increased by a percentage between 5% and 8% from Day 2.
- The cumulative average of Day 3 increased by more than 8% from Day 2.

Instructions [38 - 41]

The two plots below give the following information about six firms A, B, C, D, E, and F for 2019 and 2023.

PAT: The firm's profits after taxes in Rs. crores,

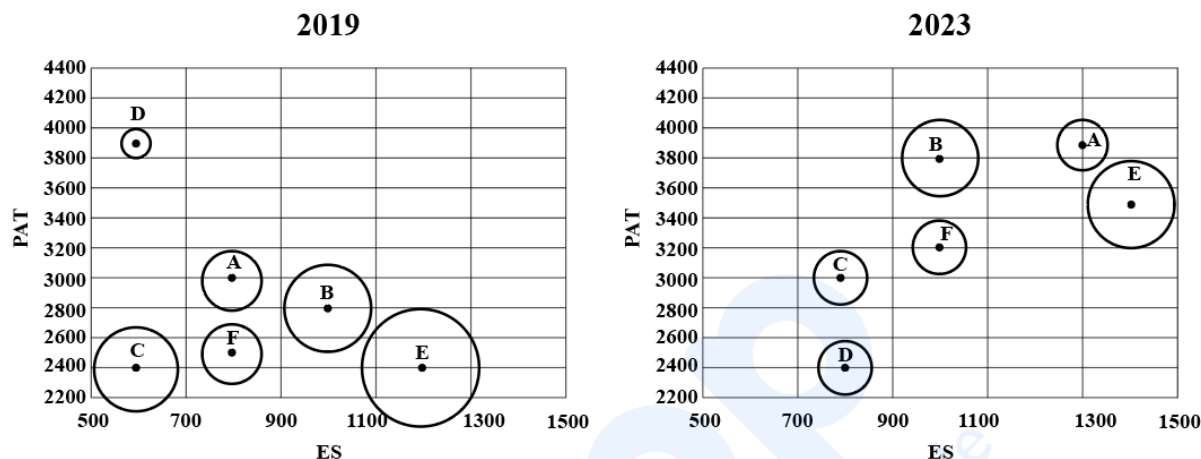
ES: The firm's employee strength, that is the number of employees in the firm, and

PRD: The percentage of the firm's PAT that they spend on Research and Development (R&D).

In the plots, the horizontal and vertical coordinates of point representing each firm gives their ES and PAT values respectively. The PRD values of each firm are

proportional to the areas around the points representing each firm. The areas are comparable between the two plots, i.e., equal areas in the two plots represent

the same PRD values for the two years.



14. Assume that the annual rate of growth in PAT over the previous year (ARG) remained constant over the years for each of the six firms. Which among the firms A, B, C, and E had the highest ARG?

- A. Firm A
- B. Firm C
- C. Firm E
- D. Firm B

15. The ratio of the amount of money spent by Firm C on R&D in 2019 to that in 2023 is closest to:

- A. 9 : 4
- B. 5 : 6
- C. 5 : 9
- D. 9 : 5

16. Which among the firms A, C, E, and F had the maximum PAT per employee in 2023?

- A. Firm E
- B. Firm A
- C. Firm F
- D. Firm C

17. Which among the firms C, D, E, and F had the least amount of R&D spending per employee in 2023?

- A. Firm F
- B. Firm D
- C. Firm C
- D. Firm E

Instructions [18 - 22]: Refer to the country visit data for Dheeraj, Samantha, and Nitesh.

Additional facts:

1. 32 countries visited by at least one of them.
2. USA (in ROW) is the only country visited by all three.
3. China (in Asia) visited by Dheeraj and Nitesh, but not Samantha.
4. France (in Europe) visited by Dheeraj and Samantha, but not Nitesh.
5. Half the countries visited by both Samantha and Nitesh are in Europe.

![[alt text]](<https://files.catbox.moe/5k452i.png>)

18. What best can be concluded about the number of players coached by Zara? (Note: This question belongs to a different set context [Gymnastics Coaching] potentially missing text in screenshot but present in explanation)

- A. Either 2 or 3 or 4
- B. Exactly 2
- C. Either 2 or 3
- D. Either 3

19. How many countries in Asia were visited by at least one of Dheeraj, Samantha and Nitesh?

20. How many countries in Europe were visited only by Nitesh?

21. How many countries in the ROW were visited by both Nitesh and Samantha?

22. How many countries in Europe were visited by exactly one of Dheeraj, Samantha and Nitesh?

- A. 10
- B. 5
- C. 14
- D. 12