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Data Interpretation

Data Interpretation (DI) Section

Data Interpretation (DI) - what does it comprise?

Data Interpretation accounted for 50 marks questions in the Common Admissions Tests (CAT) since CAT 2001. CAT 2005 had 30 questions in this section. 10 of the 30 questions were 1 mark questions and the remaining 20 were 2 marks questions.

Data Interpretation section can be broadly classified as comprising two types of questions.

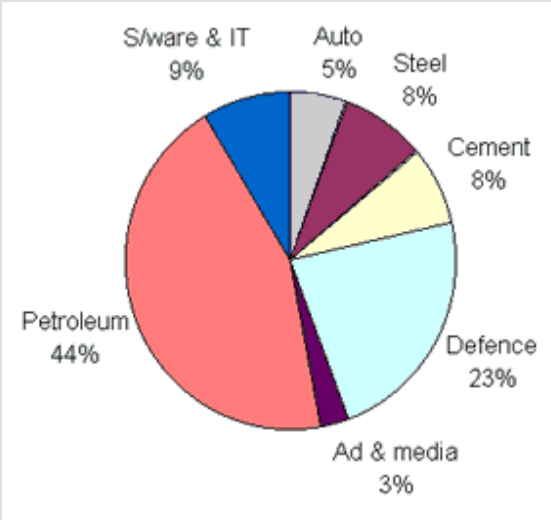
Data Interpretation (DI)

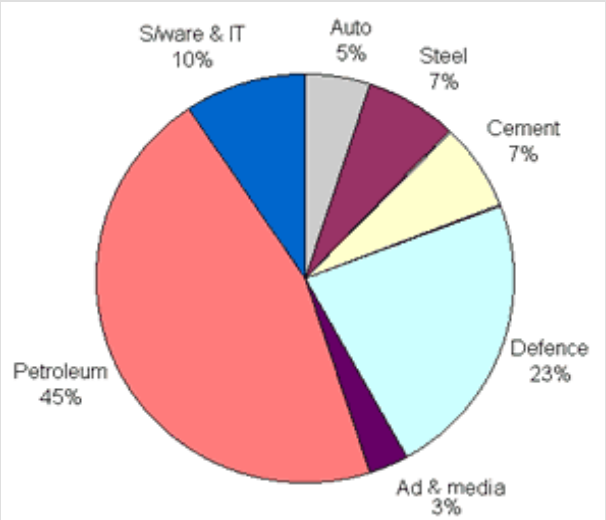
In these questions data is presented either in the form of a table or a bar chart or a pie chart or a line graph or as a combination of one of these formats. Following each of these data presentations, there will be 4 to 6 questions. You are expected to answer the questions by interpreting the data given in the table or graph. Here is a sample data interpretation question.

Sample Test - Data Interpretation - CAT 2007

Use the information provided in the two pie charts provided below. The total contribution to the GDP by the seven sectors mentioned in the pie charts in the year 1999 was Rs.289640 crores and Rs.317000 crores in the year 2000.

Contribution to GDP by Industries in 1999	Contribution to GDP by Industries in 2000





1. Which of the industry sectors witnessed the maximum rate of growth during the period 1999-2000?

(1) Petroleum

(2) Software & IT

(3) Ad & media

(4) Cement

2. Which of the industry sectors witnessed a negative growth during the period 1999-2000?

(1) Auto

(2) Defence

(3) Steel

(4) Petroleum

3. What was the rate of growth witnessed by the Software & IT sector during this period?

(1) 1%

(2) 12%

(3) 33%

(4) 22%

4. What was the rate of growth witnessed by the Petroleum sector during this period?

(1) 1.1%

(2) 12%

(3) 7.5%
(4) -8%

5. What was the rate of growth shown by the non-petroleum sectors between 1999-2000?
(1) -4%
(2) 4%
(3) 7%
(4) 12%

6. Between 1999 and 2000 which other industry witnessed a growth rate similar to that of the defence sector?
(1) Ad & media
(2) Auto
(3) Software & IT
(4) (1) & (2)

7. The amount contributed by Software & IT sector in 1999 was 180% of the amount contributed by
(1) Steel in 1999
(2) Auto in 1999
(3) Ad & media in 2000
(4) Defence in 1999

Answer Key

(1) 2	(5) 3
(2) 3	(6) 1
(3) 4	(7) 2
(4) 2	

Data Sufficiency (DS)

Every Data Sufficiency problem consists of a question followed by two statements. You have to decide NOT WHAT THE ANSWER IS, BUT WHETHER THE QUESTION CAN BE ANSWERED based on the information given in the two statements.

CAT exams till 2004 had DS questions either as part of the quant section or as part of the DI section. CAT 2005 did not have any DS questions at all. However, one cannot rule out such questions in future CAT exams.

Data Sufficiency

WHAT IS DATA SUFFICIENCY?

Every Data Sufficiency problem consists of a question followed by two statements. You have to decide NOT WHAT THE ANSWER IS, BUT WHETHER THE QUESTION CAN BE ANSWERED based on the information given in the two statements. Let us take a very simple example;

What is x?
A. x + y = 17
B. 4x + 4 = 18

As in any other question in CAT, there are four alternative answer choices.

1. if the question can be answered by one of the statements alone, but cannot be answered by using the other statement alone.
2. if the question can be answered by using either statement alone.
3. if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.
4. if the question cannot be answered even by using both statements together.

Here's how to crack it
The best way to answer Data Sufficiency problems is to look at one statement at a time. So cover statement (B) with your hand.

Based on statement A, x + y = 17 can we answer the question "What is x?"

No way. If x + y = 17, there are many possible values of x: If y equals 2, then x could equal 15. On the other hand, if y equals 13, then x could equal 4. Statement A is not sufficient to give us a single value for x.

Now forget you ever saw statement A. Cover it up with your finger and look only at statement B — 4x + 4 = 18. Based on statement B alone, can we find a single value for x?

Yes. Using algebraic manipulation, we can do the following:

4x + 4 = 18
4x = 14
So, x = 3.5

Note that the question isn't asking us what x equals. The question asks only whether the information provided is sufficient to find out what x equals. In this case it is; statement B gives us enough information to answer the question "What is x?" Since B is sufficient and A is not, the answer to this question is:

1. if the question can be answered by one of the statements alone, but cannot be answered by using the other statement alone.

Note

CAT has been using different versions of what the four answer choices stand for. Therefore, it is imperative that you read the instructions given before the Data Sufficiency question in every paper and then answer them. For intance, in CAT 2003 re-test, the choices were different from what are given in the above sample. Many students who did not read the instructions carefully answered these questions wrong despite knowing how to solve them.

How to attempt the DI

Tips:

1. **Don't be afraid of the unfamiliar**. Maybe you have never seen such charts before; do not panic and approach with an open mind.

2. **Practice from a lot of sources**. Look at different graphs and charts and see how data is represented.

3. Note that there are no purely DI or purely Reasoning Questions. All the questions require some amount of Reasoning.

4. Look at different newspapers and also the sites on the Internet where you find graphs and charts. An exposure to different types of charts is essential.

5. In Reasoning, **do some puzzles from varied sources**. Several sites on the Internet post puzzles regularly. Doing these from a variety of sources will help.

6. Do a number of section tests before you start doing full-length tests. Time yourself and stick to the time limits strictly.

7. Rather than doing conventional sums, rely on logic and develop a reasoning mind. In the exam, there is no particular type of question that will be repeated, but most questions can be done by using logic.

8. Do the questions with low weight at the outset. This will give you the confidence to attempt the more difficult questions.

9. **Develop your strategy by appearing in a number of mock tests**. Do not change it at the last moment by listening to friends or others.

10. Finally, **DO NOT panic**. Even if you are scoring well in the mock tests, be prepared for something that you may not have seen before. Learn to keep control even if the paper is formidable; usually it is not.

DI Orientation!!

WHAT DO WE UNDERSTAND BY DATA?

Data refers to facts or numbers, collected for examination, consideration and useful for decision-making. It is in raw form i.e. it is in a scattered form. Information refers to data being arranged and presented in a systematic or an organize form, so that some useful inferences can be drawn from the same. By data we generally mean quantities, figures, statistics, relating to any event.

WHAT DO YOU UNDERSTAND BY DATA INTERPRETATION?

As the name implies, Data Interpretation is extraction of maximum information, as required by us from the given set of data or information. In other words the act of organizing and interpreting data to get meaningful information is known as Data Interpretation. The representation of data can be broadly classified as tables and graph.

TABLES: Any statistical data pertaining to a situation can be represented by tables. Tables are the easiest and most convenient form of data representation if the data is reasonably limited.

(1) Tables present data logically.
(2) Tables give a bird's eye-view of the data in a concise and a compact manner thereby saving time and space.
(3) The columns and the rows that constitute any table facilitate data comparison.
(4) Tables facilitate also analysis and informed decision-making, a la any other data representation type.

DI Strategies!!

Tables, Charts, and Graphs (Data Interpretation)

Graphs and charts show the relationship of numbers and quantities in visual form. By looking at a graph, you can see at a glance the relationship between two or more sets of information. If such information were presented in written form, it would be hard to read and understand.

Here are **some things to remember when doing problems based on data interpretation**:

1. Take your time and read carefully. Understand what you are being asked to do before you begin figuring.

2. Check the dates and types of information required. Be sure that you are looking in the proper columns, and on the proper lines, for the information you need.

3. Check the units required. Be sure that your answer is in thousands, millions, or whatever the question calls for.

4. In computing averages, be sure that you add the figures you need and no others, and that you divide by the correct number of years or other units.

5. Be careful in computing problems asking for percentages.

a. Remember that to convert a decimal into a percent you must multiply it by 100. For example, 0.04 is 4%.
b. Be sure that you can distinguish between such quantities as 1% (1 percent) and .01% (one one-hundredth of 1 percent), whether in numerals or in words.
c. Remember that if quantity X is greater than quantity Y, and the question asks what percent quantity X is of quantity Y, the answer must be greater than 100 percent.

Data Interpretation - Practice Ex.1

Table Chart:-

Examples 1-5 are based on this Table Chart.

The following chart is a record of the performance of a baseball team for the first seven weeks of the season.

Games Won/ Games Lost/ Total No.of Games Played
First Week 5/ 3/ 8
Second Week 4/ 4/ 16
Third Week 5/ 2/ 23
Fourth Week 6/ 3/ 32
Fifth Week 4/ 2/ 38
Sixth Week 3/ 3/ 44
Seventh Week 2/ 4/ 50

Example 1
How many games did the team win during the first seven weeks?

(A) 32
(B) 29
(C) 25
(D) 21
(E) 50

Solution
Choice B is correct. To find the total number of games won, add the number of games won for all the weeks, 5 + 4 + 5 + 6 + 4 + 3 + 2 = 29.

Example 2
What percent of the games did the team win?

(A) 75%
(B) 60%
(C) 58%
(D) 29%
(E) 80%

Solution
Choice C is correct. The team won 29 out of 50 games or 58%.

Example 3
According to the chart, which week was the worst for the team?

(A) Second week
(B) fourth week
(C) fifth week
(D) sixth week
(E) seventh week

Solution
Choice E is correct. The seventh week was the only week that the team lost more games than it won.

Example 4
which week was the best week for the team?

(A) First week
(B) third week
(C) fourth week
(D) fifth week
(E) sixth week

Solution
Choice B is correct. During the third week, the team won 5 games and lost 2, or it won about 70% of the games that week. Compared with the winning percentages for other weeks, the third week's was the highest.

Example 5
If there are fifty more games to play in the season, how many more games must the team win to end up winning 70% of the games?

(A) 39
(B) 35
(C) 41
(D) 34
(E) 32

Solution
Choice C is correct. To win 70% of all the games, the team must win 70 out of 100. Since it won 29 games out of the first 50 games, it must win (70 - 29) or 41 games out of the next 50 games.

Data Interpretation - Practice Ex.2

Six swimmers A, B, C, D, E, F compete in a race. The outcome is as follows.
i. B does not win.
ii. Only two swimmers separate E & D
iii. A is behind D & E
iv. B is ahead of E , with one swimmer intervening
v. F is a head of D

1. Who stood fifth in the race ?
(a) A
(b) B
(c) C
(d) D
(e) E

Ans: (e)

2. How many swimmers seperate A and F ?
(a) 1
(b) 2
(c) 3
(d) 4
(e) cannot be determined

Ans: (d)

3. The swimmer between C & E is
(a) none
(b) F
(c) D
(d) B
(e) A

Ans: (a)

4. If the end of the race, swimmer D is disqualified by the Judges then swimmer B finishes in which place
(a) 1
(b) 2
(c) 3
(d) 4
(e) 5

Ans: (b)
————————————————————
Five houses lettered A,B,C,D, & E are built in a row next to each other. The houses are lined up in the order A,B,C,D, & E. Each of the five houses has a colored chimney. The roof and chimney of each housemust be painted as follows.
i. The roof must be painted either green,red ,or yellow.
ii. The chimney must be painted either white, black, or red.
iii. No house may have the same color chimney as the color of roof.
iv. No house may use any of the same colors that the every next house uses.
v. House E has a green roof.
vi. House B has a red roof and a black chimney

1. Which of the following is true ?
(a) At least two houses have black chimney.
(b) At least two houses have red roofs.
(c) At least two houses have white chimneys
(d) At least two houses have green roofs
(e) At least two houses have yellow roofs

Ans: (c)

2. Which must be false ?
(a) House A has a yellow roof
(b) House A & C have different color chimney
(c) House D has a black chimney
(d) House E has a white chimney
(e) House B&D have the same color roof.

Ans: (b)

3. If house C has a yellow roof. Which must be true.
(a) House E has a white chimney
(b) House E has a black chimney
(c) House E has a red chimney
(d) House D has a red chimney
(e) House C has a black chimney

Ans: (a)

4. Which possible combinations of roof & chimney can house
I. A red roof 7 a black chimney
II. A yellow roof & a red chimney
III. A yellow roof & a black chimney

(a) I only
(b) II only
(c) III only
(d) I & II only
(e) I&II&III

Ans: (e)

Data Interpretation - Practice Ex. 3

After months of talent searching for an administrative assistant to the president of the college the field of applicants has been narrowed down to 5–A, B, C, D, E .It was announced that the finalist would be chosen after a series of all-day group personal interviews were held.The examining committee agreed upon the following procedure

I.The interviews will be held once a week
II.3 candidates will appear at any all-day interview session
III.Each candidate will appear at least once
IV.If it becomes necessary to call applicants for additonal interviews, no more 1 such applicant should be asked to appear the next week
V.Because of a detail in the written applications,it was agreed that whenever candidate B appears, A should also be present.
VI.Because of travel difficulties it was agreed that C will appear for only 1 interview.

1.At the first interview the following candidates appear A,B,D.Which of the follwing combinations can be called for the interview to be held next week.

A.BCD
B.CDE
C.ABE
D.ABC

Ans.B

2.Which of the following is a possible sequence of combinations for interviews in 2 successive weeks

A.ABC;BDE
B.ABD;ABE
C.ADE;ABC
D.BDE;ACD

Ans.C

3.If A ,B and D appear for the interview and D is called for additional interview the following week,which 2 candidates may be asked to appear with D?

I. A
II B
III.C
IV.E

A.I and II
B.I and III only
C.II and III only
D.III and IV only

Ans.D

4.Which of the following correctly state(s) the procedure followed by the search committee

I. After the second interview all applicants have appeared at least once
II.The committee sees each applicant a second time
III.If a third session,it is possible for all applicants to appear at least twice

A.I only
B.II only
C.III only
D.Both I and II

Ans.A
————————————————————–

A certain city is served by subway lines A,B and C and numbers 1 2 and 3
When it snows , morning service on B is delayed
When it rains or snows , service on A, 2 and 3 are delayed both in the morning and afternoon
When temp. falls below 30 degrees farenheit afternoon service is cancelled in either the A line or the 3 line, but not both.
When the temperature rises over 90 degrees farenheit, the afternoon service is cancelled in either the line C or the 3 line but not both.
When the service on the A line is delayed or cancelled, service on the C line which connects the A line, is delayed.
When service on the 3 line is cancelled, service on the B line which connects the 3 line is delayed.

Q1. On Jan 10th, with the temperature at 15 degree farenheit, it snows all day. On how many lines will service be
affected, including both morning and afternoon.

(A) 2
(B) 3
(C) 4
(D) 5

Ans. D

Q2. On Aug 15th with the temperature at 97 degrees farenheit it begins to rain at 1 PM. What is the minimum number
of lines on which service will be affected?

(A) 2
(B) 3
(C) 4
(D) 5

Ans. C

Q3. On which of the following occasions would service be on the greatest number of lines disrupted.

(A) A snowy afternoon with the temperature at 45 degree farenheit
(B) A snowy morning with the temperature at 45 degree farenheit
(C) A rainy afternoon with the temperature at 45 degree farenheit
(D) A rainy afternoon with the temperature at 95 degree farenheit

Ans. B