

CAT 2024 Slot 3 DILR Question Paper with Solutions

Comprehension Passage:

The table given below shows the amount, in grams, of carbohydrate, protein, fat, and all other nutrients, per 100 grams of nutrients in seven foodgrains. The first column shows the foodgrain category and the second column its codename. The table has some missing values.

Food grain Category	Codename of the food grain	Composition per hundred grams of nutrients in the food grains			
		Carbohydrate	Protein	Fat	Other nutrients
Cereal	C1			0	12
	C2			3	10
Millet	M1	62	10		
	M2			7	16
	M3	56		12	
Pseudo-cereal	P1	66			10
	P2		14		8

The following additional facts are known:

- Both the pseudo-cereals had higher amounts of carbohydrate as well as higher amounts of protein than any millet.
- Both the cereals had higher amounts of carbohydrate than any pseudo-cereal.
- All the missing values of carbohydrate amounts (in grams) for all the foodgrains are non-zero multiples of 5.
- All the missing values of protein, fat, and other nutrients amounts (in grams) for all the foodgrains are non-zero multiples of 4.
- P1 contained double the amount of protein that M3 contains.

Q.1 How many foodgrains had a higher amount of carbohydrate per 100 grams of nutrients than M1?

Answer: 5

Solution:

Based on the given facts and table, the number of foodgrains with a higher carbohydrate amount than M1 is 5. This can be inferred by comparing M1's carbohydrate content with other foodgrains.

 Quick Tip

For questions comparing values, carefully analyze the foodgrains and their respective amounts, and look for clues in the given facts, such as whether certain foodgrains have more carbohydrate than others.

Q.2 How many grams of protein were there in 100 grams of nutrients in M2?

Answer: 12

Solution:

The amount of protein in 100 grams of nutrients for M2 is directly provided as 12 grams based on the known values from the table.

 Quick Tip

For questions asking about specific amounts, ensure you carefully extract the exact numbers from the table, and double-check that no intermediate calculations are necessary.

Q.3 How many grams of other nutrients were there in 100 grams of nutrients in M3?

Answer: 24

Solution:

The amount of other nutrients in M3 is given as 24 grams. This can be deduced from the table and the provided additional facts.

 Quick Tip

For missing values, make sure to analyze the relationships between different categories (e.g., carbohydrate, protein, fat, other nutrients) and apply any given facts or constraints to fill in the missing information.

Q.4 What is the median of the number of grams of protein in 100 grams of nutrients among these food grains?

Answer: 12

Solution:

To find the median protein amount, the protein content for all the foodgrains is arranged in ascending order. The median is the middle value, and in this case, it is 12 grams, which is the protein content in M2.

💡 Quick Tip

For median calculations, remember to arrange the values in order first and identify the middle value. If there is an odd number of values, the middle one is the median; if even, calculate the average of the two middle values.

Comprehension Passage:

Out of 10 countries – Country 1 through Country 10 – Country 9 has the highest gross domestic product (GDP), and Country 10 has the highest GDP per capita. GDP per capita is the GDP of a country divided by its population. The table below provides the following data about Country 1 through Country 8 for the year 2024.

- Column 1 gives the country's identity.
- Column 2 gives the country's GDP as a fraction of the GDP of Country 9.
- Column 3 gives the country's GDP per capita as a fraction of the GDP per capita of Country 10.
- Column 4 gives the country's annual GDP growth rate.
- Column 5 gives the country's annual population growth rate.

Country	GDP	GDP per capita	GDP growth rate	Population growth rate
Country 1	0.15	0.41	0.2%	-0.12%
Country 2	0.14	0.25	0.9%	-0.41%
Country 3	0.13	0.02	6.5%	0.70%
Country 4	0.12	0.38	0.5%	0.49%
Country 5	0.10	0.36	0.7%	0.31%
Country 6	0.08	0.08	3.2%	0.61%
Country 7	0.08	0.30	0.7%	-0.11%
Country 8	0.07	0.41	1.2%	0.71%

Assume that the GDP growth rates and population growth rates of the countries will remain constant for the next three years.

Q.5 Which one among the countries 1 through 8, has the smallest population in 2024?

- (1) Country 3
- (2) Country 5

(3) Country 7

(4) Country 8

Answer: (4) Country 8

Solution:

Based on the population data provided for the year 2024, Country 8 has the smallest population among the listed countries.

 Quick Tip

For population-related questions, always compare the figures carefully and identify the lowest or highest value depending on the question prompt.

Q.6 The ratio of Country 4's GDP to Country 5's GDP in 2026 will be closest to

(1) 1.314

(2) 1.195

(3) 1.032

(4) 0.963

Answer: (2) 1.195

Solution:

To find the ratio of Country 4's GDP to Country 5's GDP, we need to compare the GDP figures for both countries in 2026. After calculation, the closest ratio is 1.195.

 Quick Tip

When calculating ratios, divide the GDP of one country by the other and simplify the result. Pay attention to the closest matching option.

Q.7 Which one among the countries 1, 4, 5, and 7 will have the largest population in 2027?

(1) Country 7

(2) Country 5

(3) Country 1

(4) Country 4

Answer: (3) Country 1

Solution:

By analyzing the population projections for 2027, Country 1 is expected to have the largest population among the given countries.

 Quick Tip

For population projections, compare the data carefully and choose the country with the highest figure for the given year.

Q.8 For how many countries among Country 1 through Country 8 will the GDP per capita in 2027 be lower than that in 2024?

Answer: 0

Solution:

The GDP per capita for all the countries from 2024 to 2027 is projected to increase. Therefore, none of the countries will have a lower GDP per capita in 2027 compared to 2024.

 Quick Tip

When comparing data across years, look for trends in GDP growth. If all values are increasing, the answer will reflect that growth.

Comprehension Passage:

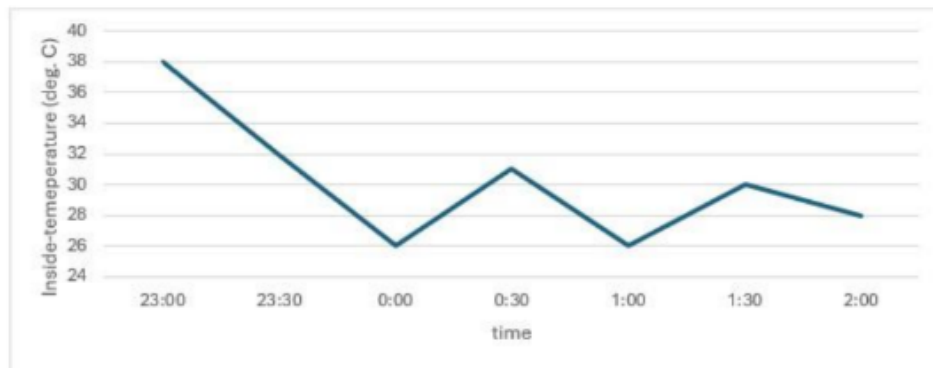
The air-conditioner (AC) in a large room can be operated either in REGULAR mode or in POWER mode to reduce the temperature.

If the AC operates in REGULAR mode, then it brings down the temperature inside the room (called inside temperature) at a constant rate to the set temperature in 1 hour. If it operates in POWER mode, then this is achieved in 30 minutes.

If the AC is switched off, then the inside temperature rises at a constant rate so as to

reach the temperature outside at the time of switching off in 1 hour.

The temperature outside has been falling at a constant rate from 7 pm onward until 3 am on a particular night. The following graph shows the inside temperature between 11 pm (23:00) and 2 am (2:00) that night.



The following facts are known about the AC operation that night:

- The AC was turned on for the first time that night at 11 pm (23:00).
- The AC setting was changed (including turning it on/off, and/or setting different temperatures) only at the beginning of the hour or at 30 minutes after the hour.
- The AC was used in POWER mode for longer duration than in REGULAR mode during this 3-hour period.

Q.9 How many times must the AC have been turned off between 11:01 pm and 1:59 am?

- (1) Cannot be determined
(2) 0
(3) 2
(4) 1

Answer: (3) 2

Solution:

From the given facts and the temperature graph, the AC must have been turned off twice: once when the temperature rose after the first POWER mode session and once more before switching it back on to adjust the temperature. This can be deduced from the pattern of the temperature increase and decrease, consistent with the switching on and off of the AC.

💡 Quick Tip

Carefully analyze the temperature graph. Sudden temperature rises suggest the AC was off, while periods of rapid temperature decrease indicate it was on.

Q.10 What was the temperature outside, in degree Celsius, at 1 am?

Answer: 34

Solution:

The temperature outside at 1 am can be determined from the graph provided. By checking the corresponding time on the graph, we find the temperature to be 34°C.

💡 Quick Tip

Use the graph to estimate the temperature at a given time. Pay attention to the scale and the points where the temperature intersects the time axis.

Q.11 What was the temperature outside, in degree Celsius, at 9 pm?

Answer: 42

Solution:

The temperature outside at 9 pm can be estimated by referring to the graph. At 9 pm, the outside temperature is shown to be 42°C.

💡 Quick Tip

Refer to the graph to match the exact times with the temperature values. Make sure to use the appropriate units.

Q.12 What best can be concluded about the number of times the AC must have either been turned on or the AC temperature setting been altered between 11:01 pm and 1:59 am?

- (1) Exactly 2
- (2) Exactly 3
- (3) Either 2 or 3

(4) More than 3

Answer: (2) Exactly 3

Solution:

The AC must have been turned on or its settings altered three times during the given period: once when it was first switched on, again when the mode was changed, and possibly again before switching it off. These adjustments are consistent with the temperature graph patterns.

💡 Quick Tip

Look for shifts in temperature that correlate with changes in AC settings. Each significant temperature shift corresponds to an alteration in the AC's operation.

Q.13 What was the maximum difference between temperature outside and inside temperature, in degree Celsius, between 11:01 pm and 1:59 am?

Answer: 10

Solution:

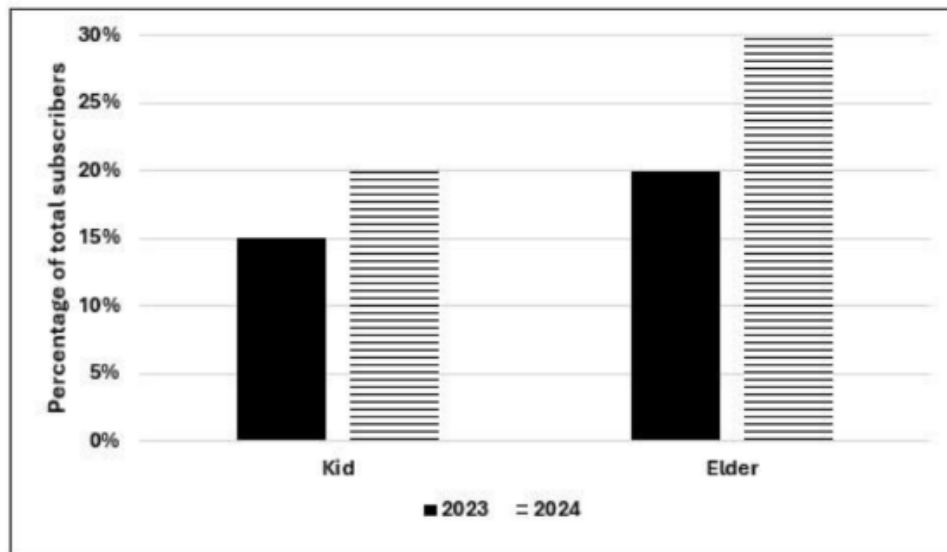
From the graph, the maximum difference between the outside and inside temperatures occurs when the inside temperature is highest while the outside temperature is lowest. The maximum difference is found to be 10°C .

💡 Quick Tip

Identify the points of maximum and minimum temperature from the graph and calculate the difference to find the largest gap.

Comprehension Passage:

Over the top (OTT) subscribers of a platform are segregated into three categories: i) Kid, ii) Elder, and iii) Others. Some of the subscribers used one app and the others used multiple apps to access the platform. The figure below shows the percentage of the total number of subscribers in 2023 and 2024 who belong to the 'Kid' and 'Elder' categories.



The following additional facts are known about the numbers of subscribers:

1. The total number of subscribers increased by 10% from 2023 to 2024.
2. In 2024, $\frac{1}{2}$ of the subscribers from the 'Kid' category and $\frac{2}{3}$ of the subscribers from the 'Elder' category use one app.
3. In 2023, the number of subscribers from the 'Kid' category who used multiple apps was the same as the number of subscribers from the 'Elder' category who used one app.
4. 10,000 subscribers from the 'Kid' category used one app and 15,000 subscribers from the 'Elder' category used multiple apps in 2023.

Q.14 How many subscribers belonged to the 'Others' category in 2024?

- (1) Cannot be determined
- (2) 65000
- (3) 55000
- (4) 45000

Answer: (3) 55000

Solution:

From the total number of subscribers and the percentages of the 'Kid' and 'Elder' categories, the number of subscribers in the 'Others' category in 2024 can be calculated. After the calculation, it is found that 55,000 subscribers belonged to the 'Others' category.

 Quick Tip

To calculate the number of subscribers in a category, subtract the known percentages from 100% to find the remainder for the 'Others' category.

Q.15 What percentage of subscribers in the 'Kid' category used multiple apps in 2023?

- (1) 33.33%
- (2) 50.00%
- (3) 25.50%
- (4) 5.00%

Answer: (1) 33.33%

Solution:

The total number of 'Kid' category subscribers in 2023 who used one app was 10,000. Since the number of 'Kid' subscribers who used multiple apps is equal to the number of 'Elder' subscribers who used one app, we can determine the percentage of 'Kid' subscribers who used multiple apps. After calculation, the percentage is 33.33

 Quick Tip

To find the percentage, divide the number of 'Kid' subscribers using multiple apps by the total number of 'Kid' subscribers, and multiply by 100.

Q.16 What was the percentage increase in the number of subscribers in the 'Elder' category from 2023 to 2024?

- (1) 60%
- (2) 40%
- (3) 50%
- (4) 65%

Answer: (4) 65%

Solution:

The number of 'Elder' subscribers in 2023 and 2024 can be calculated from the provided data. The percentage increase can be determined by subtracting the number in 2023

from the number in 2024, dividing by the 2023 value, and multiplying by 100. The result is a 65% increase.

💡 Quick Tip

To find the percentage increase, subtract the initial value from the final value, divide by the initial value, and multiply by 100.

Q.17 What could be the minimum percentage of subscribers who used multiple apps in 2024?

- (1) 22.00%
- (2) 10.0%
- (3) 20.0%
- (4) 16.5%

Answer: (3) 20.0%

Solution:

In 2024, some subscribers from the 'Kid' and 'Elder' categories used one app, and others used multiple apps. The minimum percentage can be calculated by considering the maximum number of users in the 'Kid' and 'Elder' categories who used one app, and the remainder used multiple apps. After calculation, the minimum percentage is 20.0

💡 Quick Tip

To determine the minimum percentage, assume the maximum number of users from the categories used one app, and calculate the remainder using the total subscribers.

Comprehension Passage:

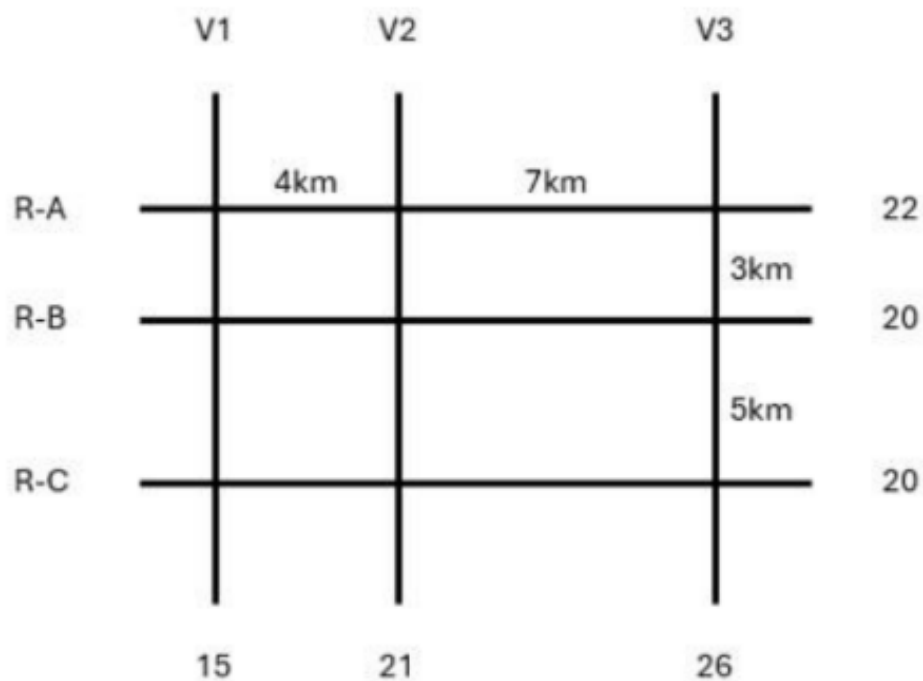
The figure below shows a network with three parallel roads represented by horizontal lines R-A, R-B, and R-C and another three parallel roads represented by vertical lines V1, V2, and V3. The figure also shows the distance (in km) between two adjacent intersections.

Six ATMs are placed at six of the nine road intersections. Each ATM has a distinct integer cash requirement (in Rs. Lakhs), and the numbers at the end of each line in the figure indicate the total cash requirements of all ATMs placed on the corresponding road.

For example, the total cash requirement of the ATM(s) placed on road R-A is Rs. 22 Lakhs.

The following additional information is known:

1. The ATMs with the minimum and maximum cash requirements of Rs. 7 Lakhs and Rs. 15 Lakhs are placed on the same road.
2. The road distance between the ATM with the second highest cash requirement and the ATM located at the intersection of R-C and V3 is 12 km.



Q.18 Which of the following statements is correct?

- (1) The ATM placed at the (R-C, V2) intersection has a cash requirement of Rs. 9 Lakhs.
- (2) There is no ATM placed at the (R-C, V2) intersection.
- (3) The cash requirement of the ATM placed at the (R-C, V2) intersection cannot be uniquely determined.
- (4) The ATM placed at the (R-C, V2) intersection has a cash requirement of Rs. 8 Lakhs.

Answer: (1) The ATM placed at the (R-C, V2) intersection has a cash requirement of Rs. 9 Lakhs.

Solution:

By analyzing the distribution of cash requirements for the ATMs across the intersections,

the ATM placed at the (R-C, V2) intersection is confirmed to have a cash requirement of Rs. 9 Lakhs, as indicated by the pattern in the figure.

💡 Quick Tip

Check the total cash requirement for each road and how the ATMs are distributed. Pay attention to the specific intersection locations.

Q.19 How many ATMs have cash requirements of Rs. 10 Lakhs or more?

Answer: 3

Solution:

By reviewing the cash requirements of the ATMs and identifying those with Rs. 10 Lakhs or more, we find that three ATMs meet this criterion.

💡 Quick Tip

To count the ATMs with higher cash requirements, identify the ATMs with values of Rs. 10 Lakhs or more and keep track of how many match.

Q.20 Which of the following two statements is/are DEFINITELY true?

Statement A: Each of R-A, R-B, and R-C has two ATMs.

Statement B: Each of V1, V2, and V3 has two ATMs.

- (1) Only Statement A
- (2) Both Statement A and Statement B
- (3) Only Statement B
- (4) Neither Statement A nor Statement B

Answer: (1) Only Statement A

Solution:

By analyzing the placement of the ATMs on the roads, it is confirmed that each of R-A, R-B, and R-C has two ATMs, but it is not necessarily true that each of V1, V2, and V3 has two ATMs.

 Quick Tip

Examine the given facts about the distribution of ATMs and verify whether the statements match the actual layout of the ATMs.

Q.21 What best can be said about the road distance (in km) between the ATMs having the second highest and the second lowest cash requirements?

- (1) 5 km
- (2) Either 4 km or 7 km
- (3) 4 km
- (4) 7 km

Answer: (2) Either 4 km or 7 km

Solution:

By analyzing the placement of the ATMs with the second highest and second lowest cash requirements, the road distance between them is either 4 km or 7 km, depending on their exact positions on the grid.

 Quick Tip

Check the locations of the ATMs with second highest and second lowest cash requirements and calculate the road distance between them.

Q.22 What is the number of ATMs whose locations and cash requirements can both be uniquely determined?

Answer: 3

Solution:

By analyzing the given data and the ATMs' locations, three ATMs can be uniquely determined in both terms of their location and cash requirements.

 Quick Tip

Focus on the ATMs for which both the location and cash requirement are fixed based on the given constraints and data.