CAT 2023 DILR Slot 2 Question Paper

General Instructions

(i) This question paper contains 20 questions. All questions are compulsory.

(ii) It comprises 12 single-correct multiple-choice questions and 8 numerical / type-in-the-answer questions.

(iii) The questions are grouped under 4 reading comprehension / data sets; read each passage or data set before its questions.

(iv) Attempt every question; detailed solutions are provided in the companion solutions booklet.

(v) For numerical questions, report the answer rounded exactly as asked.

1. 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

Firm	First year of existence	Last year of existence	Total amount raised (Rs. crores)
Elavalaki	2010		13

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

(A) Only Bzygoo and Czechy and Drjbna

(B) Only Czechy

(C) Only Czechy and Drjbna

(D) Only Drjbna

1.2. 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 or Rs. 9 crores.

(B) It is either Rs. 7 crores or Rs. 8 crores.

(C) It is either Rs. 8 crores or Rs. 9 crores.

(D) It is exactly Rs. 8 crores.

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

1.4. 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) 9

(C) 11

(D) 10

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

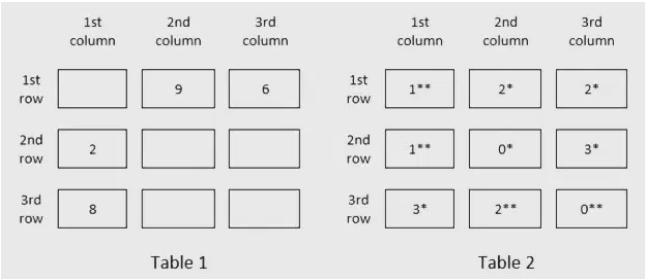
(A) Bzygoo raised more money than Elavalaki in 2014.

(B) Alfloo raised the same amount of money as Bzygoo in 2014.

(C) Alfloo raised the same amount of money as Drjbna in 2013.

(D) Bzygoo raised the same amount of money as Elavalaki in 2013.

2. 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. 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.

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

(A) 110

(B) 120

(C) 90

(D) 100

3. 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

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

(A) Ride-1, Ride-2, and Ride-3

(B) Ride-1 and Ride-3

(C) Ride-1, Ride-2, and Ride-4

(D) Ride-1 and Ride-4

3.2. Which ride was taken by all three visitors?

(A) Ride-1

(B) Ride-3

(C) Ride-4

(D) Ride-2

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

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

4. 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.

Table 1: 2-day averages for Days 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.

Table 2 : Ranks of participants on each day

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

Table 2 : Ranks of participants on each day

	Day 1	Day 2	Day 3	Day 4	Day 5
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.

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

(A) 6

(B) 7

(C) 5

(D) 8

4.2. Who attains the maximum total score?

(A) Cannot be determined

(B) Akhil

(C) Bimal

(D) Chatur

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

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

(A) 4

(B) 5

(C) 6

(D) Cannot be determined

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

4.6. What is the total number of coins in all the boxes in the 3rd row?

(A) 45

(B) 15

(C) 36

(D) 30

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

(A) 3

(B) 4

(C) 5

(D) 8

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

2.4. How many sacks have exactly one coin?

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