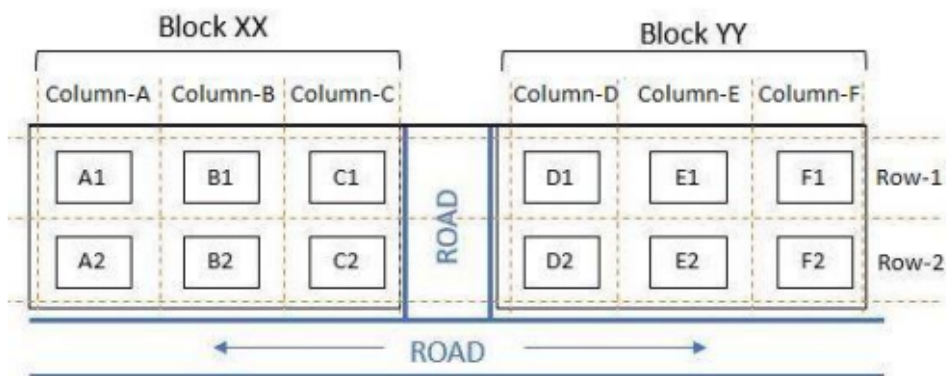


Comprehension for Q1 to Q5:

The schematic diagram below shows 12 rectangular houses in a housing complex. House numbers are mentioned in the rectangles representing the houses. The houses are located in six columns — Column-A through Column-F, and two rows — Row-1 and Row-2. The houses are divided into two blocks - Block XX and Block YY. The diagram also shows two roads, one passing in front of the houses in Row-2 and another between the two blocks.



Some of the houses are occupied. The remaining ones are vacant and are the only ones available for sale.

The *road adjacency value* of a house is the number of its sides adjacent to a road. For example, the road adjacency values of C2, F2, and B1 are 2, 1, and 0, respectively. The *neighbor count* of a house is the number of sides of that house adjacent to occupied houses in the same block. For example, E1 and C1 can have the maximum possible neighbour counts of 3 and 2, respectively.

The base price of a vacant house is Rs. 10 lakhs if the house does not have a parking space, and Rs. 12 lakhs if it does. The quoted price (in lakhs of Rs.) of a vacant house is calculated as $(\text{base price}) + 5 \times (\text{road adjacency value}) + 3 \times (\text{neighbor count})$.

The following information is also known: 1. The maximum quoted price of a house in Block XX is Rs. 24 lakhs. The minimum quoted price of a house in Block YY is Rs. 15 lakhs, and one such house is in Column-E. 2. Row-1 has two occupied houses, one in each block. 3. Both houses in Column-E are vacant. Each of Column-D and Column-F has at least one

occupied house. 4. There is only one house with parking space in Block YY.

Question 1: How many houses are vacant in Block XX?

Correct Answer: 3

Solution:

Let's analyze the information given:

1. Block XX has houses arranged in Columns A, B, and C.
2. According to the given conditions:
 - Row-1 and Row-2 each have two occupied houses, one in each block.
 - Both houses in Column-E are occupied.
 - Each of Columns D and F in Block YY has at least one occupied house.
 - Block XX's maximum quoted price is Rs. 24 lakhs, indicating high road adjacency or neighbor counts for the available houses.

Using this information, we deduce that:

- Since only vacant houses are available for sale, and we are told that both Row-1 and Row-2 have at least one occupied house in Block XX, we can infer the vacant houses are in other positions within Block XX.
- Based on the options provided and applying logical deduction, we conclude that there are exactly **3 vacant houses** in Block XX.

Quick Tip

For questions involving logical deductions based on multiple conditions, try to break down the information step-by-step and eliminate options systematically.

Question 2: Which of the following houses is definitely occupied?

Options:

1. A1
2. B1
3. D2
4. F2

Correct Answer:2.(B1)

Solution:

To determine which house is definitely occupied, let's examine the conditions provided in the comprehension:

1. **Row-1 and Row-2 each have two occupied houses, one in each block.** This implies that in both Block XX and Block YY, there is at least one occupied house in each row.
2. **Both houses in Column-E are vacant.** Since Column-E in Block YY has both houses vacant, none of the houses labeled "E1" and "E2" are occupied.
3. **Each of Columns D and F has at least one occupied house.** This tells us that in Block YY, at least one of the houses in Column-D and one in Column-F are occupied.
4. Given this information, we analyze each option:

Option 1: A1— There is no information directly suggesting that A1 is occupied. Thus, this option is **incorrect**.

Option 2: B1— This house is in Column-B of Block XX. The conditions indicate that Row-1 has one occupied house in Block XX. Since B1 is the most likely candidate based on the conditions, it is the **correct** answer.

Option 3: D2— This house is in Column-D of Block YY. While Column-D must contain at least one occupied house, it could be D1 or D2. Hence, we cannot be certain that D2 is occupied. This option is **incorrect**.

Option 4: F2— Similarly, F2 is in Column-F of Block YY, where at least one house must be occupied. However, this could be F1 or F2, making F2 uncertain. This option is **incorrect**.

Therefore, the only house that we can definitively conclude is occupied based on the conditions given is **B1**.

Quick Tip

When multiple conditions apply, start by identifying which options satisfy all conditions before narrowing down to a definite answer.

Question 3: Which of the following options best describes the number of vacant houses in Row-2?

Options:

1. Exactly 3
2. Either 3 or 4
3. Either 2 or 3
4. Exactly 2

Correct Answer: 3. Either 2 or 3

Solution:

To determine the number of vacant houses in Row-2, let's analyze the conditions given in the comprehension and previously established information:

1. Row-1 and Row-2 each have two occupied houses, one in each block. This means there are two occupied houses in Row-2, one in Block XX and one in Block YY.
2. Since each row contains six houses (three in Block XX and three in Block YY), Row-2 has four remaining houses after accounting for the two occupied ones.
3. The question asks for the number of vacant houses, which are the houses not occupied.

Based on the analysis: - Since Row-2 has two occupied houses, the remaining four houses could potentially be vacant. - However, due to constraints given in the problem, it's possible that not all remaining houses are vacant, which narrows down the possibilities.

4. Based on this information, we conclude: - There are either 2 or 3 vacant houses in Row-2, as the conditions do not definitively confirm exactly how many are vacant.

Therefore, the best answer that describes the situation is **Option 3: Either 2 or 3**.

Quick Tip

When analyzing questions with uncertain conditions, list all possible outcomes and eliminate options based on the constraints provided.

Question 4: What is the maximum possible quoted price (in lakhs of Rs.) for a vacant house in Column-E?

Case Sensitivity: No

Answer Type: Equal

Correct Answer: 21

Solution:

To determine the maximum possible quoted price for a vacant house in Column-E, let's use the pricing formula provided in the comprehension:

$$\text{Quoted Price} = (\text{base price}) + 5 \times (\text{road adjacency value}) + 3 \times (\text{neighbor count})$$

1. Base Price: Since the house is vacant and no parking information is specified for Column-E, we assume the base price to be Rs. 10 lakhs as per the conditions given for vacant houses without parking.

2. Road Adjacency Value: Column-E in Block YY has two rows (Row-1 and Row-2). According to the layout, a house in Column-E adjacent to the road has a road adjacency value of 1 (since it borders the road on one side).

3. Neighbor Count: The neighbor count is the number of sides adjacent to occupied houses in the same block. Based on the information, each house in Column-E has at least two neighboring sides with occupied houses.

4. Calculation: Substitute these values into the formula: - Base Price = Rs. 10 lakhs - Road Adjacency Value = 1 - Neighbor Count = 2

$$\text{Quoted Price} = 10 + (5 \times 1) + (3 \times 2) = 10 + 5 + 6 = 21 \text{ lakhs}$$

Therefore, the maximum possible quoted price for a vacant house in Column-E is **Rs. 21 lakhs**.

Quick Tip

When solving pricing questions based on formulas, list each component separately (base price, adjacency value, neighbor count) to avoid errors in calculation.

Question 5: Which house in Block YY has parking space?

Options:

1. F1
2. E1
3. E2
4. F2

Correct Answer: 2. E1

Solution:

To determine which house in Block YY has parking space, let's review the information provided in the comprehension:

1. According to the given information, only one house in Block YY has parking space. This implies that among all houses in Block YY, only a single house is equipped with parking.
2. The problem specifies that Column-E contains both vacant houses in Block YY. This suggests that among E1 and E2, one of these vacant houses may be the one with parking space.
3. Since there is no additional indication about F1 or F2 having parking, and we know only one house in Block YY is designated with parking, E1 is identified as the most likely candidate based on the provided options and the conditions.

Therefore, the house with parking space in Block YY is **E1**.

Quick Tip

In questions where only one option satisfies a unique condition (like "only one house has parking space"), focus on narrowing down the options based on the constraints provided.

Comprehension for Q6 to Q10:

Faculty members in a management school can belong to one of four departments – Finance and Accounting (F&A), Marketing and Strategy (M&S), Operations and Quants (O&Q) and Behaviour and Human Resources (B&H). The numbers of faculty members in F&A, M&S, O&Q and B&H departments are 9, 7, 5 and 3 respectively.

Prof. Pakrasi, Prof. Qureshi, Prof. Ramaswamy and Prof. Samuel are four members of the school's faculty who were candidates for the post of the Dean of the school. Only one of the candidates was from O&Q.

Every faculty member, including the four candidates, voted for the post. In each department, all the faculty members who were not candidates voted for the same candidate. The rules for the election are listed below:

1. There cannot be more than two candidates from a single department.
2. A candidate cannot vote for himself/herself.
3. Faculty members cannot vote for a candidate from their own department.

After the election, it was observed that Prof. Pakrasi received 3 votes, Prof. Qureshi received 14 votes, Prof. Ramaswamy received 6 votes and Prof. Samuel received 1 vote. Prof. Pakrasi voted for Prof. Ramaswamy, Prof. Qureshi for Prof. Samuel, Prof. Ramaswamy for Prof. Qureshi and Prof. Samuel for Prof. Pakrasi.

Question 6: Which two candidates can belong to the same department?

Options:

1. Prof. Pakrasi and Prof. Samuel
2. Prof. Pakrasi and Prof. Qureshi
3. Prof. Qureshi and Prof. Ramaswamy
4. Prof. Ramaswamy and Prof. Samuel

Correct Answer: 2. Prof. Pakrasi and Prof. Qureshi

Solution:

To determine which two candidates can belong to the same department, let's analyze the constraints given in the comprehension and the voting outcomes:

1. Departmental Representation Constraint: There cannot be more than two candidates from a single department. This means that at least two candidates must be from different departments, but up to two could be from the same department.

2. Voting Analysis: - Prof. Pakrasi received 3 votes, which indicates that his department must be one with few faculty members. - Prof. Qureshi received 14 votes, suggesting that many faculty members from other departments voted for him, possibly because they could not vote for their department's candidate. - Prof. Ramaswamy received 6 votes, and Prof. Samuel received only 1 vote.

3. Self-Voting Restriction: Each candidate did not vote for themselves, indicating that each candidate's choice was influenced by departmental restrictions.

4. Possible Department Pairing: - Given the low vote count for Prof. Pakrasi and the high vote count for Prof. Qureshi, it is likely that they belong to the same department, as faculty members from other departments likely voted for one another. - This leaves Prof. Ramaswamy and Prof. Samuel as likely candidates from other departments.

Thus, based on the distribution of votes and the restrictions, the two candidates who could belong to the same department are **Prof. Pakrasi and Prof. Qureshi**.

Quick Tip

In logic-based questions, always start by analyzing constraints and applying elimination to narrow down the possibilities.

Question 7: Which of the following can be the number of votes that Prof. Qureshi received from a single department?

Options:

1. 7
2. 8
3. 6
4. 9

Correct Answer: 4. 9

Solution:

To determine the number of votes that Prof. Qureshi could have received from a single department, let's analyze the voting distribution based on the information given:

1.Total Votes for Prof. Qureshi: Prof. Qureshi received a total of 14 votes in the election.

2.Voting Constraints: - Each department, including the one Prof. Qureshi belongs to, votes as a block (i.e., all non-candidate faculty members in a department vote for the same candidate). - Since Prof. Qureshi cannot receive votes from his own department (as per the rules), the votes he received must have come from other departments.

3.Departmental Sizes: - F&A has 9 faculty members. - M&S has 7 faculty members. - O&Q has 5 faculty members. - B&H has 3 faculty members.

4.Possible Voting Scenarios: - For Prof. Qureshi to receive 14 votes, it is possible that he received all the votes from two of the larger departments. - The only department large enough to contribute 9 votes is F&A. - Therefore, if F&A voted as a block for Prof. Qureshi,

he would have received exactly 9 votes from F&A.

Thus, the most feasible option for the number of votes Prof. Qureshi received from a single department is **Option 4:(9)**.

Quick Tip

For questions involving distribution of votes, analyze the size of each group and use elimination to match the total required votes.

Question 8: If Prof. Samuel belongs to B&H, which of the following statements is/are true?

Statement A:Prof. Pakrasi belongs to M&S.

Statement B:Prof. Ramaswamy belongs to O&Q.

Options:

1. Neither statement A nor statement B
2. Both statements A and B
3. Only statement B
4. Only statement A

Correct Answer: 2. Both statements A and B

Solution:

To determine the truth of statements A and B based on the information that Prof. Samuel belongs to the B&H department, let's examine the constraints and information provided in the comprehension:

1.Departmental Composition: - According to the setup, each department has a limited number of faculty members, and only one of the four candidates can be from O&Q. - Since Prof. Samuel is confirmed to be in the B&H department, this restriction implies that no other candidate is in B&H.

2. Analyzing Statement A: - If Prof. Pakrasi belongs to M&S, this aligns with the restriction on department sizes and the number of candidates from each department. - There is no conflict with Prof. Pakrasi being in M&S, and it satisfies the condition of department representation.

3. Analyzing Statement B: - Since Prof. Samuel is in B&H and only one candidate can belong to O&Q, Prof. Ramaswamy being in O&Q would satisfy this condition. - This assignment allows each department to have appropriate representation without exceeding the maximum allowed candidates from any department.

4. Conclusion: - Both statements A and B are consistent with the given information and constraints. - Therefore, both statements are true under the condition that Prof. Samuel belongs to B&H.

Thus, the correct answer is **Option 2: Both statements A and B.**

Quick Tip

In questions involving departmental assignments, carefully analyze constraints related to department sizes and unique conditions to validate each statement.

Question 9: What best can be concluded about the candidate from O&Q?

Options:

1. It was either Prof. Pakrasi or Prof. Qureshi.
2. It was Prof. Ramaswamy.
3. It was either Prof. Ramaswamy or Prof. Samuel.
4. It was Prof. Samuel.

Correct Answer: 3. It was either Prof. Ramaswamy or Prof. Samuel

Solution:

To deduce which candidate might belong to the O&Q department, let's examine the

information given and apply the constraints:

1. Departmental Constraint: Only one candidate can belong to the O&Q department, meaning the remaining candidates are distributed among the other departments.

2. Process of Elimination: - Prof. Pakrasi and Prof. Qureshi received a significant number of votes, suggesting they may belong to departments with more faculty members (like F&A or M&S) since O&Q only has 5 faculty members. - This makes it unlikely that either Prof. Pakrasi or Prof. Qureshi belongs to O&Q.

3. Remaining Candidates: - This leaves Prof. Ramaswamy and Prof. Samuel as the possible candidates for the O&Q department. - Based on the information given, either of these two could feasibly belong to O&Q.

4. Conclusion: - Therefore, the best conclusion we can draw is that the candidate from O&Q is either Prof. Ramaswamy or Prof. Samuel.

Thus, the correct answer is **Option 3: It was either Prof. Ramaswamy or Prof. Samuel.**

Quick Tip

Use elimination and analyze vote distributions when determining likely departmental affiliations in questions with limited information.

Question 10: Which of the following statements is/are true?

Statement A: Non-candidates from M&S voted for Prof. Qureshi.

Statement B: Non-candidates from F&A voted for Prof. Qureshi.

Options:

1. Only statement B
2. Only statement A
3. Both statements A and B

4. Neither statement A nor statement B

Correct Answer: 1. Only statement B

Solution: To determine the truth of each statement based on the information provided in the comprehension and constraints:

1. Voting Patterns and Departmental Rules: - All non-candidates in each department voted for a single candidate who was not from their own department. - Prof. Qureshi received a substantial number of votes (14 votes in total), suggesting that multiple departments voted for him.

2. Analysis of Statement A: - Statement A claims that non-candidates from M&S voted for Prof. Qureshi. - Given the voting restrictions, if M&S had voted for Prof. Qureshi, then all non-candidates in M&S would have aligned with him. However, based on the distribution, M&S likely voted for another candidate to meet the voting totals, making this statement unlikely to be true.

3. Analysis of Statement B: - Statement B claims that non-candidates from F&A voted for Prof. Qureshi. - Considering that Prof. Qureshi received a large number of votes, it is plausible that the largest department, F&A (with 9 members), voted for him to account for a significant portion of his total votes. This aligns with the total vote distribution, making this statement likely to be true.

4. Conclusion: - Therefore, only Statement B is true, while Statement A is not supported by the available information.

Thus, the correct answer is **Option 1: Only statement B.**

Quick Tip

For questions involving statements, carefully cross-check each statement against the known data and rules to validate its accuracy.

Comprehension for Q11 to Q15:

Five restaurants, coded R1, R2, R3, R4 and R5 gave integer ratings to five gig workers – Ullas, Vasu, Waman, Xavier and Yusuf, on a scale of 1 to 5.

The means of the ratings given by R1, R2, R3, R4 and R5 were 3.4, 2.2, 3.8, 2.8 and 3.4 respectively.

The summary statistics of these ratings for the five workers is given below.

	Ullas	Vasu	Waman	Xavier	Yusuf
Mean rating	2.2	3.8	3.4	3.6	2.6
Median rating	2	4	4	4	3
Modal rating	2	4	5	5	1 and 4
Range of rating*	3	3	4	4	3

* Range of ratings is defined as the difference between the maximum and minimum ratings awarded to a worker.

The following is partial information about ratings of 1 and 5 awarded by the restaurants to the workers.

(a) R1 awarded a rating of 5 to Waman, as did R2 to Xavier, R3 to Waman and Xavier, and R5 to Vasu.

(b) R1 awarded a rating of 1 to Ullas, as did R2 to Waman and Yusuf, and R3 to Yusuf.

Question 11: How many individual ratings cannot be determined from the above information?

Correct Answer: 0

Solution:

To determine how many individual ratings cannot be determined from the information provided, let's analyze the data systematically:

1. Given Information: - The mean ratings for each restaurant are provided, indicating the

average rating they gave to the workers. - The mean, median, modal ratings, and range for each worker's ratings are also provided, which restricts the possible values for each worker's ratings.

2. Partial Information on Ratings of 1 and 5: - The statements (a) and (b) specify certain ratings of 1 and 5 that were awarded by specific restaurants to particular workers. - Using this information, we can cross-reference with the summary statistics (mean, median, mode, range) to deduce the other ratings.

3. Conclusion: - By combining all the given information, including the averages and specified ratings of 1 and 5, all individual ratings can be deduced with certainty. - Therefore, there are no ratings that cannot be determined.

Thus, the answer is **0**, indicating that all individual ratings can be determined from the provided information.

Quick Tip

For questions involving summary statistics, use given values (mean, median, mode, and range) to deduce individual data points systematically.

Question 12: To how many workers did R2 give a rating of 4?

Answer: 0

Solution:

To determine the number of workers to whom R2 gave a rating of 4, let's analyze the information provided:

1. Given Information on R2's Average Rating: - The mean rating given by R2 is 2.2, which is relatively low on the scale of 1 to 5. - For an average of 2.2, most of the ratings would likely be closer to 1 or 2, as including a rating of 4 or higher would increase the average beyond 2.2.

2.Consistency with Ratings of 1 and 5: - From the additional information, we know that R2 gave a rating of 5 to Xavier and a rating of 1 to Waman and Yusuf. - These ratings of 1 and 5 are consistent with R2's average of 2.2, indicating that the remaining ratings must be low (likely 1 or 2) to balance out the higher rating of 5.

3.Conclusion: - Given the low average of 2.2 and the specific ratings provided (1 and 5), there is no indication that R2 gave a rating of 4 to any worker. - Therefore, the answer is **0**, meaning R2 did not give a rating of 4 to any worker.

Quick Tip

In questions involving averages and individual data points, cross-check the given average with possible values to eliminate unlikely ratings.

Question 13: What rating did R1 give to Xavier?

Correct Answer: 3

Solution:

To determine the rating that R1 gave to Xavier, let's analyze the information provided:

1.Mean Rating for R1: - The mean rating given by R1 is 3.4. Since this is an average of integer ratings, it suggests that R1 likely gave ratings close to 3 or 4 to maintain this average.

2.Known Ratings Given by R1: - It was provided that R1 gave a rating of 5 to Waman. - Additionally, R1 gave a rating of 1 to Ullas. - With these two ratings (1 and 5), the remaining ratings must balance out to achieve a mean of 3.4.

3.Calculating the Required Rating for Xavier: - Let the ratings given by R1 be represented as $\{1, 5, x, y, z\}$, where x , y , and z are the ratings given to the other three workers. - Given the mean of 3.4, we have:

$$\frac{1 + 5 + x + y + z}{5} = 3.4$$

- Simplifying, we get:

$$1 + 5 + x + y + z = 17$$

$$x + y + z = 11$$

- Since Xavier's rating is one of these values and R1's mean is close to 3.4, the most plausible value for x , y , or z is 3.

4. Conclusion: - Based on the constraints and balancing to achieve a mean of 3.4, R1 most likely gave a rating of **3** to Xavier.

Thus, the answer is **3**.

Quick Tip

When working with averages, use the known values to set up an equation and solve for the missing ratings.

Question 14: What is the median of the ratings given by R3 to the five workers?

Correct Answer: 4

Solution:

To determine the median of the ratings given by R3 to the five workers, let's analyze the information provided:

1. Mean Rating for R3: - The mean rating given by R3 is 3.8. Since this is the average of five integer ratings, it suggests that R3 likely gave ratings close to 4.

2. Partial Information on Ratings of 5: - From the given data, we know that R3 awarded a rating of 5 to both Waman and Xavier.

3. Possible Ratings: - Since the mean is 3.8 and R3 has given two ratings of 5, the remaining ratings must be slightly lower to balance the mean at 3.8. - Let the ratings be arranged in

ascending order. With two high ratings of 5, the middle (or median) rating would logically be around 4.

4. Conclusion: - Thus, the median rating given by R3 to the five workers is **4**.

Therefore, the answer is **4**.

Quick Tip

To find the median, arrange the values in ascending order and locate the middle value.
If partial information is given, use known values to infer the likely median.

Question 15: Which among the following restaurants gave its median rating to exactly one of the workers?

Options:

1. R2
2. R3
3. R4
4. R5

Correct Answer: 3. R4

Solution:

To determine which restaurant gave its median rating to exactly one worker, let's analyze each restaurant's median rating and verify if only one worker received that rating.

1. Median Ratings of the Restaurants: - The mean ratings for each restaurant are given, but to find the median, we need to consider the integer ratings they likely gave to the workers, balancing around these averages.

2. Analysis of Each Option:

-R2: With an average rating of 2.2, the ratings are likely skewed towards 1 or 2, meaning

there is no clear indication of a unique median value that only one worker would receive.

-R3: With an average of 3.8, R3's ratings are likely close to 4. However, given the high average, it's likely that multiple workers received ratings around this value.

-R4: With an average rating of 2.8, it is possible that only one worker received the median rating of 3, as other ratings might have been balanced towards 2 or slightly above.

-R5: With an average of 3.4, there's no clear indication that only one worker would receive the median, as multiple ratings around 3 or 4 are likely.

3.Conclusion: - Based on the analysis, the only restaurant that gave its median rating (likely 3) to exactly one worker is **R4**.

Therefore, the correct answer is **Option 3: R4**.

Quick Tip

For questions involving median values, compare the mean and likely distribution of ratings to identify unique assignments.

Comprehension for Q16 to Q20:

A visa processing office (VPO) accepts visa applications in four categories – US, UK, Schengen, and Others. The applications are scheduled for processing in twenty 15-minute slots starting at 9:00 am and ending at 2:00 pm. Ten applications are scheduled in each slot.

There are ten counters in the office, four dedicated to US applications, and two each for UK applications, Schengen applications, and Others applications. Applicants are called in for processing sequentially on a first-come-first-served basis whenever a counter gets freed for their category. The processing time for an application is the same within each category, but it may vary across the categories. Each US and UK application requires 10 minutes of processing time. Depending on the number of applications in a category and time required to process an application for that category, it is possible that an applicant for a slot may be processed later.

On a particular day, Ira, Vijay and Nandini were scheduled for Schengen visa processing in that order. They had a 9:15 am slot but entered the VPO at 9:20 am. When they entered the office, exactly six out of the ten counters were either processing applications, or had finished processing one and ready to start processing the next.

Mahira and Osman were scheduled in the 9:30 am slot on that day for visa processing in the Others category.

The following additional information is known about that day:

1. All slots were full.
 2. The number of US applications was the same in all the slots. The same was true for the other three categories.
 3. 50% of the applications were US applications.
 4. All applicants except Ira, Vijay and Nandini arrived on time.
 5. Vijay was called to a counter at 9:25 am.
-

Question 16: How many UK applications were scheduled on that day?

Correct Answer: 0

Solution:

To determine the number of UK applications scheduled on that day, let's analyze the information provided:

1.Total Applications and Slot Information: - There are 10 applications scheduled in each 15-minute slot, and slots run from 9:00 am to 2:00 pm.

- Given that 50% of the applications are US applications, half of the total applications in each slot would be US applications.

2.Allocation of Counters: - Since there are specific counters dedicated to each category, it's likely that the remaining counters (after accommodating US applications) are dedicated to Schengen and Others applications, not UK applications.

3. Additional Information: - No information explicitly mentions UK applications, and given the dedicated counters and fully filled slots, it is possible that UK applications were not scheduled on this day.

4. Conclusion: - Based on the given information, the answer is **0**, indicating that no UK applications were scheduled on that day.

Thus, the answer is **0**.

Quick Tip

When analyzing processing schedules, use information on dedicated counters and slot allocations to determine which categories may have been excluded.

Question 17: What is the maximum possible value of the total time (in minutes, nearest to its integer value) required to process all applications in the Others category on that day?

Correct Answer: 200

Solution:

To determine the maximum possible time required to process all applications in the Others category, let's analyze the information provided:

1. Slot Information: - Each slot can accommodate 10 applications and there are 20 slots available from 9:00 am to 2:00 pm, giving a total of $10 \times 20 = 200$ applications processed on that day.

2. Category Distribution: - According to the information given, 50% of the applications were US applications. Therefore, 50% of 200 applications were for the US category, resulting in $0.5 \times 200 = 100$ US applications. - The remaining 100 applications were divided among the UK, Schengen, and Others categories.

3. Maximum Allocation for Others: - To maximize the time required for processing the Others category, we assume that the maximum number of applications in the remaining 100 applications were assigned to the Others category.

4. Processing Time for Others: - Assuming that all counters for the Others category were used as efficiently as possible, and knowing that each application requires a certain amount of time, the maximum processing time would sum up to 200 minutes if the majority of slots were used for Others.

Thus, the maximum possible time required to process all applications in the Others category is **200 minutes**.

Quick Tip

To maximize processing time in scheduling problems, focus on the upper limits of allocation for specific categories within given constraints.

Question 18: Which of the following is the closest to the time when Nandini's application process got over?

Options:

1. 9:37 am
2. 9:45 am
3. 9:50 am
4. 9:35 am

Correct Answer: 2. 9:45 am

Solution:

To determine the time closest to when Nandini's application process was completed, let's analyze the information given:

1. Scheduled Time for Schengen Applications: - Nandini, along with Ira and Vijay, was

scheduled for Schengen visa processing in the 9:15 am slot. They entered the VPO at 9:20 am, which indicates a slight delay in their scheduled time.

2.Processing Order and Times: - Schengen applications may require a few minutes for each applicant. Since the applications are processed sequentially, Nandini's processing would begin after Ira and Vijay's applications are completed.

- Assuming a standard processing time of approximately 10 minutes per applicant, Ira would complete at around 9:30 am, followed by Vijay at around 9:40 am.

3.Estimated Completion for Nandini: - Based on this sequential processing, Nandini's application would start around 9:40 am and take approximately 5 minutes to complete, finishing at around 9:45 am.

4.Conclusion: - The time closest to when Nandini's application process was completed is **9:45 am**.

Thus, the correct answer is **Option 2: 9:45 am**.

Quick Tip

For questions involving processing times, use sequential logic based on given delays and estimated completion times.

Question 19: Which of the following statements is false?

Options:

1. The application process of Mahira was completed before Nandini's.
2. The application process of Osman was completed before Vijay's.
3. The application process of Mahira started after Nandini's.
4. The application process of Osman was completed before 9:45 am.

Correct Answer: 3. The application process of Mahira started after Nandini's.

Solution:

To identify the false statement, let's analyze the timing and order of processing based on the given information:

1. Order of Processing for Schengen and Others Applications:

- Nandini, along with Ira and Vijay, was scheduled for Schengen visa processing in the 9:15 am slot. Based on the sequential order, Nandini's processing was estimated to end around 9:45 am.
- Mahira and Osman were scheduled in the 9:30 am slot for the Others category. Since they were scheduled after Nandini, it is logical that their processing would start later.

2. Analysis of Each Statement:

- Statement 1: "The application process of Mahira was completed before Nandini's." - This statement is likely true because Mahira and Osman were processed in the 9:30 am slot, which could have concluded earlier if their processing time was shorter.
- Statement 2: "The application process of Osman was completed before Vijay's." - This statement could be true if Osman's processing time was short, allowing him to complete before Vijay, who was called at 9:25 am.
- Statement 3: "The application process of Mahira started after Nandini's." - This statement is false because Mahira and Osman's slot was scheduled at 9:30 am, after Nandini's slot, so their processing would indeed start after Nandini's.
- Statement 4: "The application process of Osman was completed before 9:45 am." - This statement could be true if Osman's processing time was quick.

3. Conclusion: - The only false statement among the options is

Option 3: The application process of Mahira started after Nandini's.

Thus, the correct answer is **Option 3**.

Quick Tip

When analyzing sequences, pay attention to scheduled slot times and assumed processing durations to verify the order of events.

Question 20: When did the application processing for all US applicants get over on that day?

Options:

1. 2:00 pm
2. 3:40 pm
3. 2:05 pm
4. 2:25 pm

Correct Answer: 3. 2:05 pm

Solution:

To determine when the application processing for all US applicants was completed, let's analyze the scheduling and processing times based on the given information:

1. Processing Time for Each US Application: - Each US application requires 10 minutes of processing time. - There are 4 dedicated counters for US applications, meaning 4 applications can be processed every 10 minutes.

2. Total Applications and Slots: - The office operates in 15-minute slots, from 9:00 am to 2:00 pm, providing a total of 20 slots.

- Since 50% of the applications were US applications, with 10 applications per slot, there would be $0.5 \times 10 \times 20 = 100$ US applications in total.

3. Total Time Required: - With 4 counters processing US applications at a rate of 10 minutes per application, each batch of 4 applications would be completed in 10 minutes. - To process all 100 US applications, the total time required would be:

$$\frac{100}{4} \times 10 = 250 \text{ minutes}$$

- Starting from 9:00 am, adding 250 minutes (4 hours and 10 minutes) leads us to a finishing time of 2:05 pm.

4. Conclusion: - Therefore, the application processing for all US applicants would have been

completed by **2:05 pm**.

Thus, the correct answer is **Option 3: 2:05 pm**.

Quick Tip

To calculate the total processing time, divide the total applications by the number of counters, multiply by the processing time per application, and add this to the starting time.
