

This PDF Contains all the Logical Reasoning Questions which have appeared in recent CAT Exams. At the end of the PDF, we have provided the **answer keys** of all the questions.

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Logical Reasoning Questions Sets with Video Explanations

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LRDI SET 1

Healthy Bites is a fast food joint serving three items, burgers, fries and ice cream. It has two employees Anish and Bani who prepare the items ordered by the clients. Preparation time is 10 minutes for a burger and 2 minutes for an order of Ice cream. An employee can prepare only one of these items at a time. The fries are prepared in an automatic fryer which can prepare up to 3 portions of fries at a time, and takes 5 minutes irrespective of the number of portions. The fryer does not need an employee to constantly attend to it, and we can ignore the time taken by an employee to start and stop the fryer; thus, an employee can be engaged in preparing other items while the frying is on. However, fries cannot be prepared in anticipation of future orders.

Healthy Bites wishes to serve the orders as early as possible. The individual items in any order are served as and when ready; however, the order is considered to be completely served only when all the items of that order are served. The table below gives the orders of three clients and the times at which they placed their orders:

Client no.	Time	Order
1	10:00	1 burger, 3 portions of fries, 1 order of ice cream
2	10:05	2 portions of fries. 1 order of ice cream
3	10:07	1 burger. 1 portion of fries

Q. 1: Assume that only one client's order can be processed at any given point of time. So, Anish or Bani cannot start preparing a new order while a previous order is being prepared. At what time is the order placed by Client 1 completely served?

1. 10:17
2. 10:10
3. 10:15
4. 10:20

Q. 2: Assume that only one client's order can be processed at any given point of time. So, Anish or Bani cannot start preparing a new order while a previous order is being prepared. At what time is the order placed by Client 3 completely served?

1. 10:35
2. 10:22
3. 10:25
4. 10:17

Q. 3: Suppose the employees are allowed to process multiple orders at a time, but the preference would be to finish orders of clients who placed their orders earlier. At what time is the order placed by Client 2 completely served?

1. 10:10
2. 10:12
3. 10:15
4. 10:17

Q. 4: Suppose the employees are allowed to process multiple orders at a time, but the preference would be to finish orders of clients who placed their orders earlier. Also assume that the fourth client came in only at 10:35. Between 10:00 and 10:30, for how many minutes is exactly one of the employees idle?

1. 7
2. 10
3. 15
4. 23

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LRDI SET 2

A study to look at the early learning of rural kids was carried out in a number of villages spanning three states, chosen from the North East (NE), the West (W) and the South (S). 50 four-year old kids each were sampled from each of the 150 villages from NE, 250 villages from W and 200 villages from S. It was found that of the 30000 surveyed kids 55% studied in primary schools run by government (G), 37% in private schools (P) while the remaining 8% did not go to school (O).

The kids surveyed were further divided into two groups based on whether their mothers dropped out of school before completing primary education or not. The table below gives the number of kids in different types of schools for mothers who dropped out of school before completing primary education:

	G	P	O	Total
NE	4200	500	300	5000
W	4200	1900	1200	7300
S	5100	300	300	5700
Total	13500	2700	1800	18000

It is also known that:

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1. In S, 60% of the surveyed kids were in G. Moreover, in S, all surveyed kids whose mothers had completed primary education were in school.

2. In NE, among the O kids, 50% had mothers who had dropped out before completing primary education.

3. The number of kids in G in NE was the same as the number of kids in G in W.

Q. 5: What percentage of kids from S were studying in P?

1. 37%
2. 6%
3. 79%
4. 56%

Q. 6: Among the kids in W whose mothers had completed primary education, how many were not in school?

1. 300
2. 1200
3. 1050
4. 1500

Q. 7: In a follow up survey of the same kids two years later, it was found that all the kids were now in school. Of the kids who were not in school earlier, in one region, 25% were in G now, whereas the rest were enrolled in P; in the second region, all such kids were in G now; while in the third region, 50% of such kids had now joined G while the rest had joined P. As a result, in all three regions put together, 50% of the kids who were earlier out of school had joined G. It was also seen that no surveyed kid had changed schools.

What number of the surveyed kids now were in G in W?

1. 6000
2. 5250
3. 6750
4. 6300

Q. 8: In a follow up survey of the same kids two years later, it was found that all the kids were now in school. Of the kids who were not in school earlier, in one region, 25% were in G now, whereas the rest were enrolled in P; in the second region, all such kids were in G now; while in the third region, 50% of such kids had now joined G while the rest had joined P. As a result, in all three regions put together, 50% of the kids who were earlier out of school had joined G. It was also seen that no surveyed kid had changed schools.

What percentage of the surveyed kids in S, whose mothers had dropped out before completing primary education, were in G now?

1. 94.7%
2. 89.5%
3. 93.4%
4. Cannot be determined from the given information

LRDI SET 3

Applicants for the doctoral programmes of Ambi Institute of Engineering (AIE) and Bambi Institute of Engineering (BIE) have to appear for a Common Entrance Test (CET). The test has three sections: Physics (P), Chemistry (C), and Maths (M). Among those appearing for CET, those at or above the 80th percentile in at least two sections, and at or above the 90th percentile overall, are selected for Advanced Entrance Test (AET) conducted by AIE. AET is used by AIE for final selection.

For the 200 candidates who are at or above the 90th percentile overall based on CET, the following are known about their performance in CET:

1. No one is below the 80th percentile in all 3 sections.
2. 150 are at or above the 80th percentile in exactly two sections.
3. The number of candidates at or above the 80th percentile only in P is the same as the number of candidates at or above the 80th percentile only in C. The same is the number of candidates at or above the 80th percentile only in M.
4. Number of candidates below 80th percentile in P: Number of candidates below 80th percentile in C: Number of candidates below 80th percentile in M = 4:2:1.

BIE uses a different process for selection. If any candidate is appearing in the AET by AIE, BIE considers their AET score for final selection provided the candidate is at or above the 80th percentile in P. Any other candidate at or above the 80th percentile in P in CET, but who is not eligible for the AET, is required to appear in a separate test to be conducted by BIE for being considered for final selection. Altogether, there are 400 candidates this year who are at or above the 80th percentile in P.

Q. 9: What best can be concluded about the number of candidates sitting for the separate test for BIE who were at or above the 90th percentile overall in CET?

1. 3 or 10
2. 10
3. 5
4. 7 or 10

Q. 10: If the number of candidates who are at or above the 90th percentile overall and also at or above the 80th percentile in all three sections in CET is actually a multiple of 5, what is the number of candidates who are at or above the 90th percentile overall and at or above the 80th percentile in both P and M in CET?

Q. 11: If the number of candidates who are at or above the 90th percentile overall and also at or above the 80th percentile in all three sections in CET is actually a multiple of 5, then how many candidates were shortlisted for the AET for AIE?

Q. 12: If the number of candidates who are at or above the 90th percentile overall and also are at or above the 80th percentile in P in CET, is more than 100, how many candidates had to sit for the separate test for BIE?

1. 299
2. 310
3. 321
4. 330

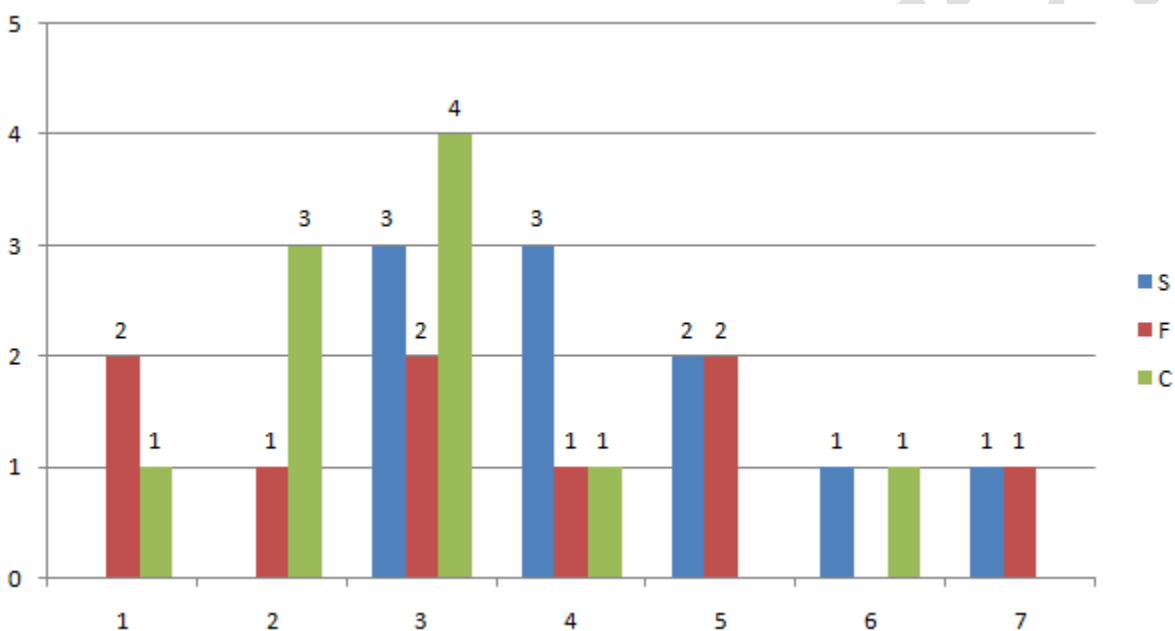
LRDI SET 4

Simple Happiness index (SHI) of a country is computed on the basis of three, parameters: social support (S), freedom to life choices (F) and corruption perception (C). Each of these three parameters is measured on a scale of 0 to 8 (integers only). A

country is then categorised based on the total score obtained by summing the scores of all the three parameters, as shown in the following table:

Total Score	0-4	5-8	9-13	14-19	20-24
Category	Very Unhappy	Unhappy	Neutral	Happy	Very Happy

Following diagram depicts the frequency distribution of the scores in S, F and C of 10 countries - Amda, Benga, Calla, Delma, Eppa, Varsa, Wanna, Xanda, Yanga and Zooma:



Further, the following are known.

1. Amda and Calla jointly have the lowest total score, 7, with identical scores in all the three parameters.
2. Zooma has a total score of 17.
3. All the 3 countries, which are categorised as happy, have the highest score in exactly one parameter.

Q. 13: What is Amda's score in F?

Q. 14: What is Zooma's score in S?

Q. 15: Benga and Delma, two countries categorized as happy, are tied with the same total score. What is the maximum score they can have?

1. 14
2. 15
3. 16
4. 17

Q. 16: If Benga scores 16 and Delma scores 15, then what is the maximum number of countries with a score of 13?

1. 0
2. 1
3. 2
4. 3

LRDI SET 5

There are 21 employees working in a division, out of whom 10 are special-skilled employees (SE) and the remaining are regular-skilled employees (RE). During the next five months, the division has to complete five projects every month. Out of the 25 projects, 5 projects are "challenging", while the remaining ones are "standard". Each of the challenging projects has to be completed in different months. Every month, five teams — T1, T2, T3, T4 and T5, work on one project each. T1, T2, T3, T4 and T5 are allotted the challenging project in the first, second, third, fourth and fifth month, respectively. The team assigned the challenging project has one more employee than the rest.

In the first month, T 1 has one more SE than T2, T2 has one more SE than T3, T 3 has one more SE than T4, and T4 has one more SE than T5. Between two successive months, the composition of the teams changes as follows:

a. The team allotted the challenging project, gets two SE from the team which was allotted the challenging project in the previous month. In exchange, one RE is shifted from the former team to the latter team.

b. After the above exchange, if T 1 has any SE and T5 has any RE, then one SE is shifted from T1 to T5, and one RE is shifted from T5 to T1. Also, if T2 has any SE and T4 has any RE, then one SE is shifted from T2 to T4, and one RE is shifted from T 4 to T2.

Each standard project has a total of 100 credit points, while each challenging project has 200 credit points. The credit points are equally shared between the employees included in that team.

Q. 17: The number of times in which the composition of team T2 and the number of times in which composition of team T4 remained unchanged in two successive months are:

1. (2,1)
2. (1,0)
3. (0,0)
4. (1,1)

Q. 18: The number of SE in T1 and T5 for the projects in the third month are, respectively:

1. (0,2)
2. (0,3)
3. (1,2)
4. (1,3)

Q. 19: Which of the following CANNOT be the total credit points earned by any employee from the projects?

1. 140
2. 150
3. 170
4. 200

Q. 20: One of the employees named Aneek scored 185 points. Which of the following CANNOT be true?

1. Aneek worked only in teams T1, T2, T3, and T4.

2. Aneek worked only in teams T1, T2, T4, and T5.
3. Aneek worked only in teams T2, T3, T4, and T5.
4. Aneek worked only in teams T1, T3, T4, and T5.

LRDI SET 6

In a square layout of site 5m X 5m, 25 equal-sized square platforms of different heights are built. The heights (in metre) of individual platforms are as shown below:

6	1	2	4	3
9	5	3	2	8
7	8	4	6	5
3	9	5	1	2
1	7	6	3	9

Individuals (all of same height) are seated on these platforms. We say an individual A can reach individual B, if all the three following conditions are met;

- (i) A and B are in the same row or column
- (ii) A is at a lower height than B
- (iii) If there is/are any individual(s) between A and B, such Individual(s) must be at a height lower than that of A.

Thus in the table given above, consider the individual seated at height 8 on 3rd row and 2nd column. He can be reached by four Individuals. He can be reached by the individual on his left at height 7, by the two individuals on his right at heights of 4 and 6 and by the individual above at height 5.

Rows in the layout are numbered from top to bottom and columns are numbered from left to right.

Q. 21: How many individuals in this layout can be reached by just one individual?

1. 3
2. 5

3. 7
4. 8

Q. 22: Which of the following is true for any individual at a platform of height 1 m in this layout?

1. They can be reached by all the individuals in their own row and column.
2. They can be reached by at least 4 individuals.
3. They can be reached by at least one individual.
4. They cannot be reached by anyone.

Q. 23: We can find two individuals who cannot be reached by anyone in

1. the last row.
2. the fourth row.
3. the fourth column.
4. the middle column.

Q. 24: Which of the following statements is true about this layout?

1. Each row has an individual who can be reached by 5 or more individuals.
2. Each row has an individual who cannot be reached by anyone.
3. Each row has at least two individuals who can be reached by an equal number of individuals.
4. All individuals at the height of 9 m can be reached by at least 5 individuals.

LRDI SET 7

A new airlines company is planning to start operations in a country. The company has identified ten different cities which they plan to connect through their network to start with. The flight duration between any pair of cities will be less than one hour. To start operations, the company has to decide on a daily schedule.

The underlying principle that they are working on is the following:

Any person staying in any of these 10 cities should be able to make a trip to any other city in the morning and should be able to return by the evening of the same day.

Q. 25: If the underlying principle is to be satisfied in such a way that the journey between any two cities can be performed using only direct (non-stop) flights, then the minimum number of direct flights to be scheduled is:

1. 45
2. 90
3. 180
4. 135

Q. 26: Suppose three of the ten cities are to be developed as hubs. A hub is a city which is connected with every other city by direct flights each way, both in the morning as well as in the evening. The only direct flights which will be scheduled are originating and/or terminating in one of the hubs. Then the minimum number of direct flights that need to be scheduled so that the underlying principle of the airline to serve all the ten cities is met without visiting more than one hub during one trip is:

1. 54
2. 120
3. 96
4. 60

Q. 27: Suppose the 10 cities are divided into 4 distinct groups G1, G2, G3, G4 having 3, 3, 2 and 2 cities respectively and that G1 consists of cities named A, B and C. Further, suppose that direct flights are allowed only between two cities satisfying one of the following:

1. Both cities are in G1
2. Between A and any city in G2
3. Between B and any city in G3
4. Between C and any city in G4

Then the minimum number of direct flights that satisfies the underlying principle of the airline is:

Q. 28: Suppose the 10 cities are divided into 4 distinct groups G1, G2, G3, G4 having 3, 3, 2 and 2 cities respectively and that G1 consists of cities named A, B and C. Further, suppose that direct flights are allowed only between two cities satisfying one of the following:

1. Both cities are in G1
2. Between A and any city in G2
3. Between B and any city in G3
4. Between C and any city in G4

However, due to operational difficulties at A, it was later decided that the only flights that would operate at A would be those to and from B. Cities in G2 would have to be assigned to G3 or to G4.

What would be the maximum reduction in the number of direct flights as compared to the situation before the operational difficulties arose?

LRDI SET 8

Four cars need to travel from Akala (A) to Bakala (B). Two routes are available, one via Mamur (M) and the other via Nanur (N). The roads from A to M, and from N to B, are both short and narrow. In each case, one car takes 6 minutes to cover the distance, and each additional car increases the travel time per car by 3 minutes because of congestion. (For example, if only two cars drive from A to M, each car takes 9 minutes.) On the road from A to N, one car takes 20 minutes, and each additional car increases the travel time per car by 1 minute. On the road from M to B, one car takes 20 minutes, and each additional car increases the travel time per car by 0.9 minute.

The police department orders each car to take a particular route in such a manner that it is not possible for any car to reduce its travel time by not following the order, while the other cars are following the order.

Q. 29: How many cars would be asked to take the route A-N-B, that is Akala-Nanur-Bakala route, by the police department?

Q. 30: If all the cars follow the police order, what is the difference in travel time (in minutes) between a car which takes the route A-N-B and a car that takes the route A-M-B?

1. 1
2. 0.1
3. 0.2
4. 0.9

Q. 31: A new one-way road is built from M to N. Each car now has three possible routes to travel from A to B: A-M-B, A-N-B and A-M-N-B. On the road from M to N, one car takes 7 minutes and each additional car increases the travel time per car by 1 minute. Assume that any car taking the A-M-N-B route travels the A-M portion at the same time as other cars taking the A-M-B route, and the N-B portion at the same time as other cars taking the A-N-B route.

How many cars would the police department order to take the A-M-N-B route so that it is not possible for any car to reduce its travel time by not following the order while the other cars follow the order? (Assume that the police department would never order all the cars to take the same route.)

Q. 32: A new one-way road is built from M to N. Each car now has three possible routes to travel from A to B: A-M-B, A-N-B and A-M-N-B. On the road from M to N, one car takes 7 minutes and each additional car increases the travel time per car by j minute. Assume that any car taking the A-M-N-B route travels the A-M portion at the same time as other cars taking the A-M-B route, and the N-B portion at the same time as other cars taking the A-N-B route.

If all the cars follow the police order, what is the minimum travel time (in minutes) from A to B? (Assume that the police department would never order all the cars to take the same route.)

1. 26
2. 32
3. 29.9
4. 30

LRDI SET 9

Funky Pizzeria was required to supply pizzas to three different parties. The total number of pizzas it had to deliver was 800, 70% of which were to be delivered to Party 3 and the rest equally divided between Party 1 and Party 2.

Pizzas could be of Thin Crust (P) or Deep Dish variety and come in either Normal Cheese (NC) or Extra Cheese (EC) versions. Hence, there are four types of pizzas: T-NC, T-EC, D-NC and D-EC. Partial information about proportions of T and NC pizzas ordered by the three parties is given below:

	Thin crust (T)	Normal cheese (NC)
Party 1	0.6	
Party 2	0.55	0.3
Party 3		0.65
Total	0.375	0.52

Q. 33: How many Thin Crust pizzas were to be delivered to Party 3?

1. 398
2. 162
3. 96
4. 364

Q. 34: How many Normal Cheese pizzas were required to be delivered to Party 1?

1. 104
2. 84
3. 16
4. 196

Q. 35: For Party 2, if 50% of the Normal Cheese pizzas were of Thin Crust variety, what was the difference between the numbers of T-EC and D-EC pizzas to be delivered to Party 2?

1. 18
2. 12
3. 30

4. 24

Q. 36: Suppose that a T-NC pizza costs as much as a D-NC pizza, but $\frac{3}{5}$ th of the price of a D-EC pizza. A D-EC pizza costs Rs. 50 more than a T-EC pizza, and the latter costs Rs. 500. If 25% of the Normal Cheese pizzas delivered to Party 1 were of Deep Dish variety, what was the total bill for Party 1?

1. Rs. 59480
2. Rs. 59840
3. Rs. 42520
4. Rs. 45240

LRDI SET 10

There were seven elective courses — E1 to E7 — running in a specific term in a college. Each of the 300 students enrolled had chosen just one elective from among these seven. However, before the start of the term, E7 was withdrawn as the instructor concerned had left the college. The students who had opted for E7 were allowed to join any of the remaining electives. Also, the students who had chosen other electives were given one chance to change their choice. The table below captures the movement of the students from one elective to another during this process. Movement from one elective to the same elective simply means no movement. Some numbers in the table got accidentally erased; however, it's known that these were either 0 or 1.

From Elective	To Elective							
		E1	E2	E3	E4	E5	E6	
	E1	9	5	10	1	4	2	
	E2		34	8		2	2	
	E3	2	6	25			2	
	E4		3	2	14		4	
	E5		5			30		
	E6		7	3		2	9	
	E7	4	16	30	5	5	41	

Further, the following are known:

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1. Before the change process there were 6 more students in E1 than in E4, but after the reshuffle, the number of students in E4 was 3 more than that in E1.
2. The number of students in E2 increased by 30 after the change process.
3. Before the change process, E4 had 2 more students than E6, while E2 had 10 more students than E3

Q. 37: How many elective courses among E 1 to E6 had a decrease in their enrolments after the change process?

1. 4
2. 1
3. 2
4. 3

Q. 38: After the change process, which of the following is the correct sequence of number of students in the six electives E 1 to E6?

1. 19, 76, 79, 21, 45, 60
2. 19, 76, 78, 22, 45, 60
3. 18, 76, 79, 23, 43, 61
4. 18, 76, 79, 21, 45, 61

Q. 39: After the change process, which course among E1 to E6 had the largest change in its enrollment as a percentage of its original enrollment?

1. E1
2. E2
3. E3
4. E6

Q. 40: Later, the college imposed a condition that if after the change of electives, the enrolment in any elective (other than E7) dropped to less than 20 students, all the students who had left that course will be required to re- enrol for that elective. Which of the following is a correct sequence of electives in decreasing order of their final enrolments?

1. E2, E3, E6, E5, E1, E4
2. E3, E2, E6, E5, E4, E1
3. E2, E5, E3, E1, E4, E6
4. E2, E3, E5, E6, E1, E3

LRDI SET 11

An old woman had the following assets:

- (a) Rs. 70 lakh in bank deposits
- (b) 1 house worth Rs. 50 lakh
- (c) 3 flats, each worth Rs. 30 lakh
- (d) Certain number of gold coins, each worth Rs. 1 lakh

She wanted to distribute her assets among her three children: Neeta, Seeta and Geeta.

The house, any of the flats or any of the coins were not to be split. That is, the house went entirely to one child; a flat went to one child and similarly, a gold coin went to one child.

Q. 41: Among the three, Neeta received the least amount in bank deposits, while Geeta received the highest. The value of the assets was distributed equally among the children, as were the gold coins. How much did Seeta receive in bank deposits (in lakhs of rupees)?

1. 30
2. 40
3. 20
4. 10

Q. 42: Among the three, Neeta received the least amount in bank deposits, while Geeta received the highest. The value of the assets was distributed equally among the children, as were the gold coins. How many flats did Neeta receive?

Q. 43: The value of the assets distributed among Neeta, Seeta and Geeta was in the ratio of 1:2:3, while the gold coins were distributed among them in the ratio of 2:3:4.

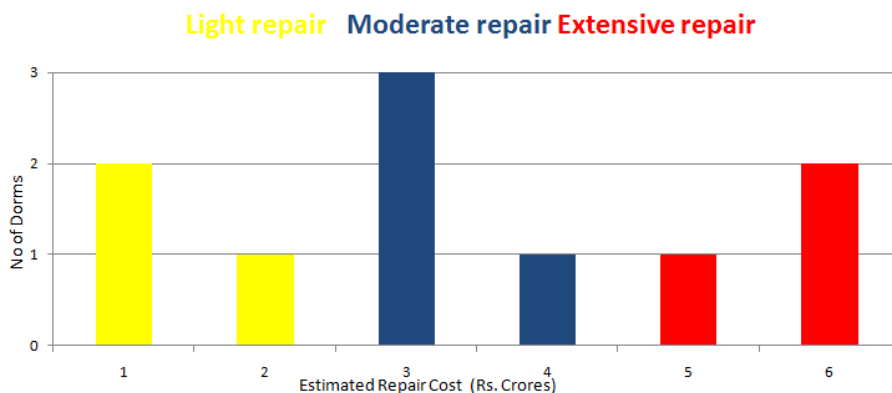
One child got all three flats and she did not get the house. One child, other than Geeta, got Rs. 30 lakh in bank deposits. How many gold coins did the old woman have?

1. 72
2. 90
3. 180
4. 216

Q. 44: The value of the assets distributed among Neeta, Seeta and Geeta was in the ratio of 1:2:3, while the gold coins were distributed among them in the ratio of 2:3:4. One child got all three flats and she did not get the house. One child, other than Geeta, got Rs. 30 lakh in. bank deposits. How much did Geeta get in bank deposits (in lakhs of rupees)?

LRDI SET 12

At a management school, the oldest 10 dorms, numbered 1 to 10, need to be repaired urgently. The following diagram represents the estimated repair costs (in Rs. Crores) for the 10 dorms. For any dorm, the estimated repair cost (in Rs. Crores) is an integer. Repairs with estimated cost Rs. 1 or 2 Crores are considered light repairs, repairs with estimated cost Rs. 3 or 4 are considered moderate repairs and repairs with estimated cost Rs. 5 or 6 Crores are considered extensive repairs.



Further, the following is known:

1. Odd-numbered dorms do not need light repair; even-numbered dorms do not need moderate repair and dorms, whose numbers are divisible by 3, do not need extensive repair.

2. Dorms 4 to 9 all need different repair costs, with Dorm 7 needing the maximum and Dorm 8 needing the minimum.

Q. 45: Which of the following is NOT necessarily true?

1. Dorm 1 needs a moderate repair
2. Dorm 5 repair will cost no more than Rs. 4 Crores
3. Dorm 7 needs an extensive repair
4. Dorm 10 repair will cost no more than Rs. 4 Crores

Q. 46: What is the total cost of repairing the odd-numbered dorms (in Rs. Crores)?

Q. 47: Suppose further that:

1. 4 of the 10 dorms needing repair are women's dorms and need a total of Rs. 20 Crores for repair.
2. Only one of Dorms 1 to 5 is a women's dorm.

What is the cost for repairing Dorm 9 (in Rs. Crores)?

Q. 48: Suppose further that:

1. 4 of the 10 dorms needing repair are women's dorms and need a total of Rs. 20 Crores for repair.
2. Only one of Dorms 1 to 5 is a women's dorm.

Which of the following is a women's dorm?

1. Dorm 2
2. Dorm 5
3. Dorm 8
4. Dorm 10

LRDI SET 13

A tea taster was assigned to rate teas from six different locations — Munnar, Wayanad, Ooty, Darjeeling, Assam and Himachal. These teas were placed in six cups,

numbered 1 to 6, not necessarily in the same order. The tea taster was asked to rate these teas on the strength of their flavour on a scale of 1 to 10. He gave a unique integer rating to each tea. Some other information is given below:

1. Cup 6 contained tea from Himachal.
2. Tea from Ooty got the highest rating, but it was not in Cup 3.
3. The rating of tea in Cup 3 was double the rating of the tea in Cup 5.
4. Only two cups got ratings in even numbers.
5. Cup 2 got the minimum rating and this rating was an even number.
6. Tea in Cup 3 got a higher rating than that in Cup 1.
7. The rating of tea from Wayanad was more than the rating of tea from Munnar, but less than that from Assam.

Q. 49: What was the second highest rating given?

Q. 50: What was the number of the cup that contained tea from Ooty?

Q. 51: If the tea from Munnar did not get the minimum rating, what was the rating of the tea from Wayanad?

1. 3
2. 5
3. 1
4. 6

Q. 52: If cups containing teas from Wayanad and Ooty had consecutive numbers, which of the following statements may be true?

1. Cup 5 contains tea from Assam
2. Cup 1 contains tea from Darjeeling
3. Tea from Wayanad has got a rating of 6
4. Tea from Darjeeling got the minimum rating

LRDI SET 14

In an 8 X 8 chessboard a queen placed anywhere can attack another piece if the piece is present in the same row, or in the same column or in any diagonal position in any possible 4 directions, provided there is no other piece in between in the path from the queen to that piece.

The columns are labelled a to h (left to right) and the rows are numbered 1 to 8 (bottom to top). The position of a piece is given by the combination of column and row labels. For example, position c5 means that the piece is in c th column and 5th row.

Q. 53: If the queen is at c5, and the other pieces at positions c2, g1, g3, g5 and a3, how many are under attack by the queen? There are no other pieces on the board.

1. 2
2. 3
3. 4
4. 5

Q. 54: If the other pieces are only at positions a1, a3, b4, d7, h7 and h8, then which of the following positions of the queen results in the maximum number of pieces being under attack?

1. f8
2. a7
3. c1
4. d3

Q. 55: If the other pieces are only at positions a1, a3, b4, d7, h7 and h8, then from how many positions the queen cannot attack any of the pieces?

1. 0
2. 3
3. 4
4. 6

Q. 56: Suppose the queen is the only piece on the board and it is at position d5. In how many positions can another piece be placed on the board such that it is safe from attack from the queen?

1. 32
2. 35
3. 36
4. 37

LRDI SET 15

Eight friends: Ajit, Byomkesh, Gargi, Jayanta, Kikira, Manik, Prodosh and Tapeshe are going to Delhi from Kolkata by a flight operated by Cheap Air. In the flight, sitting is arranged in 30 rows, numbered 1 to 30, each consisting of 6 seats, marked by letters A to F from left to right, respectively. Seats A to C are to the left of the aisle (the passage running from the front of the aircraft to the back), and seats D to F are to the right of the aisle. Seats A and F are by the windows and referred to as Window seats, C and D are by the aisle and are referred to as Aisle seats while B and E are referred to as Middle seats. Seats marked by consecutive letters are called consecutive seats (or seats next to each other). A seat number is a combination of the row number, followed by the letter indicating the position in the row; e.g., 1A is the left window seat in the first row, while 12E is the right middle seat in the 12th row.

Cheap Air charges Rs. 1000 extra for any seats in Rows 1, 12 and 13 as those have extra legroom. For Rows 2- 10, it charges Rs. 300 extra for Window seats and Rs. 500 extra for Aisle seats. For Rows 11 and 14 to 20, it charges Rs. 200 extra for Window seats and Rs. 400 extra for Aisle seats. All other seats are available at no extra charge.

The following are known:

1. The eight friends were seated in six different rows.
2. They occupied 3 Window seats, 4 Aisle seats and 1 Middle seat.
3. Seven of them had to pay extra amounts, totalling to Rs. 4600, for their choices of seat. One of them did not pay any additional amount for his/her choice of seat.

4. Jayanta, Ajit and Byomkesh were sitting in seats marked by the same letter, in consecutive rows in increasing order of row numbers; but all of them paid different amounts for their choices of seat. One of these amounts may be zero.

5. Gargi was sitting next to Kikira, and Manik was sitting next to Jayanta.

6. Prodosh and Tapesb were sitting in seats marked by the same letter, in consecutive rows in increasing order of row numbers; but they paid different amounts for their choices of seat. One of these amounts may be zero.

Q. 57: In which row was Manik sitting?

1. 10
2. 11
3. 12
4. 13

Q. 58: How much extra did Jayanta pay for his choice of seat?

1. Rs 300
2. Rs 400
3. Rs 500
4. Rs. 1000

Q. 59: How much extra did Gargi pay for her choice of seat?

1. Rs 0
2. Rs 300
3. Rs 400
4. Rs 1000

Q. 60: Who among the following did not pay any extra amount for his/her choice of seat?

1. Kikira
2. Manik
3. Gargi
4. Tapesb

LRDI SET 16

A high security research lab requires the researchers to set a pass key sequence based on the scan of the five fingers of their left hands. When an employee first joins the lab, her fingers are scanned in an order of her choice, and then when she wants to re-enter the facility, she has to scan the five fingers in the same sequence.

The lab authorities are considering some relaxations of the scan order requirements, since it is observed that some employees often get locked-out because they forget the sequence.

Q. 61: The lab has decided to allow a variation in the sequence of scans of the five fingers so that at most two scans (out of five) are out of place. For example, if the original sequence is Thumb (T), index finger (I), middle finger (M), ring finger (R) and little finger (L) then TLMRI is also allowed, but TMRLI is not.

How many different sequences of scans are allowed for any given person's original scan?

Q. 62: The lab has decided to allow variations of the original sequence so that input of the scanned sequence of five fingers is allowed to vary from the original sequence by one place for any of the fingers. Thus, for example, if TIMRL is the original sequence, then ITRML is also allowed, but LIMRT is not.

How many different sequences are allowed for any given person's original scan?

1. 7
2. 5
3. 8
4. 13

Q. 63: The lab has now decided to require six scans in the pass key sequence, where exactly one finger is scanned twice, and the other fingers are scanned exactly once, which can be done in any order. For example, a possible sequence is TIMTRL.

Suppose the lab allows a variation of the original sequence (of six inputs) where at most two scans (out of six) are out of place, as long as the finger originally scanned twice is scanned twice and other fingers are scanned once.

How many different sequences of scans are allowed for any given person's original scan?

Q. 64: The lab has now decided to require six scans in the pass key sequence, where exactly one finger is scanned twice, and the other fingers are scanned exactly once, which can be done in any order. For example, a possible sequence is TIMTRL.

Suppose the lab allows a variation of the original sequence (of six inputs) so that input in the form of scanned sequence of six fingers is allowed to vary from the original sequence by one place for any of the fingers, as long as the finger originally scanned twice is scanned twice and other fingers are scanned once.

How many different sequences of scans are allowed if the original scan sequence is LRLTIM?

1. 8
2. 11
3. 13
4. 14

LRDI SET 17

1600 satellites were sent up by a country for several purposes. The purposes are classified as broadcasting (B), communication (C), surveillance (S), and others (O). A satellite can serve multiple purposes; however a satellite serving either B, or C, or S does not serve O.

The following facts are known about the satellites:

1. The numbers of satellites serving B, C, and S (though may be not exclusively) are in the ratio 2:1:1.
2. The number of satellites serving all three of B, C, and S is 100.
3. The number of satellites exclusively serving C is the same as the number of satellites exclusively serving S. This number is 30% of the number of satellites exclusively serving B.

4. The number of satellites serving O is the same as the number of satellites serving both C and S but not B.

Q. 65: What best can be said about the number of satellites serving C?

1. Must be between 450 and 725
2. Cannot be more than 800
3. Must be between 400 and 800
4. Must be at least 100

Q. 66: What is the minimum possible number of satellites serving B exclusively?

1. 100
2. 200
3. 500
4. 250

Q. 67: If at least 100 of the 1600 satellites were serving O, what can be said about the number of satellites serving S?

1. At most 475
2. Exactly 475
3. At least 475
4. No conclusion is possible based on the given information

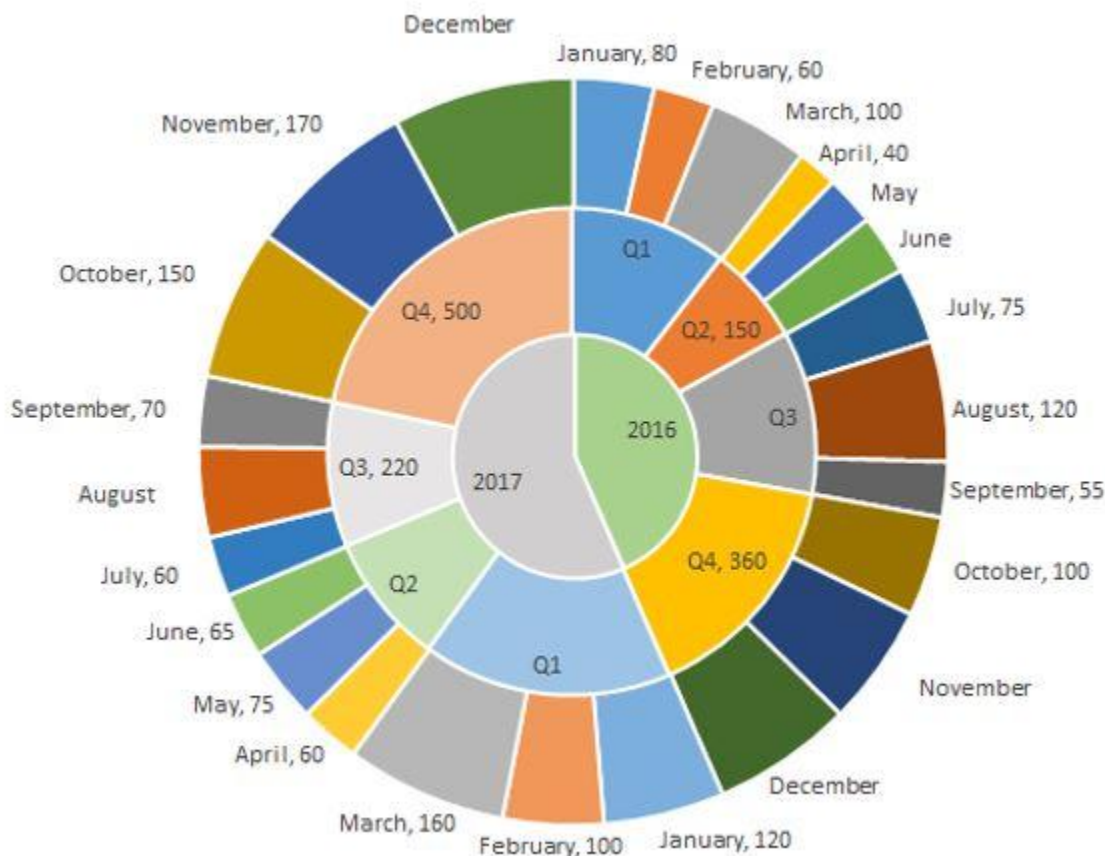
Q. 68: If the number of satellites serving at least two among B, C, and S is 1200, which of the following **MUST** be FALSE?

1. The number of satellites serving C cannot be uniquely determined
2. The number of satellites serving B is more than 1000
3. All 1600 satellites serve B or C or S
4. The number of satellites serving B exclusively is exactly 250

LRDI SET 18

The multi-layered pie-chart below shows the sales of LED television sets for a big retail electronics outlet during 2016 and 2017. The outer layer shows the monthly sales during this period, with each label showing the month followed by sales figure of that month. For some months, the sales figures are not given in the chart. The

middle-layer shows quarter-wise aggregate sales figures (in some cases, aggregate quarter-wise sales numbers are not given next to the quarter). The innermost layer shows annual sales. It is known that the sales figures during the three months of the second quarter (April, May, June) of 2016 form an arithmetic progression, as do the three monthly sales figures in the fourth quarter (October, November, December) of that year.



Q. 69: What is the percentage increase in sales in December 2017 as compared to the sales in December 2016?

1. 28.57
2. 22.22
3. 50.00
4. 38.46

Q. 70: In which quarter of 2017 was the percentage increase in sales from the same quarter of 2016 the highest?

1. Q1
2. Q3
3. Q4
4. Q2

Q. 71: During which quarter was the percentage decrease in sales from the previous quarter's sales the highest?

1. Q2 of 2017
2. Q1 of 2017
3. Q4 of 2017
4. Q2 of 2016

Q. 72: During which month was the percentage increase in sales from the previous month's sales the highest?

1. March of 2017
2. October of 2017
3. October of 2016
4. March of 2016

LRDI SET 19

An ATM dispenses exactly Rs. 5000 per withdrawal using 100, 200 and 500 rupee notes. The ATM requires every customer to give her preference for one of the three denominations of notes. It then dispenses notes such that the number of notes of the customer's preferred denomination exceeds the total number of notes of other denominations dispensed to her.

Q. 73: In how many different ways can the ATM serve a customer who gives 500 rupee notes as her preference?

Q. 74: If the ATM could serve only 10 customers with a stock of fifty 500 rupee notes and a sufficient number of notes of other denominations, what is the maximum number of customers among these 10 who could have given 500 rupee notes as their preferences?

Q. 75: What is the maximum number of customers that the ATM can serve with a stock of fifty 500 rupee notes and a sufficient number of notes of other denominations, if all the customers are to be served with at most 20 notes per withdrawal?

1. 10
2. 16
3. 12
4. 13

Q. 76: What is the number of 500 rupee notes required to serve 50 customers with 500 rupee notes as their preferences and another 50 customers with 100 rupee notes as their preferences, if the total number of notes to be dispensed is the smallest possible?

1. 800
2. 750
3. 900
4. 1400

LRDI SET 20

Adriana, Bandita, Chitra, and Daisy are four female students, and Amit, Barun, Chetan, and Deb are four male students. Each of them studies in one of three institutes - X, Y, and Z. Each student majors in one subject among Marketing, Operations, and Finance, and minors in a different one among these three subjects. The following facts are known about the eight students:

1. Three students are from X, three are from Y, and the remaining two students, both female, are from Z.
2. Both the male students from Y minor in Finance, while the female student from Y majors in Operations.
3. Only one male student majors in Operations, while three female students minor in Marketing.
4. One female and two male students major in Finance.
5. Adriana and Deb are from the same institute. Daisy and Amit are from the same institute.

6. Barun is from Y and majors in Operations. Chetan is from X and majors in Finance.

7. Daisy minors in Operations.

Q. 77: Who are the students from the institute Z?

1. Adriana and Bandita
2. Adriana and Daisy
3. Bandita and Chitra
4. Chitra and Daisy

Q. 78: Which subject does Deb minor in?

1. Cannot be determined uniquely from the given information
2. Marketing
3. Operations
4. Finance

Q. 79: Which subject does Amit major in?

1. Operations
2. Marketing
3. Cannot be determined uniquely from the given information
4. Finance

Q. 80: If Chitra majors in Finance, which subject does Bandita major in?

1. Cannot be determined uniquely from the given information
2. Marketing
3. Finance
4. Operations

LRDI SET 21

You are given an $n \times n$ square matrix to be filled with numerals so that no two adjacent cells have the same numeral. Two cells are called adjacent if they touch each other horizontally, vertically or diagonally. So a cell in one of the four corners has three cells adjacent to it, and a cell in the first or last row or column which is not in the corner has five cells adjacent to it. Any other cell has eight cells adjacent to it.

Q. 81: What is the minimum number of different numerals needed to fill a 3×3 square matrix?

Q. 82: What is the minimum number of different numerals needed to fill a 5×5 square matrix?

Q. 83: Suppose you are allowed to make one mistake, that is, one pair of adjacent cells can have the same numeral. What is the minimum number of different numerals required to fill a 5×5 matrix?

1. 16
2. 4
3. 25
4. 9

Q. 84: Suppose that all the cells adjacent to any particular cell must have different numerals. What is the minimum number of different numerals needed to fill a 5×5 square matrix?

1. 9
2. 16
3. 4
4. 25

LRDI SET 22

Fuel contamination levels at each of 20 petrol pumps P1, P2, ..., P20 were recorded as either high, medium, or low.

1. Contamination levels at three pumps among P1 – P5 were recorded as high.
2. P6 was the only pump among P1 – P10 where the contamination level was recorded as low.
3. P7 and P8 were the only two consecutively numbered pumps where the same levels of contamination were recorded.

4. High contamination levels were not recorded at any of the pumps P16 – P20.
5. The number of pumps where high contamination levels were recorded was twice the number of pumps where low contamination levels were recorded.

Q. 85: Which of the following **MUST** be true?

1. The contamination level at P10 was recorded as high.
2. The contamination level at P13 was recorded as low.
3. The contamination level at P20 was recorded as medium.
4. The contamination level at P12 was recorded as high.

Q. 86: What best can be said about the number of pumps at which the contamination levels were recorded as medium?

1. Exactly 8
2. More than 4
3. At least 8
4. At most 9

Q. 87: If the contamination level at P11 was recorded as low, then which of the following **MUST** be true?

1. The contamination level at P12 was recorded as high.
2. The contamination level at P14 was recorded as medium.
3. The contamination level at P15 was recorded as medium.
4. The contamination level at P18 was recorded as low.

Q. 88: If contamination level at P15 was recorded as medium, then which of the following **MUST** be **FALSE**?

1. Contamination level at P14 was recorded to be higher than that at P15.
2. Contamination levels at P10 and P14 were recorded as the same.
3. Contamination levels at P13 and P17 were recorded as the same.
4. Contamination levels at P11 and P16 were recorded as the same.

LRDI SET 23

A company administers a written test comprising of three sections of 20 marks each – Data Interpretation (DI), Written English (WE) and General Awareness (GA), for recruitment. A composite score for a candidate (out of 80) is calculated by doubling her marks in DI and adding it to the sum of her marks in the other two sections. Candidates who score less than 70% marks in two or more sections are disqualified. From among the rest, the four with the highest composite scores are recruited. If four or less candidates qualify, all who qualify are recruited.

Ten candidates appeared for the written test. Their marks in the test are given in the table below. Some marks in the table are missing, but the following facts are known:

1. No two candidates had the same composite score.
2. Ajay was the unique highest scorer in WE.
3. Among the four recruited, Geeta had the lowest composite score.
4. Indu was recruited.
5. Danish, Harini, and Indu had scored the same marks the in GA.
6. Indu and Jatin both scored 100% in exactly one section and Jatin's composite score was 10 more than Indu's.

Candidate	marks out of 20		
	DI	WE	GA
Ajay	8		16
Bala		9	11
Chetna	19	4	12
Danish	8	15	
Ester	12	18	16
Falak	15	7	10
Geeta	14		6
Harini	5		
Indu		8	
Jatin		16	14

Q. 89: Which of the following statements **MUST** be true?

1. Jatin's composite score was more than that of Danish.

- 2. Indu scored less than Chetna in DI.
- 3. Jatin scored more than Indu in GA.

- 1. Only 2
- 2. Only 1
- 3. Both 1 and 2
- 4. Both 2 and 3

Q. 90: Which of the following statements MUST be FALSE?

- 1. Chetna scored more than Bala in DI
- 2. Harini's composite score was less than that of Falak
- 3. Bala's composite score was less than that of Ester
- 4. Bala scored same as Jatin in DI

Q. 91: If all the candidates except Ajay and Danish had different marks in DI, and Bala's composite score was less than Chetna's composite score, then what is the maximum marks that Bala could have scored in DI?

Q. 92: If all the candidates scored different marks in WE then what is the maximum marks that Harini could have scored in WE?

LRDI SET 24

Twenty four people are part of three committees which are to look at research, teaching, and administration respectively. No two committees have any member in common. No two committees are of the same size. Each committee has three types of people: bureaucrats, educationalists, and politicians, with at least one from each of the three types in each committee. The following facts are also known about the committees:

- 1. The numbers of bureaucrats in the research and teaching committees are equal, while the number of bureaucrats in the research committee is 75% of the number of bureaucrats in the administration committee.
- 2. The number of educationalists in the teaching committee is less than the number of educationalists in the research committee. The number of educationalists in the research committee is the average of the numbers of educationalists in the other two committees.

3. 60% of the politicians are in the administration committee, and 20% are in the teaching committee.

Q. 93: Based on the given information, which of the following statements **MUST** be FALSE?

1. The size of the research committee is less than the size of the administration committee
2. In the teaching committee the number of educationalists is equal to the number of politicians
3. In the administration committee the number of bureaucrats is equal to the number of educationalists
4. The size of the research committee is less than the size of the teaching committee

Q. 94: What is the number of bureaucrats in the administration committee?

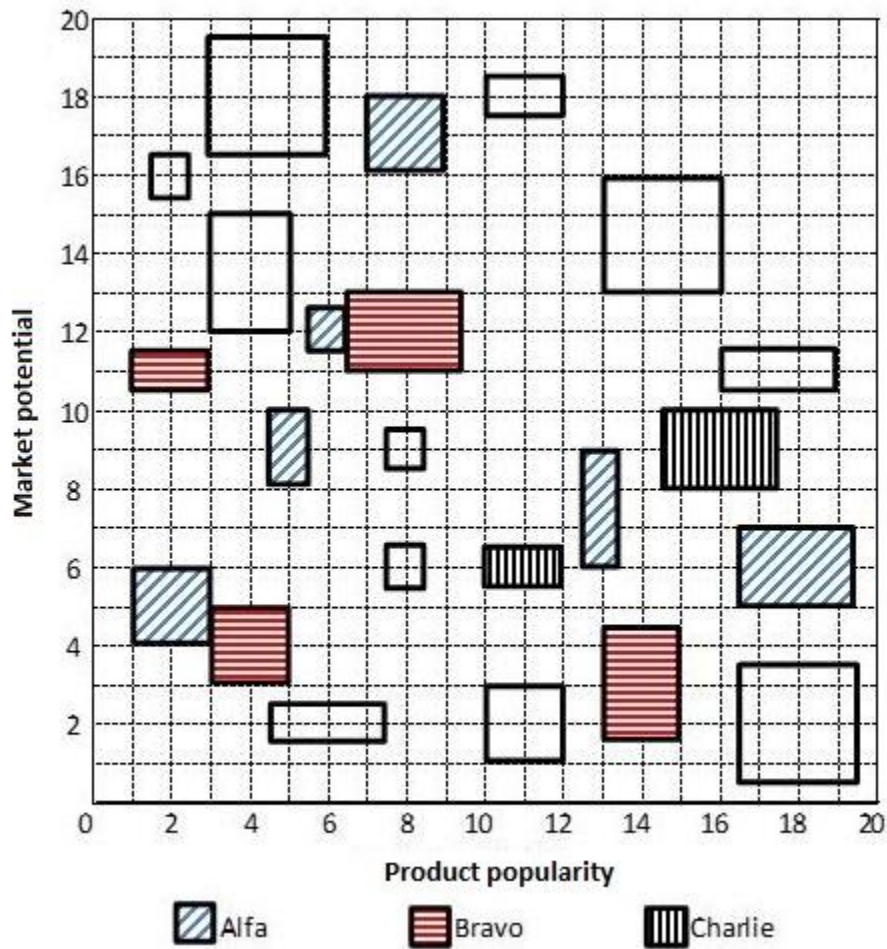
Q. 95: What is the number of educationalists in the research committee?

Q. 96: Which of the following **CANNOT** be determined uniquely based on the given information?

1. The total number of educationalists in the three committees
2. The total number of bureaucrats in the three committees
3. The size of the research committee
4. The size of the teaching committee

LRDI SET 25

Each of the 23 boxes in the picture below represents a product manufactured by one of the following three companies: Alfa, Bravo and Charlie. The area of a box is proportional to the revenue from the corresponding product, while its centre represents the Product popularity and Market potential scores of the product (out of 20). The shadings of some of the boxes have got erased.



The companies classified their products into four categories based on a combination of scores (out of 20) on the two parameters – Product popularity and Market potential as given below:

	Promising	Blockbuster	Doubtful	No-hope
Product popularity score	>10	>10	≤10	≤10

Market potential score	>10	≤ 10	>10	≤ 10
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The following facts are known:

1. Alfa and Bravo had the same number of products in the Blockbuster category.
2. Charlie had more products than Bravo but fewer products than Alfa in the No-hope category.
3. Each company had an equal number of products in the Promising category.
4. Charlie did not have any product in the Doubtful category, while Alfa had one product more than Bravo in this category.
5. Bravo had a higher revenue than Alfa from products in the Doubtful category.
6. Charlie had a higher revenue than Bravo from products in the Blockbuster category.
7. Bravo and Charlie had the same revenue from products in the No-hope category.
8. Alfa and Charlie had the same total revenue considering all products.

Q. 97: Considering all companies' products, which product category had the highest revenue?

1. Doubtful
2. Promising
3. No-hope
4. Blockbuster

Q. 98: Which of the following is the correct sequence of numbers of products Bravo had in No-hope, Doubtful, Promising and Blockbuster categories respectively?

1. 1,3,1,3
2. 1,3,1,2
3. 2,3,1,2
4. 3,3,1,2

Q. 99: Which of the following statements is NOT correct?

1. Bravo's revenue from Blockbuster products was greater than Alfa's revenue from Doubtful products
2. The total revenue from No-hope products was less than the total revenue from Doubtful products
3. Bravo and Charlie had the same revenues from No-hope products
4. Alfa's revenue from Blockbuster products was the same as Charlie's revenue from Promising products

Q. 100: If the smallest box on the grid is equivalent to revenue of Rs.1 crore, then what approximately was the total revenue of Bravo in Rs. crore?

1. 40
2. 24
3. 30
4. 34

LRDI SET 26

There are only four brands of entry level smartphones called Azra, Bysi, Cxqi, and Dipq in a country.

Details about their market share, unit selling price, and profitability (defined as the profit as a percentage of the revenue) for the year 2016 are given in the table below:

In 2017, sales volume of entry level smartphones grew by 40% as compared to that in 2016. Cxqi offered a 40% discount on its unit selling price in 2017, which resulted in a 15% increase in its market share. Each of the other three brands lost 5% market share. However, the profitability of Cxqi came down to half of its value in 2016. The unit selling prices of the other three brands and their profitability values remained the same in 2017 as they were in 2016.

Q. 101: The brand that had the highest revenue in 2016 is:

1. Dipq
2. Bysi
3. Cxqi
4. Azra

Q. 102: The brand that had the highest profit in 2016 is:

1. Azra
2. Bysi
3. Cxqi
4. Dipq

Q. 103: The brand that had the highest profit in 2017 is:

1. Dipq
2. Bysi
3. Cxqi
4. Azra

Q. 104: The complete list of brands whose profits went up in 2017 from 2016 is:

1. Azra, Bysi, Cxqi
2. Bysi, Cxqi, Dipq
3. Cxqi, Azra, Dipq
4. Azra, Bysi, Dipq

LRDI SET 27

Seven candidates, Akil, Balaram, Chitra, Divya, Erina, Fatima, and Ganeshan, were invited to interview for a position. Candidates were required to reach the venue before 8 am. Immediately upon arrival, they were sent to one of three interview rooms: 101, 102, and 103. The following venue log shows the arrival times for these candidates. Some of the names have not been recorded in the log and have been marked as ‘?’.

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Time	7:10 am	7:15 am	7:25 am	7:30 am	7:40 am	7:45 am
Person	Akil, ?	?	?	Chitra	Fatima	?

Additionally here are some statements from the candidates:

Balaram: I was the third person to enter Room 101.

Chitra: I was the last person to enter the room I was allotted to.

Erina: I was the only person in the room I was allotted to.

Fatima: Three people including Akil were already in the room that I was allotted to when I entered it.

Ganeshan: I was one among the two candidates allotted to Room 102.

Q. 105: What best can be said about the room to which Divya was allotted?

1. Definitely Room 102
2. Definitely Room 103
3. Definitely Room 101
4. Either Room 101 or Room 102

Q. 106: Who else was in Room 102 when Ganeshan entered?

1. No one
2. Divya
3. Chitra
4. Akil

Q. 107: When did Erina reach the venue?

1. 7:25 am
2. 7:45 am

3. 7:10 am
4. 7:15 am

Q. 108: If Ganeshan entered the venue before Divya, when did Balaram enter the venue?

1. 7:45 am
2. 7:25 am
3. 7:15 am
4. 7:10 am

LRDI SET 28

The base exchange rate of a currency X with respect to a currency Y is the number of units of currency Y which is equivalent in value to one unit of currency X. Currency exchange outlets buy currency at buying exchange rates that are lower than base exchange rates, and sell currency at selling exchange rates that are higher than base exchange rates.

A currency exchange outlet uses the local currency L to buy and sell three international currencies A, B, and C, but does not exchange one international currency directly with another. The base exchange rates of A, B and C with respect to L are in the ratio 100:120:1. The buying exchange rates of each of A, B, and C with respect to L are 5% below the corresponding base exchange rates, and their selling exchange rates are 10% above their corresponding base exchange rates.

The following facts are known about the outlet on a particular day:

1. The amount of L used by the outlet to buy C equals the amount of L it received by selling C.
2. The amounts of L used by the outlet to buy A and B are in the ratio 5:3.
3. The amounts of L the outlet received from the sales of A and B are in the ratio 5:9.
4. The outlet received 88000 units of L by selling A during the day.
5. The outlet started the day with some amount of L, 2500 units of A, 4800 units of B, and 48000 units of C.

6. The outlet ended the day with some amount of L, 3300 units of A, 4800 units of B, and 51000 units of C.

Q. 109: How many units of currency A did the outlet buy on that day?

Q. 110: How many units of currency C did the outlet sell on that day?

1. 19000
2. 3000
3. 6000
4. 22000

Q. 111: What was the base exchange rate of currency B with respect to currency L on that day?

Q. 112: What was the buying exchange rate of currency C with respect to currency L on that day?

1. 0.95
2. 1.10
3. 1.90
4. 2.20

LRDI SET 29

Fun Sports (FS) provides training in three sports – Gilli-danda (G), Kho-Kho (K), and Ludo (L). Currently it has an enrollment of 39 students each of whom is enrolled in at least one of the three sports. The following details are known:

1. The number of students enrolled only in L is double the number of students enrolled in all the three sports.
2. There are a total of 17 students enrolled in G.
3. The number of students enrolled only in G is one less than the number of students enrolled only in L.

4. The number of students enrolled only in K is equal to the number of students who are enrolled in both K and L.
5. The maximum student enrollment is in L.
6. Ten students enrolled in G are also enrolled in at least one more sport.

Q. 113: What is the minimum number of students enrolled in both G and L but not in K?

Q. 114: If the numbers of students enrolled in K and L are in the ratio 19:22, then what is the number of students enrolled in L?

1. 18
2. 19
3. 17
4. 22

Q. 115: Due to academic pressure, students who were enrolled in all three sports were asked to withdraw from one of the three sports. After the withdrawal, the number of students enrolled in G was six less than the number of students enrolled in L, while the number of students enrolled in K went down by one. After the withdrawal, how many students were enrolled in both G and K?

Q. 116: Due to academic pressure, students who were enrolled in all three sports were asked to withdraw from one of the three sports. After the withdrawal, the number of students enrolled in G was six less than the number of students enrolled in L, while the number of students enrolled in K went down by one. After the withdrawal, how many students were enrolled in both G and L?

1. 6
2. 7
3. 5
4. 8

LRDI SET 30

An agency entrusted to accredit colleges looks at four parameters: faculty quality (F), reputation (R), placement quality (P), and infrastructure (I). The four parameters are used to arrive at an overall score, which the agency uses to give an accreditation to the colleges. In each parameter, there are five possible letter grades given, each carrying certain points: A (50 points), B (40 points), C (30 points), D (20 points), and F (0 points). The overall score for a college is the weighted sum of the points scored in the four parameters. The weights of the parameters are 0.1, 0.2, 0.3 and 0.4 in some order, but the order is not disclosed. Accreditation is awarded based on the following scheme:

Range	Accreditation
Overall score ≥ 45	AAA
$35 \leq \text{Overall score} < 45$	BAA
$25 \leq \text{Overall score} < 35$	BBA
$15 \leq \text{Overall score} < 25$	BBB
Overall score < 15	Junk

Eight colleges apply for accreditation, and receive the following grades in the four parameters (F, R, P, and I):

	F	R	P	I
A-one	A	A	A	B
Best Ed	B	C	D	D
Cosmopolitan	B	D	D	C
Dominance	D	D	B	C
Education Aid	A	A	B	A
Fancy	A	A	B	B
Global	C	F	D	D

High Q	C	D	D	B
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It is further known that in terms of overall scores:

1. High Q is better than Best Ed;
2. Best Ed is better than Cosmopolitan; and
3. Education Aid is better than A-one.

Q. 117: What is the weight of the faculty quality parameter?

1. 0.3
2. 0.2
3. 0.4
4. 0.1

Q. 118: How many colleges receive the accreditation of AAA?

Q. 119: What is the highest overall score among the eight colleges?

Q. 120: How many colleges have overall scores between 31 and 40, both inclusive?

1. 1
2. 3
3. 0
4. 2

LRDI SET 31

According to a coding scheme the sentence

Peacock is designated as the national bird of India

is coded as

5688999 35 1135556678 56 458 13666689 1334 79 13366

This coding scheme has the following rules:

1. The scheme is case-insensitive (does not distinguish between upper case and lower case letters).
2. Each letter has a unique code which is a single digit from among 1,2,3, ..., 9.
3. The digit 9 codes two letters, and every other digit codes three letters.
4. The code for a word is constructed by arranging the digits corresponding to its letters in a non-decreasing sequence.

Answer these questions on the basis of this information.

Q. 121: What best can be concluded about the code for the letter L?

1. 1
2. 1 or 8
3. 6
4. 8

Q. 122: What best can be concluded about the code for the letter B?

1. 1 or 3 or 4
2. 3
3. 1
4. 3 or 4

Q. 123: For how many digits can the complete list of letters associated with that digit be identified?

1. 3
2. 0
3. 1
4. 2

Q. 124: Which set of letters CANNOT be coded with the same digit?

1. S,U,V

2. I,B,M
3. X,Y,Z
4. S,E,Z

LRDI SET 32

Each visitor to an amusement park needs to buy a ticket. Tickets can be Platinum, Gold, or Economy. Visitors are classified as Old, Middle-aged, or Young. The following facts are known about visitors and ticket sales on a particular day:

1. 140 tickets were sold.
2. The number of Middle-aged visitors was twice the number of Old visitors, while the number of Young visitors was twice the number of Middle-aged visitors.
3. Young visitors bought 38 of the 55 Economy tickets that were sold, and they bought half the total number of Platinum tickets that were sold.
4. The number of Gold tickets bought by Old visitors was equal to the number of Economy tickets bought by Old visitors.

Q. 125: If the number of Old visitors buying Platinum tickets was equal to the number of Middle-aged visitors buying Platinum tickets, then which among the following could be the total number of Platinum tickets sold?

1. 34
2. 38
3. 32
4. 36

Q. 126: If the number of Old visitors buying Platinum tickets was equal to the number of Middle-aged visitors buying Economy tickets, then the number of Old visitors buying Gold tickets was

Q. 127: If the number of Old visitors buying Gold tickets was strictly greater than the number of Young visitors buying Gold tickets, then the number of Middle-aged visitors buying Gold tickets was

Q. 128: Which of the following statements MUST be FALSE?

1. The numbers of Old and Middle-aged visitors buying Economy tickets were equal
2. The numbers of Old and Middle-aged visitors buying Platinum tickets were equal
3. The numbers of Middle-aged and Young visitors buying Gold tickets were equal
4. The numbers of Gold and Platinum tickets bought by Young visitors were equal

Answer Keys

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	2	17	2	33	2	49	7
2	3	18	1	34	3	50	4
3	1	19	2	35	2	51	2
4	2	20	4	36	1	52	2
5	1	21	3	37	3	53	3
6	1	22	4	38	4	54	4
7	1	23	3	39	4	55	3
8	1	24	3	40	1	56	3
9	1	25	3	41	3	57	1
10	60	26	3	42	2	58	3
11	170	27	40	43	2	59	4
12	1	28	4	44	20	60	4
13	1	29	2	45	4	61	11
14	6	30	2	46	19	62	3
15	2	31	2	47	3	63	15
16	2	32	2	48	4	64	3

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
65	1	81	4	97	4	113	4
66	4	82	4	98	2	114	4
67	3	83	2	99	1	115	2
68	1	84	1	100	4	116	6
69	1	85	1	101	4	117	4
70	1	86	1	102	3	118	2
71	1	87	2	103	2	119	48
72	2	88	4	104	4	120	3
73	7	89	3	105	3	121	1
74	6	90	4	106	1	122	4
75	3	91	13	107	2	123	4
76	3	92	14	108	2	124	1
77	3	93	4	109	1200	125	3
78	4	94	4	110	1	126	3
79	4	95	3	111	240	127	2
80	4	96	4	112	3	128	1