

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.

01. Which two candidates can belong to the same department?

- A. Prof. Pakrasi and Prof. Samuel
  - B. Prof. Pakrasi and Prof. Qureshi
  - C. Prof. Qureshi and Prof. Ramaswamy
  - D. Prof. Ramaswamy and Prof. Samuel
- 

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

- A. 8
  - B. 7
  - C. 9
  - D. 6
- 

03. 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.

- A. Both statements A and B
  - B. Only statement B
  - C. Only statement A
  - D. Neither statement A nor statement B
-

04. What best can be concluded about the candidate from O&Q?

- A. It was either Prof. Pakrasi or Prof. Qureshi.
  - B. It was Prof. Samuel.
  - C. It was Prof. Ramaswamy.
  - D. It was either Prof. Ramaswamy or Prof. Samuel.
- 

05. 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.

- A. Only statement B
  - B. Only statement A
  - C. Both statements A and B
  - D. Neither statement A nor statement B
- 

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.

06. How many individual ratings cannot be determined from the above information?

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07. To how many workers did R2 give a rating of 4?

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08. What rating did R1 give to Xavier?

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09. What is the median of the ratings given by R3 to the five workers?

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10. Which among the following restaurants gave its median rating to exactly one of the workers?

- A. R5
  - B. R2
  - C. R3
  - D. R4
- 

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.

11. How many UK applications were scheduled on that day?

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12. 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?

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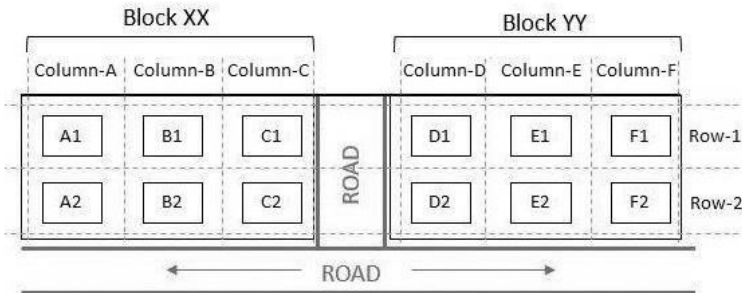
13. Which of the following is the closest to the time when Nandini's application process got over?

- A. 9:35 am
  - B. 9:50 am
  - C. 9:37 am
  - D. 9:45 am
-

14. Which of the following statements is false?
- A. The application process of Mahira was completed before Nandini's.
  - B. The application process of Osman was completed before Vijay's.
  - C. The application process of Osman was completed before 9:45 am.
  - D. The application process of Mahira started after Nandini's.

15. When did the application processing for all US applicants get over on that day?
- A. 2:25 pm
  - B. 3:40 pm
  - C. 2:00 pm
  - D. 2:05 pm

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 neighbour 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 (base price) + 5 × (road adjacency value) + 3 × (neighbour 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.



16. How many houses are vacant in Block XX?

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17. Which of the following houses are definitely occupied?\*

- A. F2 and A2
- B. D2 and B2
- C. D2 and B1
- D. A1 and D2

\*\*The original question had issues. We have modified the question to rectify the issue.

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18. Which of the following options best describes the number of vacant houses in Row-2?

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

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

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20. Which house in Block YY has parking space?

- A. F2
  - B. F1
  - C. E2
  - D. E1
-

There are nine boxes arranged in a 3×3 array as shown in Tables 1 and 2. Each box contains three sacks. Each sack has a certain number of coins, between 1 and 9, both inclusive.

The average number of coins per sack in the boxes are all distinct integers. The total number of coins in each row is the same. The total number of coins in each column is also the same.

	1st column	2nd column	3rd column
1st row	□	9	6
2nd row	2	□	□
3rd row	8	□	□

Table 1

	1st column	2nd column	3rd column
1st row	1**	2*	2*
2nd row	1**	0*	3*
3rd row	3*	2**	0**

Table 2

Table 1 gives information regarding the median of the numbers of coins in the three sacks in a box for some of the boxes. In Table 2 each box has a number which represents the number of sacks in that box having more than 5 coins. That number is followed by a \* if the sacks in that box satisfy exactly one among the following three conditions, and it is followed by \*\* if two or more of these conditions are satisfied.

- i) The minimum among the numbers of coins in the three sacks in the box is 1.
- ii) The median of the numbers of coins in the three sacks is 1.
- iii) The maximum among the numbers of coins in the three sacks in the box is 9.

01. What is the total number of coins in all the boxes in the 3<sup>rd</sup> row?

- A. 36
  - B. 30
  - C. 45
  - D. 15
- 

02. How many boxes have at least one sack containing 9 coins?

- A. 3
  - B. 5
  - C. 4
  - D. 8
- 

03. For how many boxes are the average and median of the numbers of coins contained in the three sacks in that box the same?

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04. How many sacks have exactly one coin?

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05. In how many boxes do all three sacks contain different numbers of coins?

Three participants – Akhil, Bimal and Chatur participate in a random draw competition for five days. Every day, each participant randomly picks up a ball numbered between 1 and 9. The number on the ball determines his score on that day. The total score of a participant is the sum of his scores attained in the five days. The total score of a day is the sum of participants' scores on that day. The 2-day average on a day, except on Day 1, is the average of the total scores of that day and of the previous day. For example, if the total scores of Day 1 and Day 2 are 25 and 20, then the 2-day average on Day 2 is calculated as 22.5. Table 1 gives the 2-day averages for Days 2 through 5.

Day 2	Day 3	Day 4	Day 5
15	15.5	16	17

Participants are ranked each day, with the person having the maximum score being awarded the minimum rank (1) on that day. If there is a tie, all participants with the tied score are awarded the best available rank. For example, if on a day Akhil, Bimal, and Chatur score 8, 7 and 7 respectively, then their ranks will be 1, 2 and 2 respectively on that day. These ranks are given in Table 2.

	Day 1	Day 2	Day 3	Day 4	Day 5
Akhil	1	2	2	3	3
Bimal	2	3	2	1	1
Chatur	3	1	1	2	2

The following information is also known.

1. Chatur always scores in multiples of 3. His score on Day 2 is the unique highest score in the competition. His minimum score is observed only on Day 1, and it matches Akhil's score on Day 4.
2. The total score on Day 3 is the same as the total score on Day 4.
3. Bimal's scores are the same on Day 1 and Day 3.

06. What is Akhil's score on Day 1?

- A. 5
- B. 6
- C. 7
- D. 8

07. Who attains the maximum total score?

- A. Chatur
- B. Bimal
- C. Cannot be determined
- D. Akhil

08. What is the minimum possible total score of Bimal?

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09. If the total score of Bimal is a multiple of 3, what is the score of Akhil on Day 2?

- A. Cannot be determined
  - B. 4
  - C. 6
  - D. 5
- 

10. If Akhil attains a total score of 24, then what is the total score of Bimal?

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Odsville has five firms – Alfloo, Bzygoo, Czechy, Drjbna and Elavalaki. Each of these firms was founded in some year and also closed down a few years later.

Each firm raised Rs. 1 crore in its first and last year of existence. The amount each firm raised every year increased until it reached a maximum, and then decreased until the firm closed down. No firm raised the same amount of money in two consecutive years. Each annual increase and decrease was either by Rs. 1 crore or by Rs. 2 crores.

The table below provides partial information about the five firms.

Firm	First year of existence	Last year of existence	Total amount raised (Rs. crores)
Alfloo	2009	2016	21
Bzygoo	2012	2015	
Czechy	2013		9
Drjbna	2011	2015	10
Elavalaki	2010		13

11. For which firm(s) can the amounts raised by them be concluded with certainty in each year?

- A. Only Czechy and Drjbna
  - B. Only Bzygoo and Czechy and Drjbna
  - C. Only Czechy
  - D. Only Drjbna
- 

12. What best can be concluded about the total amount of money raised in 2015?

- A. It is either Rs. 7 crores or Rs. 8 crores.
  - B. It is either Rs. 7 crores or Rs. 8 crores or Rs. 9 crores.
  - C. It is exactly Rs. 8 crores.
  - D. It is either Rs. 8 crores or Rs. 9 crores.
-



13. What is the largest possible total amount of money (in Rs. crores) that could have been raised in 2013?

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14. If Elavalaki raised Rs. 3 crores in 2013, then what is the smallest possible total amount of money (in Rs. crores) that could have been raised by all the companies in 2012?

- A. 12
  - B. 11
  - C. 10
  - D. 9
- 

15. If the total amount of money raised in 2014 is Rs. 12 crores, then which of the following is not possible?

- A. Bzygoo raised the same amount of money as Elavalaki in 2013.
  - B. Alfloo raised the same amount of money as Drjbna in 2013.
  - C. Alfloo raised the same amount of money as Bzygoo in 2014.
  - D. Bzygoo raised more money than Elavalaki in 2014.
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Anjali, Bipasha, and Chitra visited an entertainment park that has four rides. Each ride lasts one hour and can accommodate one visitor at one point. All rides begin at 9 am and must be completed by 5 pm except for Ride-3, for which the last ride has to be completed by 1 pm. Ride gates open every 30 minutes, e.g. 10 am, 10:30 am, and so on. Whenever a ride gate opens, and there is no visitor inside, the first visitor waiting in the queue buys the ticket just before taking the ride. The ticket prices are Rs. 20, Rs. 50, Rs. 30 and Rs. 40 for Rides 1 to 4, respectively. Each of the three visitors took at least one ride and did not necessarily take all rides. None of them took the same ride more than once. The movement time from one ride to another is negligible, and a visitor leaves the ride immediately after the completion of the ride. No one takes a break inside the park unless mentioned explicitly.

The following information is also known.

1. Chitra never waited in the queue and completed her visit by 11 am after spending Rs. 50 to pay for the ticket(s).
2. Anjali took Ride-1 at 11 am after waiting for 30 mins for Chitra to complete it. It was the only ride where Anjali waited.
3. Bipasha began her first of three rides at 11:30 am. All three visitors incurred the same amount of ticket expense by 12:15 pm.
4. The last ride taken by Anjali and Bipasha was the same, where Bipasha waited 30 mins for Anjali to complete her ride. Before standing in the queue for that ride, Bipasha took a 1-hour coffee break after completing her previous ride.

16. What was the total amount spent on tickets (in Rs.) by Bipasha?

- A. 120
  - B. 110
  - C. 100
  - D. 90
-

17. Which were all the rides that Anjali completed by 2:00 pm?

- A. Ride-1 and Ride-4
  - B. Ride-1, Ride-2, and Ride-3
  - C. Ride-1 and Ride-3
  - D. Ride-1, Ride-2, and Ride-4
- 

18. Which ride was taken by all three visitors?

- A. Ride-3
  - B. Ride-1
  - C. Ride-4
  - D. Ride-2
- 

19. How many rides did Anjali and Chitra take in total?

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20. What was the total amount spent on tickets (in Rs.) by Anjali?

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There are only three female students – Amala, Koli and Rini – and only three male students – Biman, Mathew and Shyamal – in a course. The course has two evaluation components, a project and a test. The aggregate score in the course is a weighted average of the two components, with the weights being positive and adding to 1.

The projects are done in groups of two, with each group consisting of a female and a male student. Both the group members obtain the same score in the project.

The following additional facts are known about the scores in the project and the test.

1. The minimum, maximum and the average of both project and test scores were identical – 40, 80 and 60, respectively.
2. The test scores of the students were all multiples of 10; four of them were distinct and the remaining two were equal to the average test scores.
3. Amala's score in the project was double that of Koli in the same, but Koli scored 20 more than Amala in the test. Yet Amala had the highest aggregate score.
4. Shyamal scored the second highest in the test. He scored two more than Koli, but two less than Amala in the aggregate.
5. Biman scored the second lowest in the test and the lowest in the aggregate.
6. Mathew scored more than Rini in the project, but less than her in the test.

01. What was Rini's score in the project?

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02. What was the weight of the test component?

- A. 0.75
- B. 0.50
- C. 0.60
- D. 0.40

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03. What was the maximum aggregate score obtained by the students?

- A. 66
- B. 68
- C. 80
- D. 62

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04. What was Mathew's score in the test?

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05. Which of the following pairs of students were part of the same project team?

- i) Amala and Biman
- ii) Koli and Mathew

- A. Neither i) nor ii)
- B. Both i) and ii)
- C. Only i)
- D. Only ii)

In a coaching class, some students register online, and some others register offline. No student registers both online and offline; hence the total registration number is the sum of online and offline registrations. The following facts and table pertain to these registration numbers for the five months – January to May of 2023. The table shows the minimum, maximum, median registration numbers of these five months, separately for online, offline and total number of registrations. The following additional facts are known.

1. In every month, both online and offline registration numbers were multiples of 10.
2. In January, the number of offline registrations was twice that of online registrations.
3. In April, the number of online registrations was twice that of offline registrations.
4. The number of online registrations in March was the same as the number of offline registrations in February.
5. The number of online registrations was the largest in May.

	Minimum	Maximum	Median
Online	40	100	80
Offline	30	80	50
Total	110	130	120

06. What was the total number of registrations in April?

07. What was the number of online registrations in January?

08. Which of the following statements can be true?

- I. The number of offline registrations was the smallest in May.
- II. The total number of registrations was the smallest in February.

- A. Only II
- B. Only I
- C. Both I and II
- D. Neither I nor II



09. What best can be concluded about the number of offline registrations in February?

- A. 30 or 50 or 80
  - B. 80
  - C. 50 or 80
  - D. 50
- 

10. Which pair of months definitely had the same total number of registrations?

- I. January and April
- II. February and May

- A. Only I
  - B. Neither I nor II
  - C. Only II
  - D. Both I and II
- 

An air conditioner (AC) company has four dealers – D1, D2, D3 and D4 in a city. It is evaluating sales performances of these dealers. The company sells two variants of ACs – Window and Split. Both these variants can be either Inverter type or Non-inverter type. It is known that of the total number of ACs sold in the city, 25% were of Window variant, while the rest were of Split variant. Among the Inverter ACs sold, 20% were of Window variant.

The following information is also known: 1. Every dealer sold at least two window ACs.

2. D1 sold 13 inverter ACs, while D3 sold 5 Non-inverter ACs. 3. A total of six Window Non-inverter ACs and 36 Split Inverter ACs were sold in the city. 4. The number of Split ACs sold by D1 was twice the number of Window ACs sold by it. 5. D3 and D4 sold an equal number of Window ACs and this number was one-third of the number of similar ACs sold by D2. 6. D2 and D3 were the only ones who sold Window Non-inverter ACs. The number of these ACs sold by D2 was twice the number of these ACs sold by D3.

7. D3 and D4 sold an equal number of Split Inverter ACs. This number was half the number of similar ACs sold by D2.

11. How many Split Inverter ACs did D2 sell?

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12. What percentage of ACs sold were of Non-inverter type?

- A. 33.33%
  - B. 20.00%
  - C. 25.00%
  - D. 75.00%
- 

13. What was the total number of ACs sold by D2 and D4?

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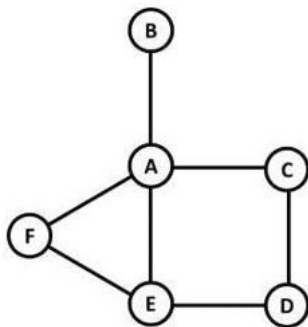
14. Which of the following statements is necessarily false?

- A. D2 sold the highest number of ACs.
- B. D1 and D3 together sold more ACs as compared to D2 and D4 together.
- C. D1 and D3 sold an equal number of Split ACs.
- D. D4 sold more Split ACs as compared to D3.

15. If D3 and D4 sold an equal number of ACs, then what was the number of Non-inverter ACs sold by D2?

- A. 7
- B. 5
- C. 6
- D. 4

A, B, C, D, E and F are the six police stations in an area, which are connected by streets as shown below. Four teams – Team 1, Team 2, Team 3 and Team 4 – patrol these streets continuously between 09:00 hrs. and 12:00 hrs. each day.



The teams need 30 minutes to cross a street connecting one police station to another. All four teams start from Station A at 09:00 hrs. and must return to Station A by 12:00 hrs. They can also pass via Station A at any point on their journeys.

The following facts are known.

1. None of the streets has more than one team traveling along it in any direction at any point in time.
2. Teams 2 and 3 are the only ones in stations E and D respectively at 10:00 hrs.
3. Teams 1 and 3 are the only ones in station E at 10:30 hrs.
4. Teams 1 and 4 are the only ones in stations B and E respectively at 11:30 hrs.
5. Team 1 and Team 4 are the only teams that patrol the street connecting stations A and E.
6. Team 4 never passes through Stations B, D or F.

16. Which one among the following stations is visited the largest number of times?

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

17. How many times do the teams pass through Station B in a day?

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18. Which team patrols the street connecting Stations D and E at 10:15 hrs?

- A. Team 2
  - B. Team 1
  - C. Team 4
  - D. Team 3
- 

19. How many times does Team 4 pass through Station E in a day?

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20. How many teams pass through Station C in a day?

- A. 2
  - B. 1
  - C. 3
  - D. 4
-

**DILR Slot 1 Answer Key**

Question No.	Answer
1	Option B
2	Option C
3	Option A
4	Option D
5	Option A
6	Answer is 0
7	Answer is 0
8	Answer is 3
9	Answer is 4
10	Option D
11	Answer is 0
12	Answer is 200
13	Option D
14	Option D
15	Option D
16	Answer is 3
17	Option C
18	Option B
19	Answer is 21
20	Option D

**DILR Slot 2 Answer Key**

Question No.	Answer
1	Option C
2	Option B
3	Answer is 4
4	Answer is 9
5	Answer is 5
6	Option C
7	Option A
8	Answer is 25
9	Option B
10	Answer is 26
11	Option A
12	Option A
13	Answer is 17
14	Option B
15	Option A
16	Option B
17	Option B
18	Option B
19	Answer is 6
20	Answer is 140

**DILR Slot 3 Answer Key**

Question No.	Answer
1	Answer is 60
2	Option C
3	Option B
4	Answer is 40
5	Option A
6	Answer is 120
7	Answer is 40
8	Option B
9	Option D
10	Option D
11	Answer is 14
12	Option C
13	Answer is 33
14	Option B
15	Option B
16	Option D
17	Answer is 2
18	Option D
19	Answer is 2
20	Option A

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