APTITUDE NOTES – SECTION 3: DATA INTERPRETATION (INTERMEDIATE LEVEL)

1️⃣ Introduction to Data Interpretation

Key Concepts:

- **Data Interpretation (DI)** involves analyzing data presented in various forms — tables, graphs, charts, etc.
- Focus areas:
  - Data comparison
  - Data analysis
  - Percentage & ratio calculations
  - Trend recognition

Formula Recap:

- **Percentage Change:**

  Change %=(New−Old)Old×100\text{Change \%} = \frac{(New - Old)}{Old} \times 100Change %=Old(New−Old)×100

- **Average:**

  Average=Sum of valuesNumber of values\text{Average} = \frac{\text{Sum of values}}{\text{Number of values}}Average=Number of valuesSum of values

- **Ratio:**

  Ratio=Quantity 1Quantity 2\text{Ratio} = \frac{\text{Quantity 1}}{\text{Quantity 2}}Ratio=Quantity 2Quantity 1

Tip:

Always read **units** carefully (e.g., ₹ in thousands, population in lakhs).

2️⃣ Table-Based Data Interpretation

Key Concepts:

- Data is given in tabular form (rows and columns).
- You must compare, sum, find ratios, or percentage changes.

Example:

Year	Product A	Product B
2021	120	100
2022	150	130

Q: % increase of Product A from 2021 to 2022
→ ((150 – 120) / 120) × 100 = 25%.

Tips:

- Prefer column-wise reading.
- Mark reference points while calculating.

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3 Bar Graphs

Key Concepts:

- Bar graphs represent **data with rectangular bars** proportional to value.
- Useful for **comparison** between different entities.

Example:

Bar chart shows sales of A and B over years.
If A(2022)=200, A(2023)=240 → % change = 20%.

Tips:

- Always check **scale** on axis.
- Questions often ask “difference,” “ratio,” or “growth.”

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4 Pie Charts

Key Concepts:

- Circle divided into sectors representing proportions.
- **Total = 360°** → each degree corresponds to a fraction of total.
- **Sector Value:**

  Value=Sector Angle360×Total\text{Value} = \frac{\text{Sector Angle}}{360} \times \text{Total}Value=360Sector Angle×Total

Example:

If company’s profit ₹9,00,000 and Marketing = 80° sector,
→ (80/360)×900000 = ₹2,00,000.

Tips:

- Combine sectors for “group” questions.
- Convert ° to %: (θ/360)×100.

5️⃣ Line Graphs

Key Concepts:

- Show data **trends over time**.
- Each line represents a variable → easy to observe increase/decrease.

Example:

Sales of two products over years; intersection means equal value.

Tips:

- Analyze **slopes** — upward = increase, downward = decrease.
- Compare lines point by point, not by length.

6️⃣ Caselets (Paragraph-Based Data)

Key Concepts:

- Data is presented as **text or paragraph** (no charts/tables).
- Extract information, convert into structured form.

Example:

"A company has 120 employees: 40% in sales, 30% in production, rest in HR."
→ Sales = 48, Production = 36, HR = 36.

Tips:

- Underline quantities while reading.
- Build a quick table to visualize.

7️⃣ Mixed Graphs

Key Concepts:

- Combine multiple types (e.g., bar + line, table + pie).

- Need multi-step interpretation and ratio/percentage logic.

Example:

Bar shows revenue, line shows profit % → Profit = (Revenue × Profit%) / 100.

Tips:

- Identify what each axis and legend represents.
- Units and scales may differ — standardize them first.

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8 Missing Data Interpretation

Key Concepts:

- Some values are missing; you infer them using given relations.
- Requires formula substitution and ratio knowledge.

Example:

If Average = Total/No. of terms and one value missing,
you can find the missing number using average and total.

Tips:

- Always form equations from given clues.
- Plug values systematically; avoid assumptions.

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9 Percentage & Ratio-Based DI

Key Concepts:

- Many DI questions combine basic arithmetic.
- Learn to use direct fraction-to-percent conversions:
    - 1/2 = 50%
    - 1/3 = 33.33%
    - 1/4 = 25%
    - 1/5 = 20%

Example:

If ratio of A:B = 2:3, total = 500 →
A = (2/5)×500=200, B=300.

Tips:

- Convert % → ratio or vice versa quickly.
- Simplify before multiplying large numbers.

🔟 Data Comparison & Trend Analysis

Key Concepts:

- Often ask for **greatest increase, least decrease**, or **growth trend**.
- Compute differences or growth rates for all and compare.

Example:

Yearly sales (₹lakh): 50, 60, 75, 70 → Highest growth between 60→75 (25%).

Tips:

- Focus on **relative change**, not absolute.
- Graphical questions often test visual accuracy.