

# LRDI Class

The dramatics society of a college planned to select students from the first year for the annual play. They had a plan to select 3 girls and 2 boys. They floated an application and gave a time of three days to apply for the auditions. By the end of the first day, 6 boys and some girls had applied. The members of the society calculated that they had 1800 ways to select the candidates. By the end of the second day, 3 more girls and 2 more boys applied for the audition. By the end of the third day, 2 more girls and 2 more boys applied for the audition. At this point, the society reconsidered their decision on the number of selections to be made and decided to select one more girl and one more boy for the play . Unfortunately on the day of the audition, 6 girls and 5 boys did not turn up.

Q1. How many girls applied on the first day?

- 1) 10
- 2) 9
- 3) 12
- 4) 8

Q2. What is the number of ways in which the members could be selected at the end of day 2?

- 1) 4368
- 2) 7920
- 3) 8008
- 4) 6336

Q3. The number of ways of selection at the end of the third day is how many times the number of ways of selection at the end of the first day?

- 1) 72
- 2) 120
- 3) 60
- 4) 91

Q4. What is the number of ways of selecting the remaining candidates at the end of the audition if one boy and one girl is already selected?

- 1) 720
- 2) 336
- 3) 576
- 4) 864

A particular ATM has notes of four different denominations, Rs.2000, Rs.1000, Rs.500 and Rs.100. While dispensing cash, the ATM always tries to minimize the number of notes dispensed based on the number of notes of each denomination available in the ATM.

At the beginning of a particular day, there were a certain number of notes of each denomination in the ATM. Further, no additional cash was loaded in to the ATM at any point during the day. Exactly seven persons, Amit, Girish, Lokesh, Bhargav, Rohit, Harish and Manish, withdrew cash from the ATM on that day, not necessarily in the same order.

The following table provides the amount withdrawn by each customer from the ATM, the total number of notes of all denominations dispensed and the number of Rs.100 notes dispensed by the ATM:

Customer	Amount Withdrawn (Rs.)	Total Number of Notes Dispensed	Number of Rs.100 Notes Dispensed
Amit	3800	14	8
Girish	1000	10	10
Lokesh	5300	9	3
Bhargav	4500	9	0
Rohit	2400	6	4
Harish	2700	4	2
Manish	6300	7	3

Further, it is known that Lokesh did not receive any Rs.2000 notes.

Q1. Who was the third person to withdraw cash from the ATM?

- a) Rohit   b) Lokesh   c) Manish   d) Cannot be determined

Q2. What is the number of Rs.500 notes dispensed to the sixth person who withdrew cash from the ATM?

- a) 0        b) 2        c) 6        d) 9

Q3. Among the persons who withdrew cash from the ATM after Lokesh did, to how many persons were more than two Rs.500 notes dispensed?

- a) 1    b) 2    c) 3    d) 4

Q4. What was the number of Rs.1000 notes in the ATM at the beginning of the day?

- a) 12    b) 10    c) 8    d) Cannot be determined

In a kindergarten class, the teacher was teaching the alphabet to the children in her class. He devised an exercise in which he called each child and asked him/her to write the letter with which his/her name begins (i.e., the first letter of his/her name) on the board. The first child writes the first letter of his name anywhere on a board, which was initially blank.

From the second child onwards, they have to write the letters based on the following rules:

- 1. If the first letter of the child's name comes alphabetically before the letter written by the first child, then the child has to write the first letter of his name to the left of the letter that the first child wrote.
- 2. Otherwise, the child has to write the first letter of his/her name to the right of the letter that the first child wrote.

Any child (except for the first child) who writes a letter on the board always writes it either to the immediate left of the leftmost letter on the board or to the immediate right of the rightmost letter on the board, based on the abovementioned rules.

Q1. If, after each of ten children wrote a letter on the board, the ten letters from left to right spelled 'BALJMPOSTR', which of the following can be the name of the child that wrote the first letter on the board?

- a) Jatin   b) Manoj   c) Pavan   d) Omar

Q2. If, after seven children wrote on the board, the seven letters from left to right spelled 'RHCASLT', which of the following was the fifth letter to be written on the board?

- a) H   b) C   c) S   d) Cannot be determined

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Q3. If, after seven children wrote on the board, the seven letters from left to right spelled 'JFPQUTR', which of the following cannot be the first letter of the name of the third child to write on the board?

- a) J   b) T   c) R   d) More than one of the above

Q4. After six children wrote on the board, the first, third and fifth letter from the left are S, T and R respectively. If the first letters of the names of all the children were distinct and the first letter of the name of the first child to write on the board was  $\theta$ , how many possibilities exist for  $\theta$ ?

- a) 6   b) 20   c) 8   d) 23

Seven persons, Ankur, Bhargav, Chirag, Dheeraj, Farhan, Gaurav and Harish, were invited to speak at a conference, which comprised only the speeches of these seven persons. When the persons reached the venue of the conference, they realized that they were asked to sit around a circular table which had only six uniformly spaced seats. The seven of them came to an agreement such that, at the beginning of the conference, while the first person to speak gives his speech at the podium, the remaining six persons will sit around the table. Once the first person finishes his speech, the second person to speak will stand at the podium and make his speech, offering his seat to the person who spoke just before him. This process of sharing the seats will continue until all the seven persons had finished their speeches, at the end of which all the seven persons will leave the venue. The following information is known about their seating arrangement during the conference:

- 1. The two seats which Harish occupied during the conference were exactly opposite each other.
- 2. Farhan, who was sitting opposite Bhargav at the beginning of the conference, did not occupy any other seat throughout the conference, while both Bhargav and Farhan occupied the same seat at different times during the conference.
- 3. Dheeraj, who was sitting to the left of Ankur at the beginning of the conference, gave his speech immediately after Ankur.
- 4. Gaurav sat in two different seats, neither of which was opposite any seat in which Bhargav sat.
- 5. Ankur sat to the left of Farhan at the beginning of the conference.

Q1. Who was sitting opposite Gaurav at the beginning of the conference?  
a) Ankur    b) Farhan    c) Harish    d) Dheeraj

Q2. Who among the following was not sitting opposite Ankur at any point during the conference?  
a) Harish    b) Gaurav    c) Dheeraj    d) Chirag

Q3. Who was sitting opposite Harish when Dheeraj was giving his speech?  
a) Farhan    b) Gaurav    c) Ankur    d) Bhargav

Q4. Who was sitting to the left of Bhargav when the last person was giving his speech?  
a) Harish    b) Ankur    c) Chirag    d) Farhan

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