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DATA 
INTERPRETATION
&
SUFFICIENCY



Haripal Rawat

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By
Haripal Rawat

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**Data Interpretation
&
Data Sufficiency**

Now a days, Data interpretation is an important aspect of every competitive examination. Usually, a table or a graph or a diagram is given with some facts or the required information and candidates are required to answer the questions that follow for the test of their ability of analysing the given information in the form of facts and figures.

Data—Data are the assemblage of facts at any one centered place. Generally, the facts are given in the form of a diagram whether it may be a figure of rows and columns or a form of a graph or a circular form or diagram.

For examples, the facts or the required information may be given in any form as follows—

(A) Study the following information which is a form of a data.

“In an organization consisting of 750 employees, the ratio of males to females is 8 : 7 respectively. All the employees work in five different departments *viz.* HR, Management, PR, IT and Recruitment, 16% of the females work in Management department, 32% of males are in HR department. One fifth of the females are in the department of recruitment. The ratio of males to females in the management department is 3 : 2 respectively, 20% of the total numbers of employees are in PR department; Females working in recruitment are 50% of the males working in the same department 8% of the males are in IT department. The remaining males are in PR department, 22% of the females work in HR department and the remaining females are working in IT department.”

On the above information, any question or questions may be asked, *e.g.*—

What is the total number of females working in the IT and recruitment department together ?

- (A) 147 (B) 83
(C) 126 (D) 45
(E) None of these

Data based on the facts or the information as above, will be discussed in detail in the chapter 6 : caselet.

(B) In the form of ‘rows and columns’ which is a tubular form of a data, *e.g.*—

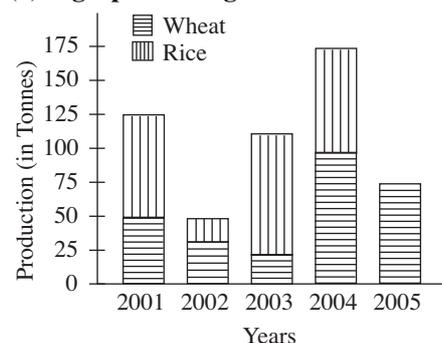
Number of Girls in Four Streams of a College Over the Years

Years	Streams			
	Arts	Science	IT	Commerce
2005	250	150	50	60
2006	300	125	55	70
2007	280	170	40	55
2008	350	120	35	50
2009	300	180	60	70

Questions based on the tabular form of data will be discussed in detail in the chapter 2 : Table.

(C) Any other form of a graphical or non graphical diagram, *e.g.*—

(1) A graphical diagram of a data—



On the above information, questions may be followed as—

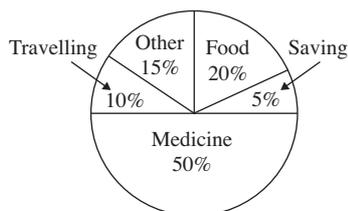
(a) In which year, the production of rice is low ?

- (A) 2002 (B) 2001
(C) 2005 (D) 2003
(E) 2004

(b) What is the average production of wheat all over the years ?

- (A) 25 tonnes (B) 50 tonnes
 (C) 40 tonnes (D) 62 tonnes
 (E) None of these

(2) **Pie diagram of a data—**



Monthly income = Rs. 20,000

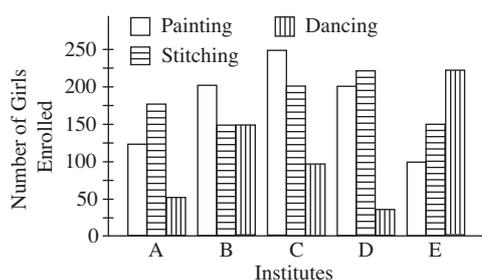
The above diagram shows the expenditure of the monthly income of a man—Different kinds of data and their relevant questions will be discussed in detail in their corresponding chapters. Now, we are discussing what *Data Interpretation* is ?

Data Interpretation—By the word ‘Data-Interpretation’ we mean understanding, organising and drawing appropriate conclusions from the given Data.

Actually, Data Interpretation is an act of extracting useful information and conclusions from the given data.

For example, Here we have a data in the form of following diagram.

Number of Girls Enrolled in Different Hobby Classes in Various Institutes in a Year—



By this diagram, we can find the important information or the conclusions easily, such as—

- (i) The total number of girls in all the institutes.
- (ii) The number of girls in the painting or the stitching or the dancing in all the institutes.
- (iii) The respective ratio of total number of girls enrolled in painting, stitching and dancing from all the institutes together.
- (iv) Number of girls enrolled in stitching in institute B forms what per cent of the total number of girls enrolled in stitching in all the institutes together.
- (v) The other relevant conclusions that can be found from the diagram.

The act of finding important conclusions or the information from the above diagram is An Example of Data-interpretation.

Classification of Data—Generally, Data can be classified as—

- (i) Tables
- (ii) Graphs
- (iii) Pie charts
- (iv) Combination of diagrams
- (v) Venn Diagram
- (vi) Number Diagram
- (vii) Caselets
- (viii) Network Diagram
- (ix) Scatter Diagram

Points to Remember

- For finding appropriate information or the conclusions from the given data, first of all we must have a cursory glance over the given data or the information figure and digest quickly what the diagram or the data represents.
- Take special care of units and points indicated in the graphical diagram.
- Read the questions that follow the data or the diagram carefully and answer accordingly.
- Many questions will be there which can be solved just by looking at the diagram or the data.
- Use mathematical means or the formulas, if necessary to collect the appropriate conclusions.



Table—A table is the easier form used to summarise data in a meaningful way, it presents the data systematically in the form of rows and columns.

In the tabular form of the data, information or the facts are arranged in alphabetical or the chronological order.

Points to Remember

- Study the title of the table carefully that gives you a description of the contents of the table, kinds of data and the period for which it occurred.
- A dash or the blank indicates that corresponding data is not available.
- If you are arranging data in the form of a table, remember that the zero is always indicated by 0. A dash or the blank should never be indicated as zero.

Exercise on the Tabular Form of the Data

Exercise 1

Directions—Study the following table carefully and answer the questions given below it—

Crimes Registered in 2009 in the Various States

(Incidence and Rate per 100000 Population)

Crimes/States		UP	MP	Delhi	Bihar
Dacoity	Incidence	8800	2650	500	7800
	Rate	6.2	4.0	4	5.6
Murder	Incidence	9200	892	480	8200
	Rate	7.0	2.0	4.5	6.2
Rape	Incidence	7800	582	138	2850
	Rate	6.2	3.2	0.4	2.8

1. What is the average rate per hundred population of murder for all the given states ?
(A) 0.00492 (B) 4.92

- (C) 0.492 (D) 49.2
(E) None of these

2. What is the difference between the number of murder for UP and the murder of rape for Delhi ?

- (A) 1562 (B) 9262
(C) 9062 (D) 962
(E) None of these

3. What is the maximum number of the incidence of crimes per lac population for a which state ?

- (A) 24700 (B) 25800
(C) 27500 (D) 26800
(E) None of these

4. What is the percentage difference of incidence of dacoity in UP as compared with Bihar ?

- (A) 13% (B) 11%
(C) 14% (D) 15%
(E) None of these

5. Which state has the minimum rate of incidence for the crime of rape ?

- (A) MP (B) UP
(C) Bihar (D) Delhi
(E) None of these

Answers with Explanation

1. (A) Required average

$$= \frac{7.0 + 2.0 + 4.5 + 6.2}{4}$$

$$= \frac{19.7}{4}$$

$$= 4.92 \text{ per lac population}$$

$$\therefore \text{Per hundred population}$$

$$= \frac{4.92}{100000} \times 100$$

$$= 0.00492$$

2. (C) The required difference
 $= 9200 - 138 = 9062$

3. (B) Number of the incidence of crimes in UP
 $= 8800 + 9200 + 7800$
 $= 25800$

Number of the incidence of crimes in MP
 $= 2650 + 892 + 582$
 $= 4124$

Number of the incidence of crimes in Delhi
 $= 500 + 480 + 138$
 $= 1118$

Number of the incidence of crimes in Bihar
 $= 7800 + 8200 + 2850$
 $= 18850$

\therefore Clearly the maximum number of incidence of the crimes has occurred in UP, *i.e.*, 25800.

4. (A) The required % difference
 $= \left(\frac{8800 - 7800}{7800} \right) \times 100$

$= 13\%$ Approx.

5. (D) Dehli, *i.e.*, 0.4

Exercise 2

Directions—Study the following table carefully and answer the questions that follow—

The Aggregate 1003 Runs in the Tests Made by Sachin Tendulkar in the Year 2001

Opposition	Tests	Inning	Runs	Highest Score	Average	100s	50s
Australia	3	6	304	126	50.67	1	2
Zimbabwe	2	4	199	74	66.33	0	2
South Africa	2	4	193	155	64.33	1	0
England	3	4	307	103	76.75	1	2
Total	10	18	1003	155	62.60	3	6

Note—The average is calculated on as many innings in which the batsman loses his wicket.

1. What is the approximate ratio of the average runs of Australia to the average runs of Zimbabwe made by Sachin Tendulkar ?

- (A) 15 : 22 (B) 12 : 15
 (C) 17 : 22 (D) 22 : 17
 (E) None of these

2. How many percentage are the runs of England with the comparison to the total aggregate runs ?

- (A) 30% (B) 35%
 (C) 40% (D) 25%
 (E) None of these

3. For which apposition did Sachin Tendulkar had the minimum average of runs ?

- (A) Australia
 (B) Zimbabwe
 (C) South Africa
 (D) England
 (E) None of these

4. The approximate ratio of runs made by Sachin Tendulkar between England and South Africa is—

- (A) 15 : 7 (B) 11 : 7
 (C) 7 : 11 (D) 7 : 15
 (E) None of these

Answers with Explanation

1. (C) $\frac{A}{Z} = \frac{50.67}{66.33} = \frac{17}{22}$
 $\Rightarrow A : Z = 17 : 22$ (Approx.)

2. (A) The required percentage
 $= \frac{307 \times 100}{1003}$
 $= 30\%$ (Approx.)

3. (A) 30% Australia

4. (B) The required ratio
 $= \frac{\text{England}}{\text{S. Africa}}$
 $= \frac{307}{193} \Rightarrow \frac{4}{7}$
 $\Rightarrow 11 : 7$ (Approx.)

Exercise 3

Directions—Study the following table carefully and answer the questions given below—

Number of Bales of Wool Processed by 5 Woolen Mills

Month	Name of the Mill				
	Polar	Shepherd	Kiwi	Warmwear	Comfy
January	900	850	350	1000	850
February	800	700	1050	1100	850
March	1050	800	1000	1100	950
April	800	850	850	1100	850
May	950	900	1050	1150	850
Total	4500	4100	4900	5450	4350

- Which mill has the processing of wool in March the highest percentage of the total processing by that mill during the five months period ?
 (A) Polar (B) Shepherd
 (C) Kiwi (D) Warmwear
 (E) Comfy
- The wool processing by Warmwear in April is what per cent of its wool processing in the month of January ?
 (A) 91 (B) 110
 (C) 115 (D) 10
 (E) 11
- Which of the five mills has the highest ratio of wool processing done in April to that done in February ?
 (A) Polar (B) Shepherd
 (C) Kiwi (D) Warmwear
 (E) Comfy
- In the case of which mill is the wool processing in February and March together the lowest among the five mills processing during the same period ?
 (A) Comfy (B) Warmwear
 (C) Kiwi (D) Shepherd
 (E) Polar
- The total of wool processing done by Kiwi during the given period is approximately what per cent of that done by Shepherd ?
 (A) 80 (B) 87
 (C) 8 (D) 108
 (E) 120

Answers with Explanation

- (A) Percentage processing of wool in the month of March by different mills—

$$\text{Polar} = \frac{1050 \times 100}{4500}$$

$$= 23.33\%$$

$$\text{Shepherd} = \frac{800 \times 100}{4100}$$

$$= 19.51\%$$

$$\text{Kiwi} = \frac{1000 \times 100}{4900}$$

$$= 20.40\%$$

$$\text{Warmwear} = \frac{1100 \times 100}{5450}$$

$$= 20.18\%$$

$$\text{Comfy} = \frac{950 \times 100}{4350}$$

$$= 21.83\%$$

∴ The highest percentage is of the mill Polar.

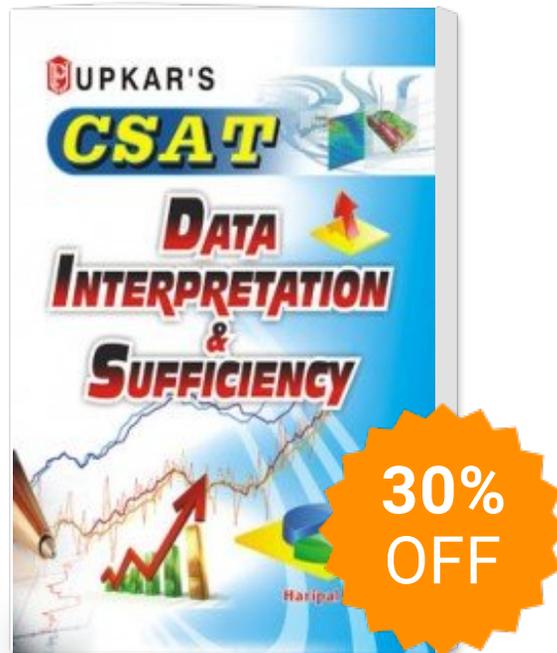
- (B) The required %

$$= \frac{1100 \times 100}{1000} = 110\%$$
- (B) Seeing the table, we find that only Shepherd shows less processing in February in comparison to the month of April. So, it gives the maximum ratio.
- (D) Shepherd shows the lowest processing in the month of February and March.
- (E) The required %

$$= \frac{4900 \times 100}{4100}$$

$$= 120\% \text{ (Approx.)}$$

CSAT Data Interpretation and Sufficiency



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