NCERT Class 12 Accountancy Notes

Part 2 Chapter 5, Accounting Ratios (2026–27 / New NCERT)

12th Accountancy: Company Accounts and Analysis of Financial Statements

Part 2 Chapter 5: Accounting Ratios

Liquidity | Solvency | Activity | Profitability

Also see for this chapter: NCERT Solutions | Formula Sheet

What this chapter is about

A company's financial statements (Statement of Profit and Loss and Balance Sheet) contain raw figures, revenue, expenses, assets, liabilities. An **accounting ratio** is the mathematical relationship between two such figures, expressed as a fraction, percentage, proportion, or number of times. Ratios convert raw figures into comparable indicators of **liquidity** (can the firm pay short-term dues?), **solvency** (can it pay long-term dues?), **efficiency** (how well are assets used?), and **profitability** (how much does it earn relative to its size?). This chapter sets out the formula, computation, and managerial significance of each ratio used in board-level analysis.

Contents

1 Meaning, Objectives and Advantages

A ratio is a mathematical number expressing the relationship of one figure to another. When both figures come from financial statements, the result is an **accounting ratio**. Ratios are derived numbers, so their reliability depends on the figures from which they are computed; if the statements are wrong, the ratios will be misleading.

1.1 Meaning of Accounting Ratios

An accounting ratio is the relationship, expressed numerically, between two accounting figures drawn from financial statements. The two figures must be *meaningfully correlated*, a ratio of purchases to office furniture, for example, would compute fine but tell us nothing.

For instance, if gross profit is Rs. 10,000 on revenue from operations of Rs. 1,00,000, the gross profit ratio is $10{,}000/1{,}00{,}000 \times 100 = 10\%$. If average inventory turns over six times in a year, the inventory turnover ratio is 6 times.

Four ways to express a ratio

- **Pure number / times.** Inventory Turnover = 6 times.
- **Percentage.** Gross Profit Ratio = 10%.
- **Proportion.** Current Ratio = 2 : 1.
- **Fraction.** Debt-Equity Ratio = $\frac{1}{2}$.

1.2 Objectives of Ratio Analysis

Ratio analysis is an indispensable part of interpreting financial statements. It tells the analyst:

1. the areas of the business that need management attention;

2. the potential areas where targeted effort can drive improvement;
3. the depth of profitability, liquidity, solvency, and efficiency;
4. the relative position against industry benchmarks (*cross-sectional* analysis);
5. the basis for projections and forecasts of future performance.

1.3 Advantages of Ratio Analysis

When applied carefully, ratios offer six concrete advantages:

- **Tests efficacy of decisions.** A change in inventory turnover or net profit ratio shows whether last year's management decisions produced the intended result.
- **Simplifies financial statements.** A board reader does not need to wade through every line of the statements; ratios summarise the picture.
- **Enables comparison.** *Intra-firm* (the same firm across years) and *inter-firm* (the firm against industry peers) comparison is possible only after standardising the figures into ratios.
- **Identifies problem areas.** A falling current ratio or rising debt-equity ratio shows trouble before it appears in the bottom line.
- **Enables SWOT analysis.** Ratios are the quantitative input to the strengths–weaknesses–opportunities–threats set of rules.
- **Helps forecasting.** Trends in past ratios feed budgets, working-capital plans, and credit decisions.

Real-World Application

Banks rely on accounting ratios at every credit decision. Before sanctioning a working-capital limit, a lender will look at the borrower's current ratio, quick ratio, interest coverage ratio, and debt-equity ratio against industry benchmarks, and may price the loan up by 100–200 basis points if any of these is materially weaker than peers.

Quick Tip

Always state the *units* alongside the answer: liquidity and solvency ratios as a proportion ("$1.29 : 1$"), turnover as "times", and profitability as a percentage. CBSE markers deduct half a mark when the unit is missing, even if the arithmetic is correct.

1.4 Limitations of Ratio Analysis

NCERT lists six limitations to keep in mind:

1. **Limitations of accounting data.** Ratios are no better than the figures behind them; if the statements use historical cost or omit non-monetary factors, the ratios inherit that weakness.

2. **Ignores price-level changes.** A 50% rise in revenue at 8% annual inflation is not as strong as it looks, real growth is much less.
3. **Ignores qualitative factors.** Brand strength, employee morale, management quality, none appear in ratios.
4. **Lack of standard definition.** "Profit", "capital employed", "operating expense" are defined differently across firms, so cross-firm comparison is imperfect.
5. **Lack of universally accepted standard levels.** A current ratio of 2:1 is the textbook ideal, but the right level varies sharply across industries.
6. **Ratios based on unrelated figures hardly indicate anything.** A ratio of purchases to furniture, or revenue to land, has no economic meaning.

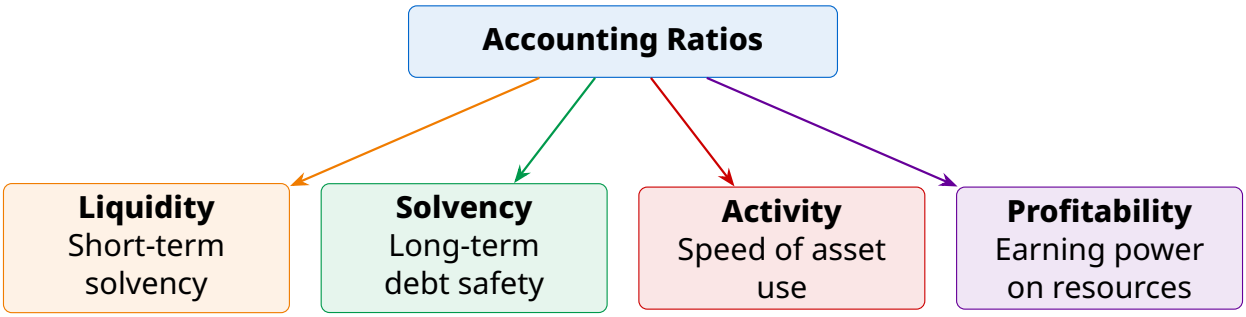
Common Mistake

Students sometimes treat "window dressing" as a separate limitation. NCERT folds it within "limitations of accounting data" (managers can manipulate year-end figures to dress the ratios). Mention it as an example, not a separate bullet.

2 Types of Ratios

NCERT classifies ratios into **four families**, organised by the question each one answers.

2.1 The Four Families

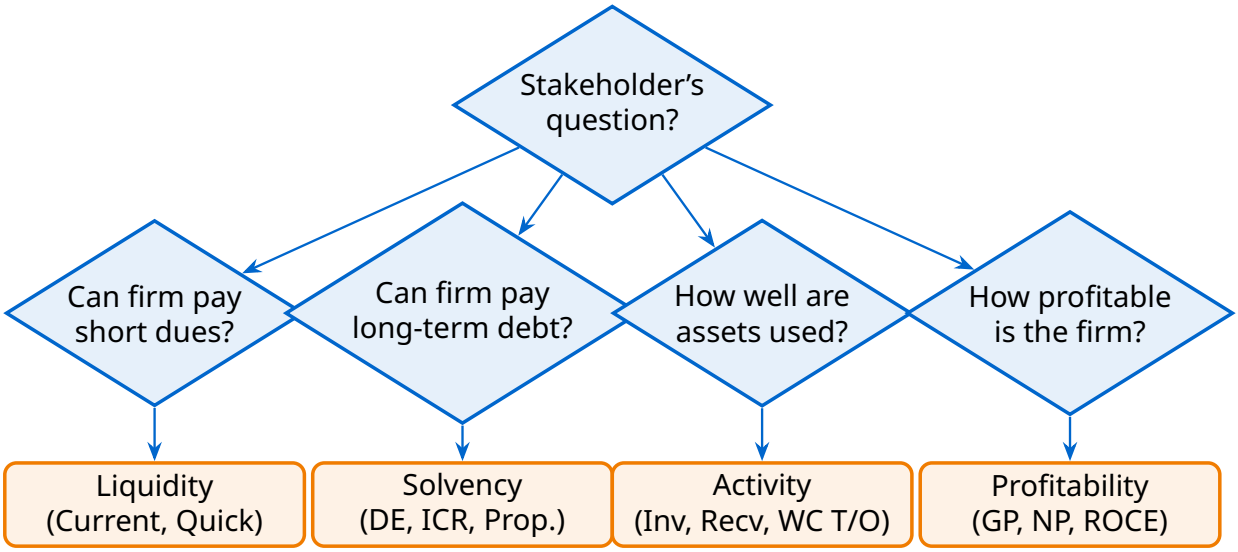


Each family answers a different stakeholder question:

- **Liquidity**, can the firm pay its bills due within 12 months? Relevant to short-term creditors and the bank overdraft desk.
- **Solvency**, can it service its long-term debt and survive a downturn? Relevant to debenture-holders and term lenders.
- **Activity**, how efficiently does it convert inventory, receivables, and fixed assets into revenue? Relevant to operating management.
- **Profitability**, how much does it earn for each rupee of revenue, equity, or capital employed? Relevant to shareholders and investors.

Memory Aid

LSAP, Liquid Salesman Asks Profit. L–S–A–P is the order in which NCERT presents the families: **L**iquidity, **S**olvency, **A**ctivity, **P**rofitability. Learn the order once and the chapter unfolds in sequence.



Decision tree: identify the stakeholder question first, then pick the family of ratios that answers it. The right ratio for a creditor is rarely the right ratio for an equity analyst.

2.2 What Each Family Contains (Map)

Family	Ratios inside
Liquidity	Current Ratio; Quick (Liquid) Ratio.
Solvency	Debt-Equity Ratio; Debt to Capital Employed Ratio; Proprietary Ratio; Total Assets to Debt Ratio; Interest Coverage Ratio.
Activity	Inventory Turnover; Trade Receivables Turnover; Trade Payables Turnover; Net Assets / Capital Employed Turnover; Fixed Assets Turnover; Working Capital Turnover.
Profitability	Gross Profit Ratio; Operating Ratio; Operating Profit Ratio; Net Profit Ratio; Return on Investment (ROI / ROCE); Return on Shareholders' Funds (RONW); Earnings per Share (EPS); Book Value per Share; Dividend Payout Ratio; Price-Earnings (P/E) Ratio.

3 Liquidity Ratios

Liquidity ratios measure the firm's **short-term solvency**, its ability to meet obligations falling due within twelve months. They compare current assets (or quick assets) with current liabilities, both lifted straight from the balance sheet.

3.1 Current Ratio

Current Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

expressed as a proportion (e.g. $2:1$).

Current Assets include:

- current investments,
- inventories,
- trade receivables (debtors and bills receivable),
- cash and cash equivalents,
- short-term loans and advances,
- and other current assets such as prepaid expenses, advance tax, and accrued income.

Current Liabilities include: short-term borrowings, trade payables (creditors and bills payable), other current liabilities, and short-term provisions.

Significance. The current ratio measures the margin of safety available to short-term creditors. The textbook benchmark is $2:1$, but the right level varies by industry. A *very high* ratio is also undesirable, it suggests idle cash, slow-moving inventory, or under-used resources. A *low* ratio risks default.

Solved illustration (NCERT Illustration 1). Compute the current ratio from:

Particulars	Rs.
Inventories	50,000
Trade receivables	50,000
Advance tax	4,000
Cash and cash equivalents	30,000
Trade payables	1,00,000
Short-term borrowings (bank overdraft)	4,000

Solution.

$$\begin{aligned}\text{Current Assets} &= 50{,}000 + 50{,}000 + 4{,}000 + 30{,}000 = 1{,}34{,}000\\ \text{Current Liabilities} &= 1{,}00{,}000 + 4{,}000 = 1{,}04{,}000\\ \text{Current Ratio} &= \frac{1{,}34{,}000}{1{,}04{,}000} = 1.29:1\end{aligned}$$

Interpretation. Current assets cover current liabilities by 1.29 times, below the $2:1$ benchmark, so the firm has a thinner safety margin than the textbook ideal.

Quick Tip

For an MCQ asking "does a transaction improve or worsen the current ratio?", apply the rule: if the ratio is already above 1, anything that adds the *same* amount to both numerator and denominator **worsens** it; anything subtracting the same amount from both **improves** it. The opposite holds if the ratio is below 1.

3.2 Quick (Liquid) Ratio

Quick or Liquid Ratio

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

where Quick Assets = Current Assets − Inventories − Prepaid Expenses − Advance Tax.

Quick assets are those convertible into cash quickly. The exclusion of inventory (which can take months to sell) and prepaid expenses (which never become cash) gives a tighter test of short-term liquidity. The ratio is also called the **Acid-Test Ratio**.

Significance. The benchmark is $1:1$. A quick ratio of 1 means the firm can extinguish its current liabilities from cash and near-cash items alone, without selling any inventory.

Solved illustration (NCERT Illustration 2). Using the data from Illustration 1:

$$\begin{aligned}\text{Quick Assets} &= 1{,}34{,}000 - (50{,}000 + 4{,}000) = 80{,}000\\ \text{Current Liabilities} &= 1{,}04{,}000\\ \text{Quick Ratio} &= \frac{80{,}000}{1{,}04{,}000} = 0.77:1\end{aligned}$$

Interpretation. Below the $1:1$ benchmark, the firm cannot fully cover current liabilities from quick assets alone and would have to liquidate inventory to settle short-term dues in a stress event.

Common Mistake

Do not deduct advance tax and prepaid expenses twice. Some students subtract them once while computing quick assets, then again from current liabilities. Quick assets are a *numerator* adjustment only; current liabilities remain unchanged.

Real-World Application

RBI's prudential norms on banks (the LCR or Liquidity Coverage Ratio) are direct

descendants of the textbook Current Ratio. Banks must hold high-quality liquid assets equal to at least 100% of expected 30-day outflows. The mechanics differ but the philosophy is identical: "Can the firm pay its short-term dues from quick-to-cash holdings?"

Quick Tip

When asked "effect of transaction on the current ratio": if the starting ratio is above 1, adding the same number to numerator and denominator pulls the ratio *down* towards 1; subtracting the same number from both pulls the ratio *up*. The opposite holds when the starting ratio is below 1.

Current Ratio

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

CA = Inv. + Recv. + Cash + Adv. Tax + Prepaid + STA

Ideal $= 2:1$
Below 1.5 risky

Quick (Acid-Test) Ratio

$$\frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

Quick = CA **minus** Inv. | Prepaid | Advance Tax

Ideal $= 1:1$
Below 0.7 risky

Liquidity ratios at a glance: numerator definitions, formulas and ideal benchmarks. The Quick Ratio is the stricter test because it strips out the slow-converting inventory and the non-cash prepaid items.

3.3 Effect of Transactions on the Current Ratio

Board questions frequently ask: "How does this transaction affect the current ratio?" Take a starting ratio of $2:1$ with Current Assets Rs. 50,000 and Current Liabilities Rs. 25,000, and trace each entry:

Transaction	New CA (Rs.)	New CL (Rs.)	Effect
Payment of Rs. 10,000 to creditors	40,000	15,000	Improves
Goods purchased on credit Rs. 10,000	60,000	35,000	Reduces
Sale of computer (book Rs. 4,000) for Rs. 3,000	53,000	25,000	Improves
Sale of goods costing Rs. 10,000 for Rs. 11,000	51,000	25,000	Improves
Payment of unclaimed dividend Rs. 5,000	45,000	20,000	Improves

3.4 Difference Between Current Ratio and Quick Ratio

Basis	Current Ratio	Quick Ratio
Numerator	All current assets	Excludes inventory & prepaid expenses
Benchmark	2:1	1:1
Stringency	Broad measure	Stricter (acid-test)
Best for	Overall short-term position	Cash crunch scenarios

4 Solvency Ratios

Solvency ratios assess the firm's ability to meet **long-term obligations**, interest and principal on debentures, term loans, and other long-term borrowings. Lenders care about these.

4.1 Debt-Equity Ratio

Debt-Equity Ratio

$$\text{Debt-Equity Ratio} = \frac{\text{Long-term Debts}}{\text{Shareholders' Funds}}$$

where Shareholders' Funds = Share Capital + Reserves and Surplus + Money received against share warrants + Share application money pending allotment. *Alternative computation:* Shareholders' Funds = Non-current Assets + Working Capital − Long-term Debts.

Significance. The ratio measures the relative share of outside (long-term) finance to owner's finance. The textbook benchmark is $2:1$, but the safe level varies by industry, capital-intensive sectors tolerate higher debt, while services tolerate less. From the lender's perspective, lower is safer.

4.2 Debt to Capital Employed Ratio

Debt to Capital Employed Ratio

$$\text{Debt to Capital Employed Ratio} = \frac{\text{Long-term Debts}}{\text{Capital Employed}}$$

where Capital Employed = Shareholders' Funds + Long-term Debts (= total long-term funds in the business, also called Net Assets).

Significance. Expressed as a fraction or percentage, this ratio tells what proportion of long-term capital is supplied by outsiders. If Debt-to-Capital-Employed $= 0.25$, then 25% of long-term funds are debt and 75% are equity. The two figures together always sum to 1 (or 100%).

4.3 Proprietary Ratio

Proprietary Ratio

$$\text{Proprietary Ratio} = \frac{\text{Shareholders' Funds}}{\text{Capital Employed}}$$

or, alternatively, Shareholders' Funds $\div$ Total Assets.

Significance. The mirror image of the Debt to Capital Employed ratio: $0.75 : 1$ means 75% of long-term funds (or total assets) are owned by shareholders. A higher proprietary ratio means lower financial risk.

The three solvency ratios are linked

Debt to Capital Employed $+$ Proprietary Ratio $= 1$.
If one is $0.25 : 1$, the other is $0.75 : 1$, and the debt-equity ratio is $0.25/0.75 = 1 : 3$. Cross-checking the three numbers in an exam answer is the quickest way to verify your working.

4.4 Total Assets to Debt Ratio

Total Assets to Debt Ratio

$$\text{Total Assets to Debt Ratio} = \frac{\text{Total Assets}}{\text{Long-term Debts}}$$

Significance. This ratio measures the cover available to long-term lenders. If the ratio is 4, total assets are four times long-term debt, the firm could lose 75% of its asset value and still cover its long-term debt holders.

Total Assets include all non-current assets (tangible and intangible) and all current assets.

4.5 Interest Coverage Ratio

Interest Coverage Ratio

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax (PBIT)}}{\text{Interest on Long-term Debt}}$$

expressed as a number of *times*.

Significance. It indicates how many times the firm's PBIT covers its long-term interest obligation. A ratio of 4 means the firm could pay its interest four times over from operating profit alone, a strong cushion. A ratio close to 1 means even a small profit dip would lead to interest default.

Solved illustration (NCERT Illustration 11). Net profit after tax Rs. 60,000; 15%

long-term debt Rs. 10,00,000; tax rate 40%.

Solution.

$$\text{Net Profit before tax} = \frac{\text{PAT} \times 100}{100 - \text{Tax Rate}} = \frac{60{,}000 \times 100}{60} = 1{,}00{,}000$$
$$\text{Interest on LT Debt} = 15\% \times 10{,}00{,}000 = 1{,}50{,}000$$
$$\text{PBIT} = 1{,}00{,}000 + 1{,}50{,}000 = 2{,}50{,}000$$
$$\text{Interest Coverage Ratio} = \frac{2{,}50{,}000}{1{,}50{,}000} = 1.67 \text{ times}$$

Interpretation. PBIT covers interest only 1.67 times, a thin cushion. A small dip in operating performance would put interest payments at risk.

> **Memory Aid**
>
> **TIP-D for solvency.** **T**otal-Assets-to-Debt, **I**nterest Coverage, **P**roprietary, **D**ebt-Equity (and Debt-to-Capital). The five solvency ratios in one acronym.

Debt-Equity	Total-Assets-to-Deb	Proprietary	Interest Coverage
$\frac{\text{LT Debt}}{\text{Shareholders' Funds}}$ Ideal $2:1$	$\frac{\text{Total Assets}}{\text{LT Debt}}$ Higher = safer	$\frac{\text{SH Funds}}{\text{Capital Employed}}$ Higher = stronger	$\frac{\text{PBIT}}{\text{Interest on LT Debt}}$ Ideal ≥ 3

Solvency ratios on a single card: each has a different denominator anchor (Sh. Funds, LT Debt, Capital Employed, Interest) but all read together to assess long-term debt safety.

Solve the NCERT Exercises

5 Activity (Turnover) Ratios

Activity ratios measure the **speed of use** of assets, how many times a given asset class converts into revenue during the year. Higher turnover usually means better efficiency, though it must be interpreted with care.

5.1 Inventory Turnover Ratio

Inventory Turnover Ratio

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$$

where Average Inventory = (Opening Inventory + Closing Inventory) ÷ 2, and Cost of Revenue from Operations = Revenue from Operations − Gross Profit.

Significance. Tells how many times inventory was sold and replaced during the year. A *low* turnover may indicate obsolete stock, over-buying, or poor demand. A *very high* turnover may signal stock-outs and lost sales, or sales at razor-thin margin.

Solved illustration (NCERT Illustration 12). Inventory in the beginning Rs. 18,000; closing Rs. 22,000; net purchases Rs. 46,000; wages Rs. 14,000; carriage inwards Rs. 4,000; revenue from operations Rs. 80,000.

Solution.

$$\begin{aligned}\text{Cost of Revenue from Operations} &= 18{,}000 + 46{,}000 + 14{,}000 + 4{,}000 - 22{,}000 \\ &= 60{,}000 \\ \text{Average Inventory} &= \frac{18{,}000 + 22{,}000}{2} = 20{,}000 \\ \text{Inventory Turnover Ratio} &= \frac{60{,}000}{20{,}000} = 3 \text{ times}\end{aligned}$$

5.2 Trade Receivables Turnover Ratio

Trade Receivables Turnover Ratio

$$\text{Trade Receivables Turnover} = \frac{\text{Net Credit Revenue from Operations}}{\text{Average Trade Receivables}}$$

where Average Trade Receivables = (Opening Debtors + Bills Receivable + Closing Debtors + Bills Receivable) ÷ 2.

$$\text{Average Collection Period} = \frac{\text{No. of days (or months) in a year}}{\text{Trade Receivables Turnover Ratio}}$$

Significance. Indicates the number of times receivables are collected during the period. A higher ratio means faster collection. The average collection period (in days) converts the ratio into a more managerially relevant figure, 45 days for 8.18 times, for example.

Worked example (NCERT Illustration 15, condensed). Total revenue Rs. 4,00,000; cash sales 20% of total; opening receivables Rs. 40,000; closing Rs. 1,20,000.

$$\begin{aligned}\text{Cash sales} &= 20\% \times 4{,}00{,}000 = 80{,}000 \\ \text{Credit sales} &= 4{,}00{,}000 - 80{,}000 = 3{,}20{,}000 \\ \text{Average Receivables} &= \frac{40{,}000 + 1{,}20{,}000}{2} = 80{,}000 \\ \text{Trade Receivables Turnover} &= \frac{3{,}20{,}000}{80{,}000} = 4 \text{ times}\end{aligned}$$

Note. Debtors are taken *before* provision for doubtful debts. If only the year-end

figure is available (opening figure not given), use the closing figure as it is rather than dividing by 2.

5.3 Trade Payables Turnover Ratio

Trade Payables Turnover Ratio

$$\text{Trade Payables Turnover} = \frac{\text{Net Credit Purchases}}{\text{Average Trade Payables}}$$

where Average Trade Payables = (Opening Creditors + Bills Payable + Closing Creditors + Bills Payable) ÷ 2.

$$\text{Average Payment Period} = \frac{\text{No. of days (or months) in a year}}{\text{Trade Payables Turnover Ratio}}$$

Significance. A lower payable-turnover ratio means a longer credit period from suppliers, either favourable terms or, less flatteringly, delayed payment. Both interpretations are possible; the analyst must weigh the firm's reputation and supplier relationship.

Numerical (NCERT Illustration 16). Credit purchases Rs. 12,00,000; creditors opening Rs. 3,00,000, closing Rs. 1,30,000; bills payable opening Rs. 1,00,000, closing Rs. 70,000.

$$\text{Average Trade Payables} = \frac{3{,}00{,}000 + 1{,}00{,}000 + 1{,}30{,}000 + 70{,}000}{2} = 3{,}00{,}000$$

$$\text{Trade Payables Turnover} = \frac{12{,}00{,}000}{3{,}00{,}000} = 4 \text{ times}$$

5.4 Net Assets / Capital Employed Turnover Ratio

Capital Employed Turnover and its components

$$\text{Net Assets / Capital Employed Turnover} = \frac{\text{Revenue from Operations}}{\text{Capital Employed}}$$

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Revenue from Operations}}{\text{Net Fixed Assets}}$$

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Revenue from Operations}}{\text{Working Capital}}$$

where Working Capital = Current Assets − Current Liabilities.

Significance. High turnover of capital employed, and of its components fixed assets and working capital, indicates efficient use. Working Capital Turnover is especially telling for trading firms; Fixed Assets Turnover for manufacturing firms.

Solved (NCERT Illustration 18, abridged). Given:

- Capital Employed Rs. 18,00,000
- Fixed Assets Rs. 16,00,000
- Working Capital Rs. 2,00,000
- Revenue from Operations Rs. 30,00,000

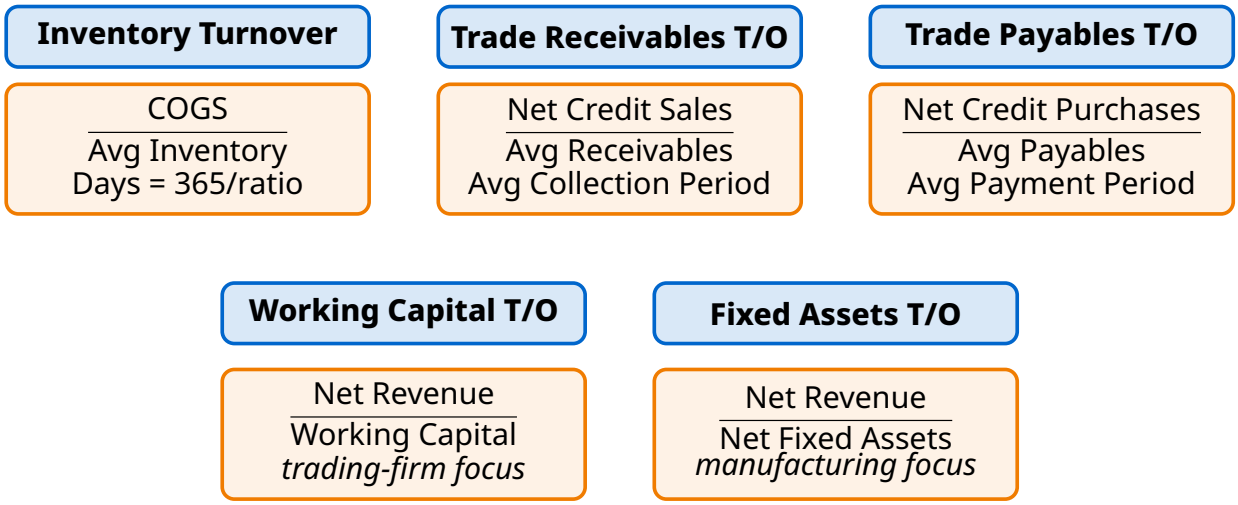
$$\text{Net Assets Turnover Ratio} = \frac{30{,}00{,}000}{18{,}00{,}000} = 1.67 \text{ times}$$

$$\text{Fixed Assets Turnover Ratio} = \frac{30{,}00{,}000}{16{,}00{,}000} = 1.88 \text{ times}$$

$$\text{Working Capital Turnover Ratio} = \frac{30{,}00{,}000}{2{,}00{,}000} = 15 \text{ times}$$

Quick Tip

The denominator decides the storyline. Capital Employed Turnover speaks to investors; Fixed Assets Turnover to production managers; Working Capital Turnover to credit managers and treasurers. Pick the ratio that matches the question's stakeholder.



Activity (Turnover) ratios laid out side-by-side. Each numerator is a flow figure (sales or COGS); each denominator is an average stock figure. Inverse formulas convert turnover into "days outstanding" for managerial reading.

6 Profitability Ratios

Profitability ratios show the firm's **earning capacity** relative to revenue, capital, or shareholder funds. They are the single most important family for equity investors.

6.1 Gross Profit Ratio

Gross Profit Ratio

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Revenue from Operations}} \times 100$$

where Gross Profit = Net Revenue from Operations − Cost of Revenue from Operations.

Significance. Indicates the gross margin earned on each rupee of sales. A higher ratio reflects strong pricing power or low cost of inputs; a falling ratio is a warning. Change comes from either selling price or input cost, or a mix.

Worked example (NCERT Illustration 19, abridged). Cash revenue Rs. 25,000; credit revenue Rs. 75,000; cash purchases Rs. 15,000; credit purchases Rs. 60,000; carriage inwards Rs. 2,000; decrease in inventory Rs. 10,000; return outwards Rs. 2,000; wages Rs. 5,000.

$$\begin{aligned}
\text{Revenue from Operations} &= 25{,}000 + 75{,}000 = 1{,}00{,}000 \\
\text{Net Purchases} &= 15{,}000 + 60{,}000 - 2{,}000 = 73{,}000 \\
\text{COGS} &= 73{,}000 + 10{,}000 + 2{,}000 + 5{,}000 = 90{,}000 \\
\text{Gross Profit} &= 1{,}00{,}000 - 90{,}000 = 10{,}000 \\
\text{Gross Profit Ratio} &= \frac{10{,}000}{1{,}00{,}000} \times 100 = 10\%
\end{aligned}$$

6.2 Operating Ratio

Operating Ratio

$$\text{Operating Ratio} = \frac{\text{Cost of Revenue from Operations} + \text{Operating Expenses}}{\text{Net Revenue from Operations}} \times 100$$

Operating expenses include office and administrative expenses, selling and distribution expenses, employee benefit expenses (excluding production wages), depreciation on office assets, etc.

Significance. The lower the operating ratio, the higher the operating margin. An operating ratio of 80% leaves 20% as operating profit margin.

6.3 Operating Profit Ratio

Operating Profit Ratio

$$\begin{aligned}\text{Operating Profit Ratio} &= 100 - \text{Operating Ratio} \\ &= \frac{\text{Operating Profit}}{\text{Net Revenue from Operations}} \times 100\end{aligned}$$

where Operating Profit = Net Profit + Non-operating expenses − Non-operating income.

Significance. Captures the share of revenue left after operating costs, before interest and tax. It strips out non-recurring or non-operational items, making it a cleaner measure of operating efficiency than the net profit ratio.

6.4 Net Profit Ratio

Net Profit Ratio

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after Tax}}{\text{Net Revenue from Operations}} \times 100$$

Significance. The bottom-line margin, after interest, tax, and non-operating items. The most quoted profitability number, but also the most volatile, because one-off charges or tax events can swing it sharply.

6.5 Return on Capital Employed (ROI / ROCE)

Return on Capital Employed

$$\text{ROCE} = \frac{\text{Profit Before Interest and Tax (PBIT)}}{\text{Capital Employed}} \times 100$$

where Capital Employed = Shareholders' Funds + Long-term Debts (= Non-current Assets + Working Capital).

Significance. The most important inter-firm profitability indicator. It compares operating return against the total long-term funds entrusted to the firm. ROCE should comfortably exceed the cost of borrowing; otherwise the firm is destroying value.

6.6 Return on Shareholders' Funds (RONW)

Return on Shareholders' Funds

$$\text{Return on Shareholders' Funds} = \frac{\text{Profit after Tax}}{\text{Shareholders' Funds}} \times 100$$

Significance. Measures return from the equity owners' perspective. RONW should exceed ROCE if the firm is using debt productively (financial use works in the shareholders' favour).

6.7 Earnings Per Share (EPS)

Earnings Per Share

$$\text{EPS} = \frac{\text{Profit available for Equity Shareholders}}{\text{Number of Equity Shares}}$$

where Profit available = Profit after Tax − Preference Dividend.

Significance. The most quoted equity-investor metric. It signals the firm's capacity to pay dividend and to retain reserves. Stock-market share prices move heavily on EPS surprises.

6.8 Book Value Per Share

Book Value per Share

$$\text{Book Value per Share} = \frac{\text{Equity Shareholders' Funds}}{\text{Number of Equity Shares}}$$

where Equity Shareholders' Funds = Shareholders' Funds − Preference Share Capital.

Significance. The accounting value per share. Comparing market price to book value (the price-to-book ratio) tells whether the share is trading at a premium or discount to its accounting worth.

6.9 Dividend Payout Ratio

Dividend Payout Ratio

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend per Share}}{\text{Earnings per Share}}$$

Significance. The proportion of earnings distributed to shareholders. A young, growing firm reinvests profit (low payout); a mature firm pays out a larger share.

Both can be appropriate, the payout reflects the firm's growth opportunities.

6.10 Price–Earnings (P/E) Ratio

Price–Earnings Ratio

$$\text{P/E Ratio} = \frac{\text{Market Price of a Share}}{\text{Earnings per Share}}$$

Significance. Expresses the multiple investors are willing to pay for each rupee of earnings. A high P/E reflects optimism about future growth; a low P/E either signals risk or undervaluation. P/E varies sharply across industries.

Worked example (NCERT Illustration 22, abridged). A company with equity share capital Rs. 4,00,000 (Rs. 10 each); 12% preference Rs. 1,00,000; reserves Rs. 1,84,000; 10% debentures Rs. 4,00,000; net profit after tax Rs. 1,50,000; tax Rs. 50,000; market price Rs. 34.

$$\begin{aligned}
\text{PBIT} &= 1{,}50{,}000 + 40{,}000 + 50{,}000 = 2{,}40{,}000 \\
\text{Capital Employed} &= 4{,}00{,}000 + 1{,}00{,}000 + 1{,}84{,}000 + 4{,}00{,}000 = 10{,}84{,}000 \\
\text{ROCE} &= \frac{2{,}40{,}000}{10{,}84{,}000} \times 100 = 22.14\% \\
\text{Shareholders' Funds} &= 4{,}00{,}000 + 1{,}00{,}000 + 1{,}84{,}000 = 6{,}84{,}000 \\
\text{RONW} &= \frac{1{,}50{,}000}{6{,}84{,}000} \times 100 = 21.93\% \\
\text{Preference Dividend} &= 12\% \times 1{,}00{,}000 = 12{,}000 \\
\text{Profit for Equity} &= 1{,}50{,}000 - 12{,}000 = 1{,}38{,}000 \\
\text{Number of Equity Shares} &= \frac{4{,}00{,}000}{10} = 40{,}000 \\
\text{EPS} &= \frac{1{,}38{,}000}{40{,}000} = 3.45 \\
\text{P/E Ratio} &= \frac{34}{3.45} = 9.86 \text{ times} \\
\text{Equity Shareholders' Funds} &= 6{,}84{,}000 - 1{,}00{,}000 = 5{,}84{,}000 \\
\text{Book Value per Share} &= \frac{5{,}84{,}000}{40{,}000} = 14.60
\end{aligned}$$

Real-World Application

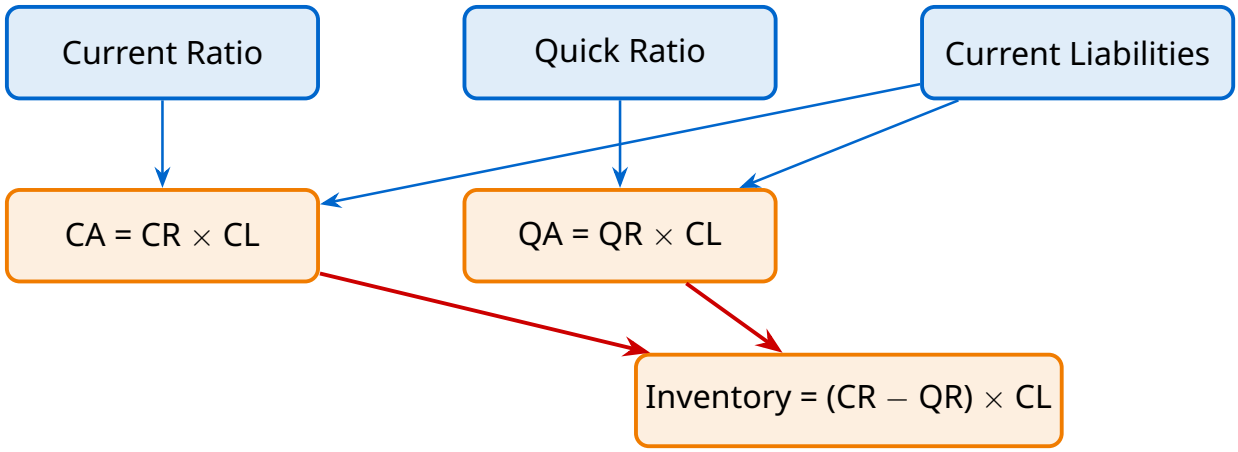
In late 2024, large Indian banks traded at price-to-book of roughly 1.5–3.0 and price-to-earnings of 12–20. IT services firms, with thinner asset bases, traded at price-to-book of 4–7 and P/E of 25–40. Same country, same year, the ratios differ because the underlying business models differ. That is why peer comparisons must stay within an industry.

Gross Profit Ratio	Operating Profit Ratio	Net Profit Ratio	Return on Investment
$\frac{\text{Gross Profit}}{\text{Net Revenue}} \times 100$ Pricing-power read	$\frac{\text{Operating Profit}}{\text{Net Revenue}} \times 100$ Pre-int., pre-tax	$\frac{\text{PAT}}{\text{Net Revenue}} \times 100$ Bottom-line margin	$\frac{\text{PBIT}}{\text{Capital Employed}} \times 100$ Total-capital yield

Profitability ratios stacked in order of operating depth: Gross → Operating → Net narrows the lens from sales-to-bottom-line; ROI looks across the whole capital base instead of just the sales line.

7 Inter-Linkages Between Ratios

Ratios are not stand-alone. They constrain each other, and a careful analyst uses one to cross-check another. Two examples are common in the exam.



Inter-linkage triangle: if any two of Current Ratio, Quick Ratio and Current Liabilities are given, every working-capital figure (Current Assets, Quick Assets, Inventory) can be derived. This template solves the most-asked 6-mark linked-ratio numerical.

7.1 Current Ratio, Quick Ratio, and Inventory

If Current Ratio $=$ CR, Quick Ratio $=$ QR, and Current Liabilities $=$ CL, then:

$$\text{Current Assets} = \text{CR} \times \text{CL}, \qquad \text{Quick Assets} = \text{QR} \times \text{CL}$$

$$\text{Inventory (incl. prepaid)} = \text{Current Assets} - \text{Quick Assets} = (\text{CR} - \text{QR}) \times \text{CL}$$

Worked example (NCERT Illustration 4). X Ltd has Current Ratio $3.5:1$, Quick Ratio $2:1$, and excess of current assets over quick assets (i.e. inventory) is Rs. 24,000. Find current assets and current liabilities.

$$\begin{aligned}
\text{Let CL} &= x \\
\text{Then CA} &= 3.5x, \quad \text{Quick Assets} = 2x \\
\text{Inventory} &= 3.5x - 2x = 1.5x = 24{,}000 \\
&\Rightarrow x = 16{,}000 \\
\text{Current Assets} &= 3.5 \times 16{,}000 = 56{,}000 \\
\text{Current Liabilities} &= 16{,}000
\end{aligned}$$

Verification. CR $= 56{,}000/16{,}000 = 3.5:1$; QR $= 32{,}000/16{,}000 = 2:1$. Both tie.

7.2 Inventory Turnover and Average Inventory

A frequent reverse-computation question: given Inventory Turnover Ratio r, Cost of Revenue from Operations C, and a relationship between opening and closing inventory, find both.

Worked example (NCERT Illustration 23, abridged). Inventory Turnover $= 4$ times; closing inventory is Rs. 20,000 more than opening; revenue Rs. 3,00,000; gross profit ratio 20%; current liabilities Rs. 40,000; quick ratio $0.75:1$.

$$\begin{aligned}
\text{COGS} &= 3{,}00{,}000 - (3{,}00{,}000 \times 20\%) = 2{,}40{,}000 \\
\text{Average Inventory} &= \frac{2{,}40{,}000}{4} = 60{,}000 \\
\text{Let Opening Inventory} &= y; \text{ then Closing} = y + 20{,}000 \\
60{,}000 &= \frac{y + (y + 20{,}000)}{2} \Rightarrow y = 50{,}000 \\
\text{Closing Inventory} &= 70{,}000 \\
\text{Quick Assets} &= 0.75 \times 40{,}000 = 30{,}000 \\
\text{Current Assets} &= 30{,}000 + 70{,}000 = 1{,}00{,}000
\end{aligned}$$

The chained-ratio drill

Three steps solve nine out of ten linked-ratio questions:
1. Convert each ratio into an equation linking two figures (treating any unknown as x).
2. Use one equation to express one unknown in terms of another.
3. Substitute back into the remaining equation to solve.
Always verify your answer by plugging the figures into all original ratios.

8 Commerce / CUET Aptitude Extensions

The CUET, CA Foundation, and many state college entrance papers go a level beyond NCERT, they test the same ratios but reframe them as analytical or scenario-based questions. The two themes below are the most heavily examined extensions.

8.1 DuPont Decomposition of ROCE

DuPont identity

$$\text{ROCE} = \underbrace{\frac{\text{PBIT}}{\text{Revenue}}}_{\text{Operating Profit Margin}} \times \underbrace{\frac{\text{Revenue}}{\text{Capital Employed}}}_{\text{Capital Employed Turnover}}$$

ROCE is the product of *margin* and *turnover*. Two firms can earn the same ROCE through very different routes: a luxury retailer with 30% margin and 0.6$\times$ turnover, or a discount retailer with 4% margin and 4.5$\times$ turnover. Both end at ≈ 18% ROCE.

8.2 Industry-Specific Benchmark Cheatsheet

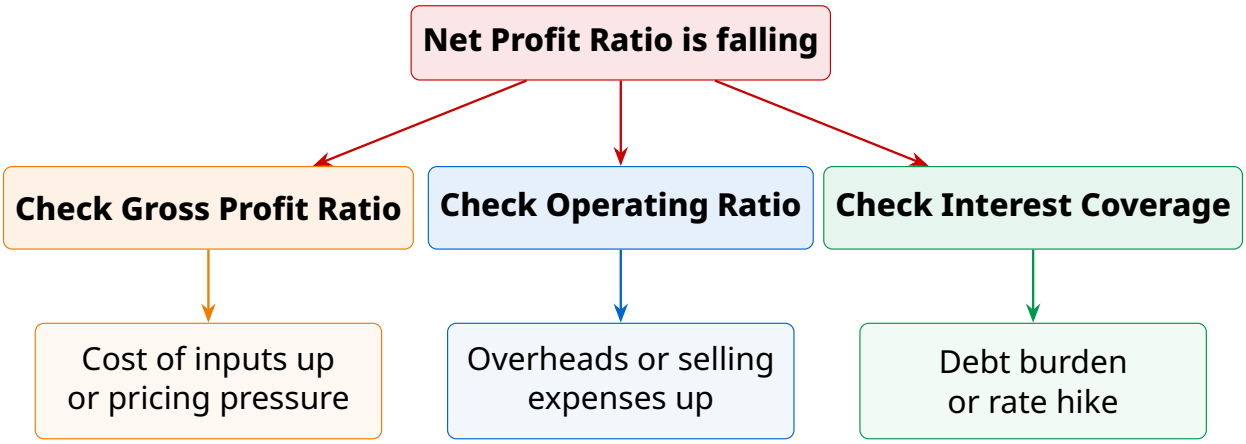
Industry	Current Ratio	Debt-Equity	Inventory T/O	Margin profile
FMCG	1.0–1.4	0.1–0.5	6–10	High turnover, mid margin
Pharma	1.6–2.5	0.2–0.7	3–5	High margin
Cement	1.2–1.8	0.5–1.2	8–12	Cyclical
Banking (NBFC)	,	4–8	,	Spread-based
IT services	2.0–3.5	0–0.2	,	High RONW, low fixed assets

The right ratio depends on the industry. A current ratio of 1.2 is normal for FMCG (fast inventory churn, supplier credit funds the working capital) but worrying for pharma.

Common Mistake

Three classic MCQ traps.
1. "A higher current ratio is always better", *Wrong.* Excessively high ratios indicate idle resources.
2. "Quick ratio includes prepaid expenses", *Wrong.* Prepaid expenses never become cash and are excluded.
3. "ROCE uses Net Profit", *Wrong.* ROCE uses PBIT (Profit *before* interest and tax) to compare operating earnings to long-term capital.

8.3 Reading a Falling Profitability Ratio, Diagnostic Tree



If Net Profit Ratio falls but Gross Profit Ratio holds, the problem is below the gross line, operating expenses or interest. If Gross Profit Ratio also falls, the problem is in the production/pricing chain.

9 Quick Reference Summary

9.1 Master Formula Sheet

All ratios on one page

Liquidity	
Current Ratio	Current Assets ÷ Current Liabilities
Quick Ratio	Quick Assets ÷ Current Liabilities
Solvency	
Debt-Equity	Long-term Debts ÷ Shareholders' Funds
Debt to Capital Employed	Long-term Debts ÷ Capital Employed
Proprietary	Shareholders' Funds ÷ Capital Employed
Total Assets to Debt	Total Assets ÷ Long-term Debts
Interest Coverage	PBIT ÷ Interest on long-term debt
Activity	
Inventory Turnover	COGS ÷ Average Inventory
Receivables Turnover	Net Credit Sales ÷ Avg Receivables
Payables Turnover	Net Credit Purchases ÷ Avg Payables
Capital Employed Turnover	Revenue ÷ Capital Employed
Working Capital Turnover	Revenue ÷ Working Capital
Profitability	
Gross Profit Ratio	(GP ÷ Net Revenue) × 100
Operating Ratio	((COGS + Op. Exp.) ÷ Net Revenue) × 100
Net Profit Ratio	(PAT ÷ Net Revenue) × 100
ROCE	(PBIT ÷ Capital Employed) × 100
RONW	(PAT ÷ Shareholders' Funds) × 100
EPS	(PAT − Pref Div) ÷ No. of Equity Shares
P/E	Market Price ÷ EPS

9.2 Benchmark Cheat Sheet

Ratio	Ideal	Interpretation
Current Ratio	2:1	Below 1.5 risky; above 3 may signal idle assets.
Quick Ratio	1:1	Below 0.7 cash crunch; above 1.5 over-cautious.
Debt-Equity Ratio	2:1 (general)	Higher in capital-intensive sectors.
Interest Coverage	≥ 3 times	Below 1.5 risky, thin operating cushion.
Inventory Turnover	6–8 (varies)	Industry-specific; low signals obsolescence.
Avg. Collection Period	30–60 days	Compare against firm's credit terms.
Gross Profit Ratio	varies by industry	Falling trend is a red flag.
ROCE	$>$ cost of debt	Below this, the firm destroys value.

9.3 Glossary, Twelve Terms

Term	One-line meaning
Accounting Ratio	Mathematical relationship between two figures from financial statements.
Liquidity	Ability to meet short-term obligations.
Solvency	Ability to meet long-term debt obligations.
Activity (Turnover)	Speed at which an asset converts into revenue.
Profitability	Earning capacity relative to revenue, capital, or equity.
Quick Assets	Current assets less inventory and prepaid items.
Capital Employed	Shareholders' Funds $+$ Long-term Debts.
Working Capital	Current Assets $-$ Current Liabilities.
PBIT	Profit before interest and tax (operating profit).
Shareholders' Funds	Share capital plus reserves and surplus.
Average Collection Period	Days a firm takes on average to collect receivables.
Acid-Test Ratio	Another name for the Quick (Liquid) Ratio.

9.4 Likely Exam Questions

- **1-mark.** Define current ratio. State the ideal level of quick ratio. Name any two profitability ratios.
- **3-mark.** Differentiate between current ratio and quick ratio. Or: list any three limitations of ratio analysis.
- **4-mark.** Calculate any four ratios from a given balance sheet extract.

- **6-mark.** Given a set of figures, compute current, quick, debt-equity, and proprietary ratios and offer a short interpretation.
- **8-mark.** Linked-ratio numerical: given two ratios and one figure, derive missing balance-sheet items.

Three takeaways for the exam

1. Always state the formula *before* substituting figures, markers expect the working in that order.
2. Express the answer in the same form as the ratio family: liquidity and solvency as a proportion (e.g. $1.29 : 1$), turnover as "times", profitability as "%".
3. Round monetary figures to the rupee and percentages to two decimal places, unless the question specifies otherwise.

Related Collegedunia Resources

Same chapter — other resources:
- NCERT Solutions
- Formula Sheet
- NCERT Book PDF
- Handwritten Notes

Continue learning:
- Ch 8: Analysis of Financial Statements
- Ch 10: Cash Flow Statement
- Class 12 Accountancy — All Chapters