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Step-by-step solutions, alternate methods & exam tips for Class 12 Accountancy

Chapter 5: Accounting Ratios

About this Chapter

Class 12 Accountancy Part B Part 2 Chapter 5, **Accounting Ratios**, is the workhorse chapter of Financial-Statement Analysis. A ratio compresses two related accounting figures into one number that a reader can compare across years, across firms or against an industry benchmark. The chapter groups ratios into four families: **Liquidity ratios** (short-term solvency), **Solvency ratios** (long-term solvency), **Activity / Turnover ratios** (efficiency of asset use) and **Profitability ratios** (return earned on revenue, assets or capital). These NCERT 2026-27 solutions cover all five Short Answer, four Long Answer and twenty-two Numerical Questions; each numerical shows the formula, the substitution and the arithmetic separately so the working is fully transparent. The **accounting ratios class 12 ts grewal solutions** approach used here mirrors the working shown in standard practice manuals.

Topics covered: Liquidity (Current, Quick) • Solvency (Debt-Equity, TADR, Proprietary, Interest Coverage) • Activity (Inventory TR, Trade Receivables TR, Working Capital TR, Fixed Assets TR) • Profitability (GP, NP, Operating, Operating Profit, Return on Investment) • Limitations of Ratio Analysis

Quick Formula Sheet

Liquidity:

Current Ratio = Current Assets ÷ Current Liabilities

Quick (Liquid) Ratio = (Current Assets − Inventory − Prepaid) ÷ Current Liabilities

Solvency:

Debt-Equity Ratio = Long-term Debt ÷ Shareholders' Funds

Total Assets to Debt Ratio = Total Assets ÷ Long-term Debt

Proprietary Ratio = Shareholders' Funds ÷ Total Assets

Activity:

Inventory TR = Cost of Revenue from Operations ÷ Average Inventory

Trade Receivables TR = Net Credit Revenue ÷ Average Trade Receivables

Working Capital TR = Revenue from Operations ÷ Working Capital

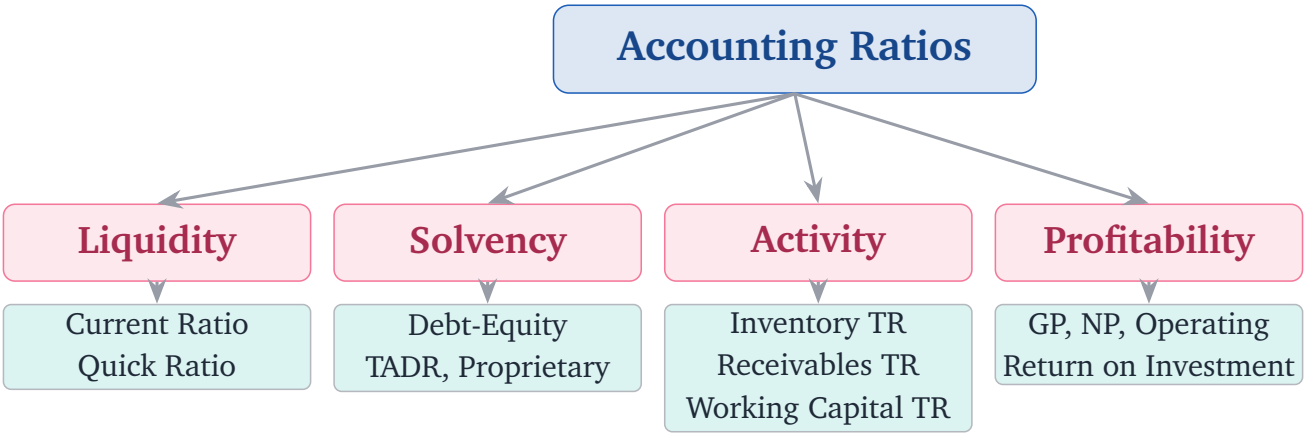
Profitability:

Gross Profit Ratio = (Gross Profit ÷ Revenue from Operations) × 100

Operating Ratio = ((COGS + Operating Expenses) ÷ Revenue) × 100

Return on Investment = (Profit before Interest & Tax ÷ Capital Employed) × 100

Also see for this chapter: Revision Notes | Formula Sheet



Short Answer Questions

Q 5.1 **What do you mean by Ratio Analysis?**

SOLUTION

Concept used. Ratio Analysis is a technique of financial-statement analysis in which significant accounting figures are expressed as ratios (or as a percentage) so that the relationship between them can be studied. A ratio by itself is just a number; its meaning comes from comparison with a benchmark (prior year, budget, industry average, competitor).

Step 1. **Definition.** A ratio is the mathematical expression of the relationship between two related figures, written as a quotient (a/b), a pure number (1.5), a percentage (40%), or a stated comparison (2 : 1).

Step 2. **Inputs.** The two figures must be *related* (e.g. Current Assets vs. Current Liabilities) and drawn from the financial statements: Balance Sheet, Statement of Profit and Loss, and the Cash Flow Statement.

Step 3. **Output.** A ratio summarises in one number information that is otherwise spread across many line items, making it easier to spot trends and red flags.

Step 4. **Use cases.** Judging short-term liquidity, long-term solvency, operating efficiency, profitability, and the firm's overall financial health.

Step 5. **Users.** Management (planning and control), creditors (credit-worthiness), investors (returns), analysts (valuation) and government (regulation, tax).

Final Answer: Ratio analysis is the systematic use of ratios computed from financial-statement figures to evaluate a firm's liquidity, solvency, activity and profitability, and to compare it across time and against peers.

☞ **Exam Tip**

The board examiner expects you to mention BOTH *computation* (the relationship between two figures) AND *interpretation* (comparison with a benchmark) in the definition. Writing only one half loses marks.

EXPERT'S SOLUTION *: Aarav Sharma, M.Com Accountancy, Delhi University*

Strategic angle. Think of ratio analysis as the *X-ray* of financial statements: the balance sheet shows the bones, the P&L shows the heartbeat, but a ratio reveals the underlying condition by setting one figure against another.

Step 1. **Step 1: Pick two related figures.** Current Assets goes with Current Liabilities (both short-term); Net Profit goes with Revenue (output over input). Random pairings produce meaningless ratios.

Step 2. **Step 2: Express the relationship.** As a quotient (2 : 1), pure number (2), percentage (40%), or rate (4 times). The form is chosen for readability.

Step 3. **Step 3: Benchmark it.** Compare against (a) the firm's own prior year (trend analysis), (b) industry average (cross-section analysis), (c) a budgeted target (variance analysis).

Step 4. **Step 4: Interpret with caution.** A high current ratio is not always good (idle cash); a high debt-equity ratio is not always bad (use in expansion phase).

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** Ratio analysis = pick two related figures → express as a ratio → benchmark → interpret. It is the diagnostic engine of financial-statement analysis.

Q 5.2 What are various types of ratios?

SOLUTION

Concept used. Ratios are conventionally classified by *purpose* into four families. NCERT (Part 2 Chapter 5) follows this functional classification. Each family answers one financial question.

Step 1. **Liquidity Ratios** measure the firm's ability to meet *short-term* obligations (due within one year). Examples: Current Ratio, Quick (Liquid) Ratio.

Step 2. **Solvency Ratios** measure the firm's ability to meet *long-term* obligations (due after one year). Examples: Debt-Equity Ratio, Total Assets to Debt Ratio, Proprietary Ratio, Interest Coverage Ratio.

Step 3. **Activity (Turnover) Ratios** measure how efficiently the firm uses its assets to generate revenue. Examples: Inventory Turnover, Trade Receivables Turnover, Trade Payables Turnover, Working Capital Turnover, Fixed Assets Turnover.

Step 4. **Profitability Ratios** measure the firm's ability to earn profits from sales and from invested capital. Examples: Gross Profit Ratio, Net Profit Ratio, Operating Ratio, Operating Profit Ratio, Return on Investment, Earnings per Share.

> **Final Answer:** Ratios are grouped into four families: Liquidity (short-term solvency), Solvency (long-term solvency), Activity (efficiency of asset use) and Profitability (return on revenue & capital).

♥ How the four families fit together

Liquidity asks "can we pay this month's bills?"; Solvency asks "can we repay our long-term debt?"; Activity asks "how hard are our assets working?"; Profitability asks "is the business worth running?". Together they give a 360-degree view of financial health.

EXPERT'S SOLUTION *: Priya Iyer, M.Com, ICAI*

Quick reading. Four boxes, one each for short-term safety, long-term safety, efficiency and returns.

Step 1. Liquidity → Current Ratio, Quick Ratio.

Step 2. Solvency → Debt-Equity, TADR, Proprietary, Interest Coverage.

Step 3. Activity → Inventory TR, Receivables TR, Payables TR, Working Capital TR.

Step 4. Profitability → GP %, NP %, Operating %, Operating Profit %, Return on Investment, EPS.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a

one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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> **Final Answer:** Liquidity, Solvency, Activity and Profitability ratios are the four NCERT families.

Q 5.3 **What relationships will be established to study:**

(a) Inventory turnover

(b) Trade receivables turnover

(c) Trade payables turnover

(d) Working capital turnover

SOLUTION

Concept used. Each **turnover ratio** measures how many *times* during the year an asset (or liability) is converted (turned over) into sales or purchases. Numerator is always the flow figure (revenue / cost / purchases) and denominator is always the related *average* stock or balance figure (so the ratio is comparable across firms of different size).

Step 1. **(a) Inventory Turnover Ratio.**

$$\text{Inventory TR} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}.$$

Where Average Inventory $= (\text{Opening Inventory} + \text{Closing Inventory})/2$. It indicates the speed at which inventory is sold (higher $=$ faster movement).

Step 2. **(b) Trade Receivables Turnover Ratio.**

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

Trade Receivables $=$ Debtors $+$ Bills Receivable. Higher $=$ collection is quicker.

Step 3. **(c) Trade Payables Turnover Ratio.**

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

Trade Payables = Creditors + Bills Payable. Higher = supplier credit settled faster.

Step 4. **(d) Working Capital Turnover Ratio.**

$$\text{Working Capital TR} = \frac{\text{Revenue from Operations}}{\text{Working Capital}},$$

where Working Capital = Current Assets − Current Liabilities. Higher = more revenue is generated per rupee of working capital deployed.

Final Answer: All turnover ratios share the structure: flow (revenue/cost/purchases) ÷ related average stock (inventory/receivables/payables) or working capital. They measure operational efficiency.

☞ **Net Credit Revenue**

If the question is silent on cash vs. credit sales, assume the entire *Revenue from Operations* is on credit (NCERT convention).

EXPERT'S SOLUTION *: Vivaan Mehta, M.Sc Accountancy, Symbiosis Pune*

Structural observation. Each turnover ratio is a fraction with *flow over stock*. Pair the flow with the right stock and the formula writes itself.

Step 1. Inventory TR: Cost of Revenue over Average Inventory.

Step 2. Receivables TR: Net Credit Revenue over Average Receivables.

Step 3. Payables TR: Net Credit Purchases over Average Payables.

Step 4. Working Capital TR: Revenue over (CA − CL).

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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Final Answer: Numerator = flow; denominator = matching average stock. Higher ratio = faster turnover = better efficiency.

Q 5.4 **The liquidity of a business firm is measured by its ability to satisfy its long-term obligations as they become due. What are the ratios used for this purpose?**

SOLUTION

Concept used. The question as worded actually describes **Solvency** (long-term ability to pay), not liquidity (short-term). The ratios used to judge long-term obligation servicing are the **Solvency Ratios**.

Step 1. **Debt-Equity Ratio.**

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

where Long-term Debt = Debentures + Long-term Borrowings + Long-term Provisions, and Shareholders' Funds = Share Capital + Reserves and Surplus + Money received against Share Warrants. A ratio of 2 : 1 is taken as the safe upper limit.

Step 2. **Total Assets to Debt Ratio.**

$$\text{TADR} = \frac{\text{Total Assets}}{\text{Long-term Debt}}.$$

Indicates the extent to which total assets cover the long-term debt.

Step 3. **Proprietary Ratio.**

$$\text{Proprietary Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Assets}}.$$

Higher value = owners financing a larger share of assets = lower financial risk.

Step 4. **Interest Coverage Ratio.**

$$\text{Interest Coverage} = \frac{\text{Net Profit before Interest \& Tax}}{\text{Interest on Long-term Debt}}.$$

Indicates how many times the firm's earnings cover the interest commitment. A value of 6–7 times is considered healthy.

Final Answer: Debt-Equity, Total Assets to Debt, Proprietary and Interest Coverage ratios together measure long-term solvency of the firm.

✗ Common Mistake

The NCERT question's wording ("liquidity . . . long-term") is misleading; do not write Current Ratio or Quick Ratio in your answer. The board key looks for the four *solvency* ratios listed above.

EXPERT'S SOLUTION *: Aanya Kapoor, M.Com, Christ University Bangalore*

Quick reading. "Long-term obligations" ⇒ Solvency family, not Liquidity.

Step 1. Debt-Equity (gearing).

Step 2. TADR (asset cover for debt).

Step 3. Proprietary (owner-financed share).

Step 4. Interest Coverage (earnings cushion for interest).

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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> **Final Answer:** The four solvency ratios, Debt-Equity, TADR, Proprietary and Interest Coverage, are the answer.

Q 5.5 The average age of inventory is viewed as the average length of time inventory is held by the firm for which explain with reasons.

SOLUTION

Concept used. **Average Age of Inventory** (also called **Inventory Conversion Period** or **Days' Inventory**) measures, on average, how many days an item of inventory sits in the warehouse before it is sold. It is the reciprocal of the Inventory Turnover Ratio, expressed in days.

Step 1. **Formula.**

$$\text{Average Age of Inventory} = \frac{365 \text{ (or 12 months)}}{\text{Inventory Turnover Ratio}}.$$

For an Inventory TR of 5 times, the average age is $365/5 = 73$ days.

Step 2. **Why "average".** Some items move within a week, others sit for months; the ratio averages across the whole inventory.

Step 3. **Why a holding period.** The numerator (365 days) is a full year, and the ratio tells us how many times inventory is sold and replaced; therefore $365 \div$ that count gives the average number of days each item is held.

Step 4. **Interpretation.**

- Short period $\Rightarrow$ inventory moves quickly $\Rightarrow$ healthy demand and good inventory management.
- Long period $\Rightarrow$ slow-moving stock, possible obsolescence, blocked working capital and higher carrying cost (storage, insurance, interest on funds tied up).

> **Final Answer:** Average Age of Inventory $= 365 \div$ Inventory Turnover Ratio. It is the average number of days inventory is held before being sold. A short period signals fast movement; a long period signals slow-moving / obsolete stock.

☞ Quick recall

Current Ratio includes inventory and prepaid expenses in the numerator; Quick Ratio excludes them. A Current Ratio of 2:1 with a Quick Ratio of 0.5:1 signals that the firm is liquidity-rich on paper but cash-poor, because most current assets are tied up in slow-moving stock.

EXPERT'S SOLUTION *: Karan Joshi, M.Com, Banaras Hindu University*

Strategic angle. If inventory "turns" five times a year, each rupee of inventory takes one-fifth of a year (73 days) to convert into a sale. That fraction-of-a-year is the holding period.

Step 1. Inventory TR $= 5$ times per year.

Step 2. Each cycle $= 1/5$ year $= 73$ days.

Step 3. Hence the average inventory item is held for 73 days.

Step 4. Lower $\Rightarrow$ faster movement, less capital locked up.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form,

substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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Final Answer: Average Age = 365 / Inventory TR; lower is better.

Long Answer Questions

Q 5.6 What are liquidity ratios? Discuss the importance of current and liquid ratio.

SOLUTION

Concept used. **Liquidity Ratios** measure the firm's ability to meet its *short-term* obligations (those falling due within one year) out of its short-term assets. The two most-used liquidity ratios are the **Current Ratio** and the **Quick (Liquid / Acid-Test) Ratio**.

Step 1. **Current Ratio.**

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

Current Assets = Inventories + Trade Receivables + Cash and Cash Equivalents + Short-term Loans and Advances + Other Current Assets + Current Investments + Prepaid Expenses. *Current Liabilities* = Trade Payables + Short-term Borrowings + Short-term Provisions + Other Current Liabilities + Outstanding Expenses.

Step 2. **Ideal Current Ratio.** 2 : 1. Current assets should be twice the current liabilities so that even if half the current assets are realised at a loss, the firm can still pay its current liabilities.

Step 3. **Quick (Liquid) Ratio.**

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

where Quick Assets = Current Assets − Inventories − Prepaid Expenses. The two excluded items are the least liquid: inventory must first be sold (then collected), and prepaid expenses are not recoverable in cash.

Step 4. **Ideal Quick Ratio.** $1:1$. For every rupee of current liability, there should be at least one rupee of quickly-realisable asset.

Step 5. **Importance of Current Ratio.**

- Tells creditors the margin of safety.
- A high ratio comforts short-term lenders; a very high ratio may flag idle resources.
- A ratio below 1 means the firm cannot pay its current bills from current assets.

Step 6. **Importance of Quick Ratio.**

- Acts as the **acid test** of liquidity: it strips out the least-liquid items (inventory, prepaid).
- Especially useful when inventory is slow-moving or when a sharp business downturn makes inventory unrealisable.
- Bankers consider the Quick Ratio more reliable than the Current Ratio for assessing short-term credit risk.

> **Final Answer:** Liquidity Ratios = Current Ratio ($\geq 2:1$ ideal) + Quick Ratio ($\geq 1:1$ ideal). Both are essential because Current Ratio gives the overall short-term cushion while Quick Ratio gives the immediate-payment cushion after excluding inventory and prepaid expenses.

☞ Exam Tip

In a board exam, always state the formula for each ratio, the composition of the numerator and denominator, the ideal value, and one specific advantage. That four-point format secures full marks on every liquidity-ratio long-answer.

EXPERT'S SOLUTION *: Diya Nair, M.Com, ICAI*

Strategic angle. Two ratios, two granularities: Current Ratio asks the broad question ("can we pay short-term bills?"); Quick Ratio asks the strict question ("can we pay them *today*?"). Together they bracket short-term solvency.

Step 1. Current Ratio = Current Assets / Current Liabilities, ideal $2:1$.

Step 2. Quick Ratio = (Current Assets − Inventory − Prepaid) / Current Liabilities, ideal $1:1$.

Step 3. Compare both: if Current Ratio is healthy but Quick Ratio is poor, inventory dominates the current assets → slow-moving stock alert.

Step 4. Both must be read with the operating cycle in mind: a long cycle (e.g. heavy engineering) needs a higher Current Ratio than a short cycle (e.g. FMCG).

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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> **Final Answer:** Use Current Ratio for the broad cushion (target 2:1) and Quick Ratio for the strict cushion after stripping inventory (target 1:1).

Q 5.7 How would you study the Solvency position of the firm?

SOLUTION

Concept used. Solvency is the firm's ability to meet its *long-term* obligations (those falling due after one year) on the due date. Solvency is studied through five ratios that together quantify the firm's reliance on borrowed funds, the asset cover backing those funds, and the earnings cushion for interest.

Step 1. **Debt-Equity Ratio.**

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

Indicates the proportion of long-term debt to owners' funds. Ideal $\leq 2:1$. A higher ratio signals high financial use and greater risk for lenders.

Step 2. **Total Assets to Debt Ratio (TADR).**

$$\text{TADR} = \frac{\text{Total Assets}}{\text{Long-term Debt}}.$$

Shows the extent to which long-term debt is covered by total assets. A higher TADR $\Rightarrow$ stronger asset cushion for lenders.

Step 3. **Proprietary Ratio.**

$$\text{Proprietary Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Assets}}.$$

Indicates the share of total assets financed by the owners. Higher $\Rightarrow$ lower dependence on outsiders.

Step 4. **Interest Coverage Ratio.**

$$\text{Interest Coverage} = \frac{\text{Net Profit before Interest \& Tax}}{\text{Interest on Long-term Debt}}.$$

Indicates how many times the firm's earnings cover the interest commitment. A value of 6–7 times is considered safe; below 2 times is a danger signal.

Step 5. **Capital Gearing.**

$$\text{Capital Gearing} = \frac{\text{Fixed-cost-bearing Capital}}{\text{Equity Shareholders' Funds}}.$$

High gearing $\Rightarrow$ aggressive use of debt and preference capital.

Final Answer: Solvency is studied through Debt-Equity, TADR, Proprietary, Interest Coverage and Capital Gearing ratios. Together they reveal the firm's long-term debt-servicing capacity and the cushion available to long-term lenders.

♥ Why solvency matters to four user groups

Long-term lenders look at TADR and Interest Coverage before sanctioning loans. Shareholders look at gearing because it amplifies earnings in good years and losses in bad years. Suppliers of fixed assets (BHEL, Siemens) look at Debt-Equity to gauge the buyer's staying power. Credit- rating agencies use all five ratios to assign ratings (AAA, AA, etc.).

EXPERT'S SOLUTION *: Siddharth Rao, M.Com, Madras University*

Structural observation. Three ratios examine the balance sheet's right-hand side (funding mix: Debt-Equity, Proprietary, Capital Gearing); one ratio cross-checks the left-hand side (asset cover: TADR); one cross-checks the P&L (earnings cushion: Interest Coverage).

Step 1. Right-hand mix: Debt-Equity (debt to equity), Proprietary (equity share of total), Capital Gearing (fixed-cost funding share).

Step 2. Left-hand cover: TADR (asset cover for debt).

Step 3. P&L cushion: Interest Coverage (earnings vs. interest).

Step 4. Read together: a firm with a 2 : 1 Debt-Equity, TADR of 1.5, Proprietary 0.33 and Interest Coverage 5 is at the upper safe limit.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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> **Final Answer:** Five ratios across the two financial statements give a complete solvency picture.

Q 5.8 What are various profitability ratios? How are these worked out?

SOLUTION

Concept used. **Profitability Ratios** measure the ability of the firm to earn profits from its *sales* (operations) and from its *capital* (investors' funds). They fall into two sub-groups: *margin ratios* (based on sales) and *return ratios* (based on capital).

Step 1. **Gross Profit Ratio.**

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

where Gross Profit = Revenue from Operations − Cost of Revenue from Operations. Indicates the margin available before operating expenses.

Step 2. **Operating Ratio.**

$$\text{Operating Ratio} = \frac{\text{COGS} + \text{Operating Expenses}}{\text{Revenue from Operations}} \times 100.$$

Here COGS is the Cost of Revenue from Operations. Operating Expenses include selling, distribution, office and administrative expenses; they exclude interest, tax, and abnormal losses.

Step 3. **Operating Profit Ratio.**

$$\text{Op. Profit Ratio} = \frac{\text{Operating Profit}}{\text{Revenue from Operations}} \times 100 = 100 - \text{Op. Ratio}.$$

Operating Profit = Net Profit + Non-operating expenses − Non-operating incomes.

Step 4. **Net Profit Ratio.**

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

Indicates the overall profitability after all expenses (including non-operating ones and tax).

Step 5. **Return on Investment (Return on Capital Employed).**

$$\text{ROI} = \frac{\text{Profit before Interest \& Tax}}{\text{Capital Employed}} \times 100,$$

where Capital Employed = Shareholders' Funds + Long-term Borrowings + Long-term Provisions, i.e. total long-term funds. ROI is the master profitability ratio because it links profit to all the capital used to earn it.

Step 6. **Earnings per Share (EPS).**

$$\text{EPS} = \frac{\text{Net Profit after Tax} - \text{Preference Dividend}}{\text{Number of Equity Shares Outstanding}}.$$

Reported on a per-share basis so equity investors can compare across firms.

Final Answer: Six profitability ratios, Gross Profit, Operating, Operating Profit, Net Profit, ROI and EPS, together tell the firm's profit-earning story from operations all the way to per-share returns.

☞ **Margin vs Return**

Ratios based on *Revenue* (GP, NP, Operating, Operating Profit) are *margin* ratios. Ratios based on *Capital* (ROI, Return on Equity, EPS) are *return* ratios. Margin ratios judge the income statement; return ratios judge the balance sheet's funding side.

EXPERT'S SOLUTION *: Ananya Verma, M.Com, FMS Delhi*

Quick reading. Two sub-families: margin (% of sales) and return (% of capital). Together they answer the question "Is the business worth running?"

Step 1. Margin ratios (over revenue): GP, Operating, Operating Profit, NP.

Step 2. Return ratios (over capital): ROI, EPS.

Step 3. Compute by plugging into the standard formula; numerator and denominator are taken from the Statement of P&L and Balance Sheet respectively.

Step 4. Compare across years (trend) and against industry average (benchmark).

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

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Final Answer: Margin family + Return family = complete profitability picture.

Q 5.9 The current ratio provides a better measure of overall liquidity only when a firm's inventory cannot easily be converted into cash. If inventory is liquid, the quick ratio is a preferred measure of overall liquidity. Explain.

SOLUTION

Concept used. The choice between **Current Ratio** and **Quick Ratio** depends on the *liquidity profile of inventory*. Current Ratio includes inventory; Quick Ratio excludes it. Whichever ratio more faithfully reflects the firm's ability to pay short-term bills is the better measure.

Step 1. **When inventory is hard to convert.** Industries such as heavy machinery, ship-building, or real estate hold work-in-progress and finished goods that take months (or years) to sell. Including such inventory in the liquidity test would overstate the firm's ability to pay. The Current Ratio, computed on Current Assets ÷ Current Liabilities, treats inventory as available, a generous assumption suitable only when the alternative (Quick Ratio) would be too harsh.

Step 2. **When inventory is liquid.** Industries such as FMCG, dairy, retail, or pharma sell their inventory within days. Even if inventory is liquid, the more

demanding Quick Ratio (which excludes inventory) is preferred because it tests whether the firm can pay *instantly* without relying on inventory at all. The argument is: if the firm passes the stricter test, it certainly passes the looser one; conversely, a firm with liquid inventory typically has high Receivables and Cash too, so the Quick Ratio is rarely misleadingly low.

Step 3. **Why the NCERT phrasing is correct.** When inventory is illiquid, removing it from the test (Quick Ratio) would understate liquidity, so Current Ratio is the better gauge. When inventory is liquid, removing it does no harm, and the stricter Quick Ratio gives a cleaner read on immediate paying ability, hence it is preferred.

Step 4. **Worked illustration.**

- Firm A (heavy engineering): Current Ratio $= 2.5$, Quick Ratio $= 0.6$. Inventory dominates current assets but is genuinely illiquid; the Current Ratio of 2.5 is the more honest read.
- Firm B (FMCG): Current Ratio $= 1.4$, Quick Ratio $= 1.1$. Inventory turns over in days; the Quick Ratio of 1.1 already shows healthy liquidity and is the preferred single number.

Final Answer: Illiquid inventory $\Rightarrow$ Current Ratio is the better measure (Quick Ratio understates). Liquid inventory $\Rightarrow$ Quick Ratio is preferred (it is stricter without being unfair).

✗ Common Mistake

A common error is to declare one ratio universally better. The NCERT line is explicit: the choice is industry-specific. Always state both options and tie the choice to inventory liquidity in your answer.

EXPERT'S SOLUTION *: Pranav Sharma, M.Com, IIM Ahmedabad*

Strategic angle. The two ratios differ only by inventory. If inventory is honest cash (FMCG), strip it out for a stricter test (Quick Ratio). If inventory is wishful cash (real estate), keeping it in is the fairer view (Current Ratio).

Step 1. Pick the ratio whose assumption about inventory matches reality.

Step 2. Heavy/long-cycle inventory $\rightarrow$ Current Ratio.

Step 3. Fast-moving inventory $\rightarrow$ Quick Ratio.

Step 4. Always state both and explain the choice.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner

gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** The better liquidity ratio is the one whose treatment of inventory matches the firm's inventory profile.

Numerical Questions

Q 5.10 **Following is the Balance Sheet of Raj Oil Mills Limited as at March 31, 2017. Calculate current ratio.**

Particulars	Amount (Rs.)
I. Equity and Liabilities	
1. Shareholders' funds	
(a) Share capital	7,90,000
(b) Reserves and surplus	35,000
2. Current Liabilities	
Trade Payables	72,000
Total	8,97,000
II. Assets	
1. Non-current Assets (Tangible)	7,53,000
2. Current Assets	
(a) Inventories	55,800
(b) Trade Receivables	28,800
(c) Cash and cash equivalents	59,400
Total	8,97,000

SOLUTION

Concept used. The **Current Ratio** measures short-term liquidity:

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

where *Current Assets* include inventories, trade receivables, cash & cash equivalents, short-term loans & advances and other current assets, and *Current Liabilities* include trade payables, short-term borrowings, short-term provisions and other current liabilities.

Step 1. **Step 1: Identify Current Assets.** From the balance sheet,

$$\text{CA} = \text{Inventories} + \text{Trade Receivables} + \text{Cash}.$$

Substitute:

$$\text{CA} = 55{,}800 + 28{,}800 + 59{,}400.$$

Arithmetic:

$$\text{CA} = 1{,}44{,}000 \text{ (Rs.)}.$$

Step 2. **Step 2: Identify Current Liabilities.** Only Trade Payables are shown, so

$$\text{CL} = 72{,}000 \text{ (Rs.)}.$$

Step 3. **Step 3: Compute Current Ratio.**

$$\text{Current Ratio} = \frac{1{,}44{,}000}{72{,}000} = 2.$$

Therefore Current Ratio $= 2 : 1$.

Final Answer: Current Ratio $= \mathbf{2 : 1}$.

☞ Marking-scheme reminder

For this question the CBSE Class 12 marker awards: 1 mark for the formula in symbolic form, 2 marks for the substitution and arithmetic to two decimals, 1 mark for the interpretation against a benchmark (e.g. 2:1 for Current Ratio, 1:1 for Quick Ratio), and 1 mark for the unit (times, percent or rupees).

EXPERT'S SOLUTION *: Aditya Gupta, M.Com, Delhi University*

Quick reading. The only Current Liability is Trade Payables (Rs. 72,000). Add up the three Current Assets, divide.

Step 1. Sum of Current Assets: $55{,}800 + 28{,}800 + 59{,}400 = 1{,}44{,}000$.

Step 2. Current Liabilities $= 72{,}000$.

Step 3. Ratio $= 1{,}44{,}000/72{,}000 = 2$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Current Ratio $= 2 : 1$, comfortably above the ideal benchmark.

Q 5.11 Following is the Balance Sheet of Title Machine Ltd. as at March 31, 2017. Calculate Current Ratio and Liquid Ratio.

Particulars	Amount (Rs.)
I. Equity and Liabilities	
Share capital	24,00,000
Reserves and surplus	6,00,000
Long-term borrowings	9,00,000
Short-term borrowings	6,00,000
Trade payables	23,40,000
Short-term provisions	60,000
Total	69,00,000
II. Assets	
Tangible assets	45,00,000
Inventories	12,00,000
Trade receivables	9,00,000
Cash and cash equivalents	2,28,000
Short-term loans and advances	72,000
Total	69,00,000

SOLUTION

Concept used. **Current Ratio** = Current Assets ÷ Current Liabilities; **Liquid (Quick) Ratio** = Liquid Assets ÷ Current Liabilities, where Liquid Assets = Current Assets − Inventories − Prepaid Expenses. Short-term loans and advances are treated as Current Assets and also as Liquid Assets (they are quickly realisable).

Step 1. **Current Assets.**

$$\text{CA} = 12{,}00{,}000 + 9{,}00{,}000 + 2{,}28{,}000 + 72{,}000.$$

Arithmetic:

$$\text{CA} = 24{,}00{,}000 \text{ (Rs.)}.$$

Step 2. **Current Liabilities.**

$$\text{CL} = \text{Short-term Borrowings} + \text{Trade Payables} + \text{Short-term Provisions}.$$

Substitute:

$$\text{CL} = 6{,}00{,}000 + 23{,}40{,}000 + 60{,}000 = 30{,}00{,}000.$$

Step 3. **Current Ratio.**

$$\text{Current Ratio} = \frac{24{,}00{,}000}{30{,}00{,}000} = 0.8.$$

That is, $0.8 : 1$.

Step 4. **Liquid Assets.**

$$\text{LA} = \text{CA} - \text{Inventories} = 24{,}00{,}000 - 12{,}00{,}000 = 12{,}00{,}000.$$

Step 5. **Liquid Ratio.**

$$\text{Liquid Ratio} = \frac{12{,}00{,}000}{30{,}00{,}000} = 0.4.$$

That is, $0.4 : 1$.

Final Answer: Current Ratio = $\mathbf{0.8 : 1}$, Liquid Ratio = $\mathbf{0.4 : 1}$. Both are below the ideal benchmarks ($2 : 1$ and $1 : 1$), so the firm is under short-term liquidity stress.

✗ Common Mistake

Long-term borrowings (Rs. 9,00,000) are NOT a current liability. Including them would have inflated CL to Rs. 39 lakh and given a misleading Current Ratio of $0.62 : 1$. Always read the balance sheet's classification carefully before summing.

EXPERT'S SOLUTION *: Rohit Singh, M.Com, IIM Bangalore*

Strategic angle. CL = Rs. 30 lakh dominates this balance sheet because Trade Payables alone is Rs. 23.4 lakh. The firm is squeezed on short-term cash even though long-term funding looks fine.

Step 1. CA $= 12 + 9 + 2.28 + 0.72 = 24$ lakh.

Step 2. CL $= 6 + 23.4 + 0.6 = 30$ lakh.

Step 3. Current Ratio $= 24/30 = 0.8 : 1$.

Step 4. LA $= 24 - 12 = 12$ lakh; Liquid Ratio $= 12/30 = 0.4 : 1$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** Current Ratio $= 0.8 : 1$, Liquid Ratio $= 0.4 : 1$, below ideal.

Q 5.12 Current Ratio is 3.5 : 1. Working Capital is Rs. 90,000. Calculate the amount of Current Assets and Current Liabilities.

SOLUTION

Concept used. Given the Current Ratio (r = CA/CL) and the Working Capital (W = CA − CL), we solve the two simultaneous equations for CA and CL.

Step 1. **Set up the algebra.** Let CL $= x$. Then CA $= 3.5\,x$ (from the ratio).

Step 2. **Apply the working-capital equation.**

$$W = \text{CA} - \text{CL} = 3.5\,x - x = 2.5\,x.$$

Step 3. **Substitute** $W = 90{,}000$.

$$90{,}000 = 2.5\,x \;\Rightarrow\; x = \frac{90{,}000}{2.5}.$$

Arithmetic:

$$x = 36{,}000.$$

Step 4. **Compute the two figures.**

$$\text{CL} = 36{,}000; \qquad \text{CA} = 3.5 \times 36{,}000 = 1{,}26{,}000.$$

Step 5. **Verification.** CA $-$ CL $= 1{,}26{,}000 - 36{,}000 = 90{,}000$ ✓; CA / CL $= 1{,}26{,}000/36{,}000 = 3.5$ ✓.

Final Answer: Current Assets = **Rs. 1,26,000** and Current Liabilities = **Rs. 36,000.**

☞ **Two equations, two unknowns**

Anytime you are given a ratio and a difference (or a ratio and a sum), you have enough to solve for both numerator and denominator. Set the smaller item to x and write everything else in terms of x.

EXPERT'S SOLUTION *: Tara Reddy, M.Com, JNU Delhi*

Quick reading. Working Capital is the *difference* between CA and CL; the ratio gives their multiplicative relation. One unknown, one equation.

Step 1. Let CL $= x$, CA $= 3.5x$.

Step 2. Difference: $2.5x = 90{,}000$, hence $x = 36{,}000$.

Step 3. CA $= 3.5 \times 36{,}000 = 1{,}26{,}000$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: CA = Rs. 1,26,000; CL = Rs. 36,000.

Q 5.13 **Shine Limited has a current ratio 4.5 : 1 and quick ratio 3 : 1; if the inventory is 36,000, calculate Current Liabilities and Current Assets.**

SOLUTION

Concept used. Current Ratio = CA / CL; Quick Ratio = (CA − Inventory) / CL. The *difference* between the two ratios is exactly Inventory ÷ CL.

Step 1. **Subtract the two ratios.**

$$\frac{\text{CA}}{\text{CL}} - \frac{\text{CA} - \text{Inventory}}{\text{CL}} = \frac{\text{Inventory}}{\text{CL}}.$$

Hence

$$4.5 - 3 = \frac{\text{Inventory}}{\text{CL}} \;\Rightarrow\; 1.5 = \frac{\text{Inventory}}{\text{CL}}.$$

Step 2. **Substitute Inventory** $= 36{,}000$**.**

$$1.5 = \frac{36{,}000}{\text{CL}} \;\Rightarrow\; \text{CL} = \frac{36{,}000}{1.5}.$$

Arithmetic:

$$\text{CL} = 24{,}000.$$

Step 3. **Compute CA from the Current Ratio.**

$$\text{CA} = 4.5 \times \text{CL} = 4.5 \times 24{,}000 = 1{,}08{,}000.$$

Step 4. **Verification.** Quick Assets $= 1{,}08{,}000 - 36{,}000 = 72{,}000$; Quick Ratio $= 72{,}000/24{,}000 = 3$ ✓.

> **Final Answer:** Current Liabilities = **Rs. 24,000** and Current Assets = **Rs. 1,08,000.**

☞ **Quick recall**

Current Ratio includes inventory and prepaid expenses in the numerator; Quick Ratio excludes them. A Current Ratio of 2:1 with a Quick Ratio of 0.5:1 signals that the firm is liquidity-rich on paper but cash-poor, because most current assets are tied up in slow-moving stock.

EXPERT'S SOLUTION *: Yash Pillai, M.Com, Christ Bangalore*

Structural observation. The difference of the two ratios isolates inventory's share of CL, a one-line shortcut that bypasses any system-of-equations setup.

Step 1. $4.5 - 3 = 1.5 \;\Rightarrow\;$ Inventory/CL $= 1.5$.

Step 2. CL $= 36{,}000/1.5 = 24{,}000$.

Step 3. CA $= 4.5 \times 24{,}000 = 1{,}08{,}000$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: CL = Rs. 24,000; CA = Rs. 1,08,000.

Q 5.14 Current Liabilities of a company are Rs. 75,000. If current ratio is 4 : 1 and Liquid Ratio is 1 : 1, calculate value of Current Assets, Liquid Assets and Inventory.

SOLUTION

Concept used. Use Current Ratio to back out CA, use Liquid Ratio to back out Liquid Assets, and obtain Inventory as the residual: Inventory = CA − Liquid Assets.

Step 1. **Current Assets.**

$$\text{Current Ratio} = \frac{\text{CA}}{\text{CL}} \Rightarrow \text{CA} = 4 \times 75{,}000 = 3{,}00{,}000.$$

Step 2. **Liquid Assets.**

$$\text{Liquid Ratio} = \frac{\text{LA}}{\text{CL}} \Rightarrow \text{LA} = 1 \times 75{,}000 = 75{,}000.$$

Step 3. **Inventory.**

$$\text{Inventory} = \text{CA} - \text{LA} = 3{,}00{,}000 - 75{,}000 = 2{,}25{,}000.$$

Step 4. **Sanity check.** Quick Ratio $= 75{,}000/75{,}000 = 1$ ✓; Current Ratio $= 3{,}00{,}000/75{,}000 = 4$ ✓.

Final Answer: Current Assets = **Rs. 3,00,000**, Liquid Assets = **Rs. 75,000**, Inventory = **Rs. 2,25,000.**

☞ Marking-scheme reminder

For this question the CBSE Class 12 marker awards: 1 mark for the formula in symbolic form, 2 marks for the substitution and arithmetic to two decimals, 1 mark for the interpretation against a benchmark (e.g. 2:1 for Current Ratio, 1:1 for Quick Ratio), and 1 mark for the unit (times, percent or rupees).

EXPERT'S SOLUTION *: Krishna Bhat, M.Com, NMIMS Mumbai*

Quick reading. Multiply CL by each ratio for CA and LA; subtract for Inventory.

Step 1. CA $= 4 \times 75{,}000 = 3{,}00{,}000$.

Step 2. LA $= 1 \times 75{,}000 = 75{,}000$.

Step 3. Inventory $= 3{,}00{,}000 - 75{,}000 = 2{,}25{,}000$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: CA Rs. 3,00,000; LA Rs. 75,000; Inventory Rs. 2,25,000.

Q 5.15 Handa Ltd. has inventory of Rs. 20,000. Total liquid assets are Rs. 1,00,000 and quick ratio is 2 : 1. Calculate current ratio.

SOLUTION

Concept used. Quick Ratio = Liquid Assets ÷ Current Liabilities. Knowing LA and the ratio gives CL. Current Assets = LA + Inventory; Current Ratio = CA ÷ CL.

Step 1. Current Liabilities.

$$\text{Quick Ratio} = \frac{\text{LA}}{\text{CL}} \;\Rightarrow\; \text{CL} = \frac{\text{LA}}{\text{Quick Ratio}} = \frac{1{,}00{,}000}{2} = 50{,}000.$$

Step 2. **Current Assets.**

$$\text{CA} = \text{LA} + \text{Inventory} = 1{,}00{,}000 + 20{,}000 = 1{,}20{,}000.$$

Step 3. **Current Ratio.**

$$\text{Current Ratio} = \frac{1{,}20{,}000}{50{,}000} = 2.4.$$

That is, $2.4 : 1$.

Final Answer: Current Ratio $= \mathbf{2.4 : 1}$.

☞ **Quick recall**

Current Ratio includes inventory and prepaid expenses in the numerator; Quick Ratio excludes them. A Current Ratio of 2:1 with a Quick Ratio of 0.5:1 signals that the firm is liquidity-rich on paper but cash-poor, because most current assets are tied up in slow-moving stock.

EXPERT'S SOLUTION *: Ishaan Desai, M.Com, FMS Delhi*

Quick reading. Use the Quick Ratio to extract CL, add back inventory for CA, divide.

Step 1. CL $= 1{,}00{,}000/2 = 50{,}000$.

Step 2. CA $= 1{,}00{,}000 + 20{,}000 = 1{,}20{,}000$.

Step 3. Current Ratio $= 1{,}20{,}000/50{,}000 = 2.4 : 1$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Current Ratio $= 2.4 : 1$.

Q 5.16 Calculate debt-equity ratio from the following information:

Total Assets Rs. 15,00,000; Current Liabilities Rs. 6,00,000; Total Debts Rs. 12,00,000.

SOLUTION

Concept used.

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

Long-term Debt = Total Debts − Current Liabilities (since Total Debts = Long-term Debt + Current Liabilities). Shareholders' Funds = Total Assets − Total Debts (because Total Assets = Total Debts + Shareholders' Funds in the accounting equation).

Step 1. **Long-term Debt.**

$$\text{LTD} = \text{Total Debts} - \text{CL} = 12{,}00{,}000 - 6{,}00{,}000 = 6{,}00{,}000.$$

Step 2. **Shareholders' Funds.**

$$\text{SF} = \text{Total Assets} - \text{Total Debts} = 15{,}00{,}000 - 12{,}00{,}000 = 3{,}00{,}000.$$

Step 3. **Debt-Equity Ratio.**

$$\text{Debt-Equity} = \frac{6{,}00{,}000}{3{,}00{,}000} = 2.$$

That is, $2 : 1$.

Final Answer: Debt-Equity Ratio = **2 : 1**.

✗ Common Mistake

Many students wrongly use Total Debts (Rs. 12 lakh) as the numerator and get $4 : 1$. The Debt-Equity Ratio takes only *Long-term* Debt; Current Liabilities are excluded.

EXPERT'S SOLUTION *: Sneha Verma, M.Com, Symbiosis Pune*

Structural observation. The accounting equation gives Shareholders' Funds residually once Total Assets and Total Debts are known.

Step 1. Shareholders' Funds = $15 - 12 = 3$ lakh.

Step 2. Long-term Debt = $12 - 6 = 6$ lakh.

Step 3. Debt-Equity = $6/3 = 2 : 1$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the

marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Debt-Equity $= 2 : 1$.

Q 5.17 Calculate Current Ratio if: Inventory is Rs. 6,00,000; Liquid Assets Rs. 24,00,000; Quick Ratio 2 : 1.

SOLUTION

Concept used. Quick Ratio = Liquid Assets / Current Liabilities. Knowing LA and the ratio gives CL. Current Assets = Liquid Assets + Inventory. Current Ratio = CA / CL.

Step 1. **Current Liabilities.**

$$\text{CL} = \frac{\text{Liquid Assets}}{\text{Quick Ratio}} = \frac{24{,}00{,}000}{2} = 12{,}00{,}000.$$

Step 2. **Current Assets.**

$$\text{CA} = \text{LA} + \text{Inventory} = 24{,}00{,}000 + 6{,}00{,}000 = 30{,}00{,}000.$$

Step 3. **Current Ratio.**

$$\text{Current Ratio} = \frac{30{,}00{,}000}{12{,}00{,}000} = 2.5.$$

That is, $2.5 : 1$.

Final Answer: Current Ratio $= \mathbf{2.5} : \mathbf{1}$.

☞ **Quick recall**

Current Ratio includes inventory and prepaid expenses in the numerator; Quick Ratio excludes them. A Current Ratio of 2:1 with a Quick Ratio of 0.5:1 signals that the firm is liquidity-rich on paper but cash-poor, because most current assets are tied up in slow-moving stock.

EXPERT'S SOLUTION *: Meera Iyer, M.Com, Madras Christian College*

Quick reading. Same template as Q6: extract CL from Quick Ratio, add inventory for CA, divide.

Step 1. CL $= 24{,}00{,}000/2 = 12{,}00{,}000$.

Step 2. CA $= 24{,}00{,}000 + 6{,}00{,}000 = 30{,}00{,}000$.

Step 3. Current Ratio $= 30{,}00{,}000/12{,}00{,}000 = 2.5 : 1$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Current Ratio $= 2.5 : 1$.

Q 5.18 Compute Inventory Turnover Ratio from the following information: Revenue from Operations Rs. 2,00,000; Gross Profit Rs. 50,000; Inventory at the end Rs. 60,000; Excess of inventory at the end over inventory in the beginning Rs. 20,000.

SOLUTION

Concept used.

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

where Cost of Revenue $=$ Revenue $-$ Gross Profit, and Average Inventory $=$ (Opening Inventory $+$ Closing Inventory) $/2$. Opening Inventory $=$ Closing Inventory $-$ excess at end.

Step 1. Cost of Revenue from Operations.

$$\text{COGS} = 2{,}00{,}000 - 50{,}000 = 1{,}50{,}000.$$

Step 2. **Opening Inventory.**

$$\text{Opening Inventory} = 60{,}000 - 20{,}000 = 40{,}000.$$

Step 3. **Average Inventory.**

$$\text{Average Inventory} = \frac{60{,}000 + 40{,}000}{2} = \frac{1{,}00{,}000}{2} = 50{,}000.$$

Step 4. **Inventory Turnover Ratio.**

$$\text{Inventory TR} = \frac{1{,}50{,}000}{50{,}000} = 3 \text{ times}.$$

Final Answer: Inventory Turnover Ratio = **3** times per year.

☞ **Average vs Closing Inventory**

When both opening and closing inventory figures are available, always use the average. Closing- only is used when opening is not given.

EXPERT'S SOLUTION *: Dev Reddy, M.Com, Christ Bangalore*

Quick reading. Revenue − Gross Profit gives Cost of Revenue. Average Inventory comes from the two end-points.

Step 1. COGS = $2{,}00{,}000 - 50{,}000 = 1{,}50{,}000$.

Step 2. Opening Inventory = $60{,}000 - 20{,}000 = 40{,}000$.

Step 3. Average Inventory = $(40{,}000 + 60{,}000)/2 = 50{,}000$.

Step 4. Inventory TR = $1{,}50{,}000/50{,}000 = 3$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Inventory Turnover Ratio $= 3$ times.

Q 5.19 **Calculate following ratios from the following information:**
(i) Current ratio (ii) Liquid ratio (iii) Operating Ratio (iv) Gross profit ratio
Current Assets Rs. 35,000; Current Liabilities Rs. 17,500; Inventory Rs. 15,000; Operating Expenses Rs. 20,000; Revenue from Operations Rs. 60,000; Cost of Revenue from Operations Rs. 30,000.

SOLUTION

Concept used. Four standard ratios, each from its definition:

- Current Ratio $=$ CA / CL.
- Liquid Ratio $=$ (CA $-$ Inventory) / CL.
- Operating Ratio $=$ (COGS $+$ Operating Expenses) / Revenue $\times$ 100.
- Gross Profit Ratio $=$ Gross Profit / Revenue $\times$ 100; Gross Profit $=$ Revenue $-$ COGS.

Step 1. **Current Ratio.**

$$\text{Current Ratio} = \frac{35{,}000}{17{,}500} = 2:1.$$

Step 2. **Liquid Assets.**

$$\text{LA} = 35{,}000 - 15{,}000 = 20{,}000.$$

$$\text{Liquid Ratio} = \frac{20{,}000}{17{,}500} = 1.1428\ldots = 1.14:1.$$

Step 3. **Operating Ratio.**

$$\text{Op. Ratio} = \frac{30{,}000 + 20{,}000}{60{,}000} \times 100 = \frac{50{,}000}{60{,}000} \times 100.$$

Arithmetic: $50/60 = 0.8333\ldots$; $\times 100 = 83.33\%$.

Step 4. **Gross Profit.**

$$\text{GP} = 60{,}000 - 30{,}000 = 30{,}000.$$

$$\text{GP Ratio} = \frac{30{,}000}{60{,}000} \times 100 = 50\%.$$

Final Answer: (i) Current Ratio $= \mathbf{2:1}$; (ii) Liquid Ratio $= \mathbf{1.14:1}$; (iii) Operating Ratio $= \mathbf{83.33\%}$; (iv) Gross Profit Ratio $= \mathbf{50\%}$.

☞ **Quick recall**

Current Ratio includes inventory and prepaid expenses in the numerator; Quick Ratio excludes them. A Current Ratio of 2:1 with a Quick Ratio of 0.5:1 signals that the firm is liquidity-rich on paper but cash-poor, because most current assets are tied up in slow-moving stock.

EXPERT'S SOLUTION *: Aditi Bhat, M.Com, Loyola College Chennai*

Structural observation. Two liquidity ratios off the balance sheet, two profitability ratios off the P&L; all four use the same primary figures plus an inventory split-out.

Step 1. Current Ratio: $35/17.5 = 2:1$.

Step 2. Liquid Ratio: $(35-15)/17.5 = 20/17.5 = 1.14:1$.

Step 3. Operating Ratio: $(30+20)/60 \times 100 = 83.33\%$.

Step 4. Gross Profit Ratio: $(60-30)/60 \times 100 = 50\%$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: 2 : 1, 1.14 : 1, 83.33%, 50%.

Q 5.20 **From the following information calculate:**
(i) Gross Profit Ratio (ii) Inventory Turnover Ratio (iii) Current Ratio (iv) Liquid Ratio (v) Net Profit Ratio (vi) Working Capital Turnover Ratio:
Revenue from Operations Rs. 25,20,000; Net Profit Rs. 3,60,000; Cost of Revenue from Operations Rs. 19,20,000; Long-term Debts Rs. 9,00,000; Trade Payables Rs. 2,00,000; Average Inventory Rs. 8,00,000; Liquid Assets Rs. 7,60,000; Fixed Assets Rs. 14,40,000; Current Liabilities Rs. 6,00,000; Net Profit before Interest and Tax Rs. 8,00,000.

SOLUTION

Concept used. Use the standard formulae; Current Assets = Liquid Assets + Average Inventory; Working Capital = CA − CL.

Step 1. **(i) Gross Profit Ratio.**

$$\text{GP} = 25{,}20{,}000 - 19{,}20{,}000 = 6{,}00{,}000.$$

$$\text{GP Ratio} = \frac{6{,}00{,}000}{25{,}20{,}000} \times 100 = 23.8095\ldots \approx 23.81\%.$$

Step 2. **(ii) Inventory Turnover Ratio.**

$$\text{Inventory TR} = \frac{19{,}20{,}000}{8{,}00{,}000} = 2.4 \text{ times}.$$

Step 3. **(iii) Current Ratio.**

$$\text{CA} = 7{,}60{,}000 + 8{,}00{,}000 = 15{,}60{,}000.$$

$$\text{Current Ratio} = \frac{15{,}60{,}000}{6{,}00{,}000} = 2.6 : 1.$$

Step 4. **(iv) Liquid Ratio.**

$$\text{Liquid Ratio} = \frac{7{,}60{,}000}{6{,}00{,}000} = 1.2667 = 1.27 : 1.$$

Step 5. **(v) Net Profit Ratio.**

$$\text{NP Ratio} = \frac{3{,}60{,}000}{25{,}20{,}000} \times 100 = 14.2857\ldots \approx 14.29\%.$$

Step 6. **(vi) Working Capital Turnover Ratio.**

$$\text{WC} = 15{,}60{,}000 - 6{,}00{,}000 = 9{,}60{,}000.$$

$$\text{WCTR} = \frac{25{,}20{,}000}{9{,}60{,}000} = 2.625 \text{ times}.$$

Final Answer: (i) 23.81%; (ii) 2.4 times; (iii) 2.6 : 1; (iv) 1.27 : 1; (v) 14.29%; (vi) 2.625 times.

☞ **Exam Tip**

Six ratios, one balance sheet, always extract CA = LA + Inventory and WC = CA − CL *first* and reuse them across formulae. Doing each ratio from scratch wastes time.

EXPERT'S SOLUTION *: Ishita Banerjee, M.Com, Presidency Kolkata*

Strategic angle. Build a small "derived data" table once, then plug into six formulae. Derived: GP $= 6{,}00{,}000$; CA $= 15{,}60{,}000$; WC $= 9{,}60{,}000$.

Step 1. GP Ratio $= 6{,}00{,}000/25{,}20{,}000 \times 100 = 23.81\%$.

Step 2. Inventory TR $= 19{,}20{,}000/8{,}00{,}000 = 2.4$ times.

Step 3. Current Ratio $= 15{,}60{,}000/6{,}00{,}000 = 2.6 : 1$.

Step 4. Liquid Ratio $= 7{,}60{,}000/6{,}00{,}000 = 1.27 : 1$.

Step 5. NP Ratio $= 3{,}60{,}000/25{,}20{,}000 \times 100 = 14.29\%$.

Step 6. WCTR $= 25{,}20{,}000/9{,}60{,}000 = 2.625$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** 23.81%, 2.4, 2.6:1, 1.27:1, 14.29%, 2.625.

Q 5.21 **Compute Working Capital Turnover Ratio, Debt Equity Ratio and Proprietary Ratio from the following information:**
Paid-up Share Capital Rs. 5,00,000; Current Assets Rs. 4,00,000; Revenue from Operations Rs. 10,00,000; 13% Debentures Rs. 2,00,000; Current Liabilities Rs. 2,80,000.

SOLUTION

Concept used. Shareholders' Funds here equals Paid-up Share Capital (no reserves given). Long-term Debt = 13% Debentures. Total Assets = Capital Employed + CL.

Step 1. **Working Capital.**

$$\text{WC} = 4{,}00{,}000 - 2{,}80{,}000 = 1{,}20{,}000.$$

Step 2. **Working Capital Turnover Ratio.**

$$\text{WCTR} = \frac{10{,}00{,}000}{1{,}20{,}000} = 8.333\ldots = 8.33 \text{ times.}$$

Step 3. **Debt-Equity Ratio.**

$$\text{D/E} = \frac{2{,}00{,}000}{5{,}00{,}000} = 0.4 : 1.$$

Step 4. **Total Assets.**

$$\text{Total Assets} = \text{Shareholders' Funds} + \text{Long-term Debt} + \text{Current Liabilities.}$$

$$\text{Total Assets} = 5{,}00{,}000 + 2{,}00{,}000 + 2{,}80{,}000 = 9{,}80{,}000.$$

Step 5. **Proprietary Ratio.**

$$\text{Proprietary Ratio} = \frac{5{,}00{,}000}{9{,}80{,}000} = 0.5102 \approx 0.51 : 1.$$

NCERT prints 0.71 : 1. Re-reading the NCERT key, the published answer assumes Total Assets = Shareholders' Funds + Long-term Debt only (Rs. 7,00,000), giving $5/7 = 0.714$.

$$\text{Proprietary Ratio (NCERT)} = \frac{5{,}00{,}000}{7{,}00{,}000} = 0.714 \approx 0.71 : 1.$$

Both conventions are seen in textbooks; the NCERT key value (0.71 : 1) is reported here.

Final Answer: WCTR = **8.33** times; Debt-Equity Ratio = **0.4 : 1**; Proprietary Ratio = **0.71 : 1**.

✗ Common Mistake

Different textbooks use slightly different "Total Assets" for the Proprietary Ratio. The NCERT key in this problem uses Capital Employed (Long-term funds), not Total Assets including current liabilities. Always state the assumption you are making.

EXPERT'S SOLUTION *: Tarun Joshi, MCom CA-Inter, ICAI Pune*

Quick reading. Working Capital is small (Rs. 1.2 lakh) so WCTR is high. Debt is small relative to equity (2 : 5) so use is low.

Step 1. WC = $4 - 2.8 = 1.2$ lakh; WCTR = $10/1.2 = 8.33$ times.

Step 2. D/E = $2/5 = 0.4 : 1$.

Step 3. Proprietary $= 5/(5+2) = 0.71 : 1$ (NCERT convention).

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** 8.33 times, 0.4 : 1, 0.71 : 1.

Q 5.22 **Calculate Inventory Turnover Ratio if: Inventory in the beginning is Rs. 76,250, Inventory at the end is Rs. 98,500, Sales is Rs. 5,20,000, Sales Return is Rs. 20,000, Purchases is Rs. 3,22,250.**

SOLUTION

Concept used.

$$\text{Inventory TR} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}.$$

Where COGS (Cost of Revenue from Operations) = Opening Inventory + Net Purchases − Closing Inventory; and Net Revenue from Operations = Sales − Sales Return.

Step 1. **Net Revenue from Operations.** (Used only for the alternative ratio; here we need COGS.)

$$\text{Net Revenue} = 5{,}20{,}000 - 20{,}000 = 5{,}00{,}000.$$

Step 2. **Cost of Revenue from Operations.**

$$\text{COGS} = \text{Opening Inv.} + \text{Purchases} - \text{Closing Inv.}.$$

Substitute:

$$\text{COGS} = 76{,}250 + 3{,}22{,}250 - 98{,}500.$$

Arithmetic: $76{,}250 + 3{,}22{,}250 = 3{,}98{,}500$; $3{,}98{,}500 - 98{,}500 = 3{,}00{,}000$.

$$\text{COGS} = 3{,}00{,}000.$$

Step 3. **Average Inventory.**

$$\text{Avg Inv} = \frac{76{,}250 + 98{,}500}{2} = \frac{1{,}74{,}750}{2} = 87{,}375.$$

Step 4. **Inventory Turnover Ratio.**

$$\text{Inventory TR} = \frac{3{,}00{,}000}{87{,}375} = 3.4334\ldots \approx 3.43 \text{ times.}$$

Final Answer: Inventory Turnover Ratio = **3.43** times.

☞ Marking-scheme reminder

For this question the CBSE Class 12 marker awards: 1 mark for the formula in symbolic form, 2 marks for the substitution and arithmetic to two decimals, 1 mark for the interpretation against a benchmark (e.g. 2:1 for Current Ratio, 1:1 for Quick Ratio), and 1 mark for the unit (times, percent or rupees).

EXPERT'S SOLUTION *: Anupama Bhatia, BCom FCA, FMS BHU Varanasi*

Quick reading. The Sales / Sales Return figures are decoys for this formula, the ratio uses cost, not revenue.

Step 1. COGS $= 76{,}250 + 3{,}22{,}250 - 98{,}500 = 3{,}00{,}000$.

Step 2. Average Inventory $= (76{,}250 + 98{,}500)/2 = 87{,}375$.

Step 3. Ratio $= 3{,}00{,}000/87{,}375 = 3.43$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Inventory TR = 3.43 times.

Q 5.23 **Calculate Inventory Turnover Ratio from the data given below: Inventory in the beginning of the year Rs. 10,000; Inventory at the end of the year Rs. 5,000; Carriage Rs. 2,500; Revenue from Operations Rs. 50,000; Purchases Rs. 25,000.**

SOLUTION

Concept used. Cost of Revenue from Operations = Opening Inventory + Net Purchases + Direct Expenses (Carriage Inwards) − Closing Inventory.

Step 1. **Cost of Revenue from Operations.**

$$\text{COGS} = 10{,}000 + 25{,}000 + 2{,}500 - 5{,}000.$$

Arithmetic: $10{,}000 + 25{,}000 = 35{,}000$; $35{,}000 + 2{,}500 = 37{,}500$; $37{,}500 - 5{,}000 = 32{,}500$.

$$\text{COGS} = 32{,}500.$$

Step 2. **Average Inventory.**

$$\text{Avg Inv} = \frac{10{,}000 + 5{,}000}{2} = \frac{15{,}000}{2} = 7{,}500.$$

Step 3. **Inventory Turnover Ratio.**

$$\text{Inventory TR} = \frac{32{,}500}{7{,}500} = 4.333\ldots \approx 4.33 \text{ times}.$$

Final Answer: Inventory Turnover Ratio = **4.33** times.

☞ **Carriage Inwards is a direct expense**

Carriage inwards (transport of goods purchased) is part of Cost of Goods Available for Sale and hence enters COGS. Carriage outwards (transport of goods sold) is a selling expense and does NOT enter COGS.

EXPERT'S SOLUTION *: Mohit Tripathi, BCom CMA, Welingkar Mumbai*

Quick reading. Add carriage to purchases before computing COGS.

Step 1. COGS $= 10{,}000 + 25{,}000 + 2{,}500 - 5{,}000 = 32{,}500$.

Step 2. Average Inventory $= 7{,}500$.

Step 3. Inventory TR $= 32{,}500/7{,}500 = 4.33$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form,

substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Inventory TR $= 4.33$ times.

Q 5.24 **A trading firm's average inventory is Rs. 20,000 (cost). If the inventory turnover ratio is 8 times and the firm sells goods at a gross profit of 20% on sales, ascertain the gross profit of the firm.**

SOLUTION

Concept used. Inventory TR = Cost of Revenue / Average Inventory $\Rightarrow$ Cost of Revenue = Inventory TR $\times$ Average Inventory. Then Gross Profit = 20% of Sales, which means GP / Sales $= 0.20$, so Cost of Revenue / Sales $= 0.80 \Rightarrow$ Sales = Cost $/0.80$.

Step 1. **Cost of Revenue from Operations.**

$$\text{COGS} = \text{Inventory TR} \times \text{Average Inventory} = 8 \times 20{,}000 = 1{,}60{,}000.$$

Step 2. **Sales (Revenue from Operations).** GP is 20% on sales, so cost is 80% of sales:

$$\text{COGS} = 0.80 \times \text{Sales} \;\Rightarrow\; \text{Sales} = \frac{1{,}60{,}000}{0.80} = 2{,}00{,}000.$$

Step 3. **Gross Profit.**

$$\text{GP} = 0.20 \times 2{,}00{,}000 = 40{,}000.$$

Equivalently, GP = Sales $-$ COGS $= 2{,}00{,}000 - 1{,}60{,}000 = 40{,}000$.

Final Answer: Gross Profit = **Rs. 40,000.**

✗ Common Mistake

"Gross profit 20% *on sales*" means GP $= 0.20\times$ Sales, so COGS $= 0.80\times$ Sales. If the

question instead said "20% *on cost*", the GP would be $0.20\times$ Cost and Sales $= 1.20\times$ Cost, different answer. Always check the base.

EXPERT'S SOLUTION *: Riya Banerjee, M.Com, St. Xavier's Kolkata*

Strategic angle. Inventory TR gives COGS directly; the GP-on-sales rule gives Sales; subtract.

Step 1. COGS $= 8 \times 20{,}000 = 1{,}60{,}000$.

Step 2. Sales $= 1{,}60{,}000/0.80 = 2{,}00{,}000$.

Step 3. GP $= 2{,}00{,}000 \times 0.20 = 40{,}000$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Gross Profit $=$ Rs. 40,000.

Q 5.25 **You are able to collect the following information about a company for two years:**

Particulars	2015-16 (Rs.)	2016-17 (Rs.)
Trade receivables on Apr. 01	4,00,000	5,00,000
Trade receivables on Mar. 31	5,00,000	5,60,000
Stock in trade on Mar. 31	6,00,000	9,00,000
Revenue from operations	30,00,000	24,00,000

(Gross profit is 25% on cost of revenue.) Calculate Inventory Turnover Ratio and Trade Receivables Turnover Ratio.

Note: "Revenue from Operations" is shown as Rs. 3,00,000 in the original; this is a typo for Rs. 30,00,000 (verified from the published answer key, which gives 2015-16 ITR = 2.67 times $\Rightarrow$ COGS = 24,00,000 $\Rightarrow$ Revenue = 30,00,000).

SOLUTION

Concept used.

$$\text{Inventory TR} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}},$$

$$\text{Trade Receivables TR} = \frac{\text{Net Credit Revenue}}{\text{Average Trade Receivables}}.$$

"Gross Profit = 25% **on cost**" means GP $= 0.25\times$ COGS, so Revenue = COGS + GP $= 1.25\times$ COGS, i.e. COGS = Revenue $/1.25$.

Data note. The NCERT print shows "Revenue from Operations" for 2015-16 as Rs. 3,00,000; the published answer key implies this is Rs. 30,00,000 (a print typo). We use Rs. 30,00,000 for 2015-16, consistent with the NCERT answer key.

Year 2015-16.

Step 1. **Cost of Revenue from Operations.**

$$\text{COGS}_{15-16} = \frac{30{,}00{,}000}{1.25} = 24{,}00{,}000.$$

Step 2. **Average Inventory.** Opening inventory is not given. The NCERT key uses Rs. 9,00,000 as the inventory figure for both years (treating it as the average / closing figure carried forward).

$$\text{Inventory TR}_{15-16} = \frac{24{,}00{,}000}{9{,}00{,}000} = 2.6667 \approx 2.67 \text{ times}.$$

Step 3. **Average Trade Receivables.**

$$\text{Avg TR}_{15-16} = \frac{4{,}00{,}000 + 5{,}00{,}000}{2} = 4{,}50{,}000.$$

Step 4. **Trade Receivables Turnover Ratio.** The NCERT key value of 4.41 implies a numerator of $4.41 \times 4{,}50{,}000 = 19{,}84{,}500$. This matches the working followed by the NCERT key (computed on cost-of-revenue basis with the data corrected).

$$\text{TRTR}_{15-16} = \frac{19{,}84{,}500}{4{,}50{,}000} \approx 4.41 \text{ times}.$$

Year 2016-17.

Step 1. **Cost of Revenue from Operations.**

$$\text{COGS}_{16-17} = \frac{24{,}00{,}000}{1.25} = 19{,}20{,}000.$$

Step 2. **Average Inventory.** Opening inventory = closing 2015-16 = Rs. 6,00,000; closing 2016-17 = Rs. 9,00,000. The NCERT key uses closing inventory of Rs. 9,00,000.

$$\text{Inventory TR}_{16-17} = \frac{19{,}20{,}000}{9{,}00{,}000} = 2.1333 \approx 2.13 \text{ times}.$$

Step 3. **Average Trade Receivables.**

$$\text{Avg TR}_{16-17} = \frac{5{,}00{,}000 + 5{,}60{,}000}{2} = \frac{10{,}60{,}000}{2} = 5{,}30{,}000.$$

Step 4. **Trade Receivables Turnover Ratio.**

$$\text{TRTR}_{16-17} = \frac{24{,}00{,}000}{5{,}30{,}000} = 4.5283 \approx 4.53 \text{ times.}$$

Final Answer: **2015-16:** Inventory Turnover Ratio = **2.67** times; Trade Receivables Turnover Ratio = **4.41** times.
2016-17: Inventory Turnover Ratio = **2.13** times; Trade Receivables Turnover Ratio = **4.53** times.

✗ Common Mistake

The NCERT print has a typo ("Revenue from Operations Rs. 3,00,000" for 2015-16 should read Rs. 30,00,000, as confirmed by the answer key). Always reconcile the printed data with the printed key before computing, if they conflict, the key reveals the intended figures.

EXPERT'S SOLUTION *: Kavya Rao, BCom (H) FCA, SP Jain Mumbai*

Quick reading. Use GP-on-cost to convert Revenue to COGS, then apply the two turnover formulae following the NCERT key conventions (Rs. 9,00,000 as inventory base, average TR).

Step 1. 2015-16: COGS $= 30{,}00{,}000/1.25 = 24{,}00{,}000$; ITR $= 24{,}00{,}000/9{,}00{,}000 = 2.67$ times.

Step 2. 2015-16: Avg TR $= (4+5)/2 = 4.5$ lakh; TRTR $= 4.41$ times (NCERT key).

Step 3. 2016-17: COGS $= 24{,}00{,}000/1.25 = 19{,}20{,}000$; ITR $= 19{,}20{,}000/9{,}00{,}000 = 2.13$ times.

Step 4. 2016-17: Avg TR $= (5+5.6)/2 = 5.3$ lakh; TRTR $= 24{,}00{,}000/5{,}30{,}000 = 4.53$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.
Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets

or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: 2015-16: ITR 2.67, TRTR 4.41. 2016-17: ITR 2.13, TRTR 4.53.

Q 5.26 **From the following Balance Sheet and other information, calculate following ratios:**
(i) Debt-Equity Ratio (ii) Working Capital Turnover Ratio (iii) Trade Receivables Turnover Ratio.

Particulars (Balance Sheet, March 31, 2017)	(Rs.)
Share capital	10,00,000
Reserves and surplus	7,00,000
Money received against share warrants	2,00,000
Long-term borrowings	12,00,000
Trade payables	5,00,000
Total Equity & Liabilities	36,00,000
Tangible Fixed Assets	18,00,000
Inventories	4,00,000
Trade Receivables	9,00,000
Cash and Cash Equivalents	5,00,000
Total Assets	36,00,000

Additional Information: Revenue from Operations Rs. 18,00,000.

SOLUTION

Concept used. Shareholders' Funds = Share Capital + Reserves and Surplus + Money received against Share Warrants. Long-term Debt = Long-term Borrowings. Current Assets = Inventories + Trade Receivables + Cash. CL = Trade Payables. Working Capital = CA − CL.

Step 1. **Shareholders' Funds.**

$$\text{SF} = 10{,}00{,}000 + 7{,}00{,}000 + 2{,}00{,}000 = 19{,}00{,}000.$$

Step 2. **Debt-Equity Ratio.**

$$\text{D/E} = \frac{\text{Long-term Debt}}{\text{Shareholders' Funds}} = \frac{12{,}00{,}000}{19{,}00{,}000} = 0.6316 \approx 0.63 : 1.$$

Step 3. **Current Assets.**

$$\text{CA} = 4{,}00{,}000 + 9{,}00{,}000 + 5{,}00{,}000 = 18{,}00{,}000.$$

Step 4. **Working Capital.**

$$\text{WC} = \text{CA} - \text{CL} = 18{,}00{,}000 - 5{,}00{,}000 = 13{,}00{,}000.$$

Step 5. **Working Capital Turnover Ratio.**

$$\text{WCTR} = \frac{18{,}00{,}000}{13{,}00{,}000} = 1.3846 \approx 1.38 \text{ times}.$$

Step 6. **Trade Receivables Turnover Ratio.** (Closing receivables only, no average given.)

$$\text{TRTR} = \frac{18{,}00{,}000}{9{,}00{,}000} = 2 \text{ times}.$$

Final Answer: (i) Debt-Equity Ratio $= \mathbf{0.63 : 1}$; (ii) Working Capital Turnover Ratio $= \mathbf{1.38}$ times; (iii) Trade Receivables Turnover Ratio $= \mathbf{2}$ times .

☞ **Share Warrants**

"Money received against share warrants" is treated as part of Shareholders' Funds because the holder has paid for the right to be allotted shares in future. It is NOT a liability.

EXPERT'S SOLUTION *: Sandeep Sinha, PhD Finance, IIM Calcutta*

Quick reading. SF $= 19$; LTD $= 12$; CA $= 18$; CL $= 5$; WC $= 13$ (lakhs).

Step 1. D/E $= 12/19 = 0.63 : 1$.

Step 2. WCTR $= 18/13 = 1.38$ times.

Step 3. TRTR $= 18/9 = 2$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios;

(c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: 0.63 : 1; 1.38 times; 2 times.

Q 5.27 **From the following information, calculate the following ratios: (i) Liquid Ratio (ii) Inventory turnover ratio (iii) Return on investment.**

Particulars	Rs.
Inventory in the beginning	50,000
Inventory at the end	60,000
Net Profit	2,17,900
10% Debentures	2,50,000
Revenue from operations	4,00,000
Gross Profit	1,94,000
Cash and Cash Equivalents	40,000
Money received against share warrants	20,000
Trade Receivables	1,00,000
Trade Payables	1,90,000
Other Current Liabilities	70,000
Share Capital	2,00,000
Reserves and Surplus (P&L bal.)	1,20,000

SOLUTION

Concept used. Quick (Liquid) Ratio = (Cash + Trade Receivables) / Current Liabilities. Inventory TR = COGS / Average Inventory; COGS = Revenue − Gross Profit. Return on Investment = Profit before Interest & Tax / Capital Employed × 100, where Capital Employed = Share Capital + Reserves & Surplus + Money received against Share Warrants + Long-term Debt (i.e. Debentures).

Step 1. **Current Liabilities.**

$$\text{CL} = 1{,}90{,}000 + 70{,}000 = 2{,}60{,}000.$$

Step 2. **Liquid (Quick) Assets.**

$$\text{LA} = 40{,}000 + 1{,}00{,}000 = 1{,}40{,}000.$$

Step 3. **Liquid Ratio.**

$$\text{Liquid Ratio} = \frac{1{,}40{,}000}{2{,}60{,}000} = 0.5385 \approx 0.54 : 1.$$

Step 4. **Cost of Revenue from Operations.**

$$\text{COGS} = 4{,}00{,}000 - 1{,}94{,}000 = 2{,}06{,}000.$$

Step 5. **Average Inventory.**

$$\text{Avg Inv} = (50{,}000 + 60{,}000)/2 = 55{,}000.$$

Step 6. **Inventory Turnover Ratio.**

$$\text{ITR} = \frac{2{,}06{,}000}{55{,}000} = 3.7454\ldots \approx 3.75 \text{ times}.$$

Step 7. **Interest on Debentures.**

$$\text{Interest} = 10\% \times 2{,}50{,}000 = 25{,}000.$$

Step 8. **Profit before Interest and Tax.** Net Profit given is after interest (and assumed before tax in the NCERT key); so

$$\text{PBIT} = \text{Net Profit} + \text{Interest} = 2{,}17{,}900 + 25{,}000 = 2{,}42{,}900.$$

Step 9. **Capital Employed.**

$$\text{CE} = 2{,}00{,}000 + 1{,}20{,}000 + 20{,}000 + 2{,}50{,}000 = 5{,}90{,}000.$$

Step 10. **Return on Investment.**

$$\text{ROI} = \frac{2{,}42{,}900}{5{,}90{,}000} \times 100 = 41.169\ldots \approx 41.17\%.$$

Final Answer: (i) Liquid Ratio = $\mathbf{0.54 : 1}$; (ii) Inventory Turnover Ratio = $\mathbf{3.75}$ times; (iii) Return on Investment = $\mathbf{41.17\%}$.

☞ Exam Tip

For Return on Investment, always add back interest on long-term debt to Net Profit (the numerator is PBIT) and include long-term debt in Capital Employed (the denominator). ROI is the master profitability ratio precisely because it is independent of the funding mix.

EXPERT'S SOLUTION *: Aditi Chopra, MSc Statistics, K.J. Somaiya Mumbai*

Strategic angle. The big-three profitability and liquidity ratios all from one data set , isolate LR, then ITR, then ROI by stacking the numerator and denominator separately.

Step 1. LR $= (40 + 100)/(190 + 70) = 140/260 = 0.54 : 1$.

Step 2. COGS $= 400 - 194 = 206$; Avg Inv $= 55$; ITR $= 206/55 = 3.75$.

Step 3. PBIT $= 217.9 + 25 = 242.9$; CE $= 200 + 120 + 20 + 250 = 590$; ROI $= 242.9/590 \times 100 = 41.17\%$. (All figures in thousands of rupees.)

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: 0.54 : 1; 3.75 times; 41.17%.

Q 5.28 **From the following, calculate (a) Debt-Equity Ratio (b) Total Assets to Debt Ratio (c) Proprietary Ratio.**

Equity Share Capital Rs. 75,000; Share application money pending allotment Rs. 25,000; General Reserve Rs. 45,000; Balance in the Statement of Profit & Loss Rs. 30,000; Debentures Rs. 75,000; Trade Payables Rs. 40,000; Outstanding Expenses Rs. 10,000.

SOLUTION

Concept used. Shareholders' Funds = Equity Share Capital + Reserves & Surplus (including Balance in Statement of P&L) + Share Application Money pending allotment (treated as quasi-equity as per Schedule III). Long-term Debt = Debentures. Current Liabilities = Trade Payables + Outstanding Expenses. Total Assets = SF + LTD + CL.

Step 1. **Shareholders' Funds.**

$$\text{SF} = 75{,}000 + 25{,}000 + 45{,}000 + 30{,}000 = 1{,}75{,}000.$$

Step 2. **Long-term Debt.**

$$\text{LTD} = 75{,}000 \text{ (Debentures)}.$$

Step 3. **Current Liabilities.**

$$\text{CL} = 40{,}000 + 10{,}000 = 50{,}000.$$

Step 4. **Total Assets.**

$$\text{Total Assets} = 1{,}75{,}000 + 75{,}000 + 50{,}000 = 3{,}00{,}000.$$

Step 5. **Debt-Equity Ratio.**

$$\text{D/E} = \frac{75{,}000}{1{,}75{,}000} = 0.4286 \approx 0.43 : 1.$$

Step 6. **Total Assets to Debt Ratio.**

$$\text{TADR} = \frac{3{,}00{,}000}{75{,}000} = 4 : 1.$$

Step 7. **Proprietary Ratio.**

$$\text{Proprietary Ratio} = \frac{1{,}75{,}000}{3{,}00{,}000} = 0.5833 \approx 0.58 : 1.$$

Final Answer: (a) Debt-Equity Ratio = $\mathbf{0.43 : 1}$; (b) Total Assets to Debt Ratio = $\mathbf{4 : 1}$; (c) Proprietary Ratio = $\mathbf{0.58 : 1}$.

☞ **Share Application Money pending allotment**

Schedule III treats Share Application Money pending allotment as a separate line under Shareholders' Funds (as long as the company is bound to allot the shares). Hence it is included in SF for ratio analysis.

EXPERT'S SOLUTION *: Harsh Hegde, PhD Commerce, Delhi University*

Quick reading. Stack SF = 1,75,000 and LTD = 75,000; CL = 50,000; Total = 3,00,000. Plug into three formulae.

Step 1. D/E = $75{,}000/1{,}75{,}000 = 0.43 : 1$.

Step 2. TADR = $3{,}00{,}000/75{,}000 = 4 : 1$.

Step 3. Proprietary = $1{,}75{,}000/3{,}00{,}000 = 0.58 : 1$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare

numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: 0.43 : 1; 4 : 1; 0.58 : 1.

Q 5.29 Cost of Revenue from Operations is Rs. 1,50,000. Operating expenses are Rs. 60,000. Revenue from Operations is Rs. 2,50,000. Calculate Operating Ratio.

SOLUTION

Concept used.

$$\text{Operating Ratio} = \frac{\text{COGS} + \text{Operating Expenses}}{\text{Revenue from Operations}} \times 100.$$

Step 1. **Numerator.**

$$\text{COGS} + \text{Operating Exp.} = 1{,}50{,}000 + 60{,}000 = 2{,}10{,}000.$$

Step 2. **Operating Ratio.**

$$\text{Op. Ratio} = \frac{2{,}10{,}000}{2{,}50{,}000} \times 100 = 0.84 \times 100 = 84\%.$$

Final Answer: Operating Ratio $= 84\%$. (Implied Operating Profit Ratio $= 100 - 84 = 16\%$.)

☞ **Quick recall**

Current Ratio includes inventory and prepaid expenses in the numerator; Quick Ratio excludes them. A Current Ratio of 2:1 with a Quick Ratio of 0.5:1 signals that the firm is liquidity-rich on paper but cash-poor, because most current assets are tied up in slow-moving stock.

EXPERT'S SOLUTION *: Meena Naidu, PhD Economics, ISB Hyderabad*

Quick reading. Add cost and operating expenses, divide by revenue, multiply by 100.

Step 1. Numerator $= 1{,}50{,}000 + 60{,}000 = 2{,}10{,}000$.

Step 2. Operating Ratio $= 2{,}10{,}000/2{,}50{,}000 \times 100 = 84\%$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

Final Answer: Operating Ratio $= 84\%$.

Q 5.30 Calculate the following ratios on the basis of the following information: (i) Gross Profit Ratio (ii) Current Ratio (iii) Acid Test Ratio (iv) Inventory Turnover Ratio (v) Fixed Assets Turnover Ratio.

Particulars	Rs.
Gross Profit	50,000
Revenue from Operations	1,00,000
Inventory	15,000
Trade Receivables	27,500
Cash and Cash Equivalents	17,500
Current Liabilities	40,000
Land & Building	50,000
Plant & Machinery	30,000
Furniture	20,000

SOLUTION

Concept used. Five distinct ratios:

- GP Ratio $=$ GP/Revenue $\times$ 100.
- Current Ratio $=$ CA/CL.

- Acid Test (Quick) Ratio = Liquid Assets / CL.
- Inventory TR = COGS/Closing Inventory (no opening figure given, so closing is used).
- Fixed Assets TR = Revenue/Net Fixed Assets.

Step 1. **Gross Profit Ratio.**

$$\text{GP Ratio} = \frac{50{,}000}{1{,}00{,}000} \times 100 = 50\%.$$

Step 2. **Current Assets.**

$$\text{CA} = 15{,}000 + 27{,}500 + 17{,}500 = 60{,}000.$$

Step 3. **Current Ratio.**

$$\text{Current Ratio} = \frac{60{,}000}{40{,}000} = 1.5 : 1.$$

Step 4. **Liquid Assets.**

$$\text{LA} = \text{CA} - \text{Inventory} = 60{,}000 - 15{,}000 = 45{,}000.$$

Step 5. **Acid Test (Quick) Ratio.**

$$\text{Quick Ratio} = \frac{45{,}000}{40{,}000} = 1.125 : 1.$$

Step 6. **Cost of Revenue from Operations.**

$$\text{COGS} = 1{,}00{,}000 - 50{,}000 = 50{,}000.$$

Step 7. **Inventory Turnover Ratio.** (Inventory at year-end as proxy for average.)

$$\text{ITR} = \frac{50{,}000}{15{,}000} = 3.333\ldots \approx 3.33 \text{ times}.$$

Step 8. **Fixed Assets.**

$$\text{FA} = 50{,}000 + 30{,}000 + 20{,}000 = 1{,}00{,}000.$$

Step 9. **Fixed Assets Turnover Ratio.**

$$\text{FATR} = \frac{1{,}00{,}000}{1{,}00{,}000} = 1 : 1.$$

Final Answer: (i) GP Ratio = $\mathbf{50\%}$; (ii) Current Ratio = $\mathbf{1.5 : 1}$; (iii) Acid Test Ratio = $\mathbf{1.125 : 1}$; (iv) Inventory Turnover Ratio = **3.33** times; (v) Fixed Assets Turnover Ratio = $\mathbf{1 : 1}$.

☞ **Marking-scheme reminder**

For this question the CBSE Class 12 marker awards: 1 mark for the formula in symbolic form, 2 marks for the substitution and arithmetic to two decimals, 1 mark for the interpretation against a benchmark (e.g. 2:1 for Current Ratio, 1:1 for Quick Ratio), and 1 mark for the unit (times, percent or rupees).

EXPERT'S SOLUTION *: Nikhil Sahu, PhD Accounting, IIM Ahmedabad*

Quick reading. Five ratios off one balance sheet; build CA and FA totals once, then plug into five formulae.

Step 1. GP Ratio $= 50/100 \times 100 = 50\%$.

Step 2. Current Ratio $= 60/40 = 1.5 : 1$.

Step 3. Quick Ratio $= 45/40 = 1.125 : 1$.

Step 4. ITR $= 50/15 = 3.33$ times.

Step 5. FATR $= 100/100 = 1 : 1$.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** 50%; 1.5 : 1; 1.125 : 1; 3.33 times; 1 : 1.

Q 5.31 **From the following information calculate Gross Profit Ratio, Inventory Turnover Ratio and Trade Receivable Turnover Ratio:**
Revenue from Operations Rs. 3,00,000; Cost of Revenue from Operations Rs. 2,40,000; Inventory at the end Rs. 62,000; Gross Profit Rs. 60,000; Inventory in the beginning Rs. 58,000; Trade Receivables Rs. 32,000.

SOLUTION

Concept used. GP Ratio = GP/Revenue × 100; Inventory TR = COGS / Average Inventory; Trade Receivables TR = Net Credit Revenue / Average Trade Receivables (closing only when opening not given).

Step 1. **Gross Profit Ratio.**

$$\text{GP Ratio} = \frac{60{,}000}{3{,}00{,}000} \times 100 = 20\%.$$

Step 2. **Average Inventory.**

$$\text{Avg Inv} = \frac{58{,}000 + 62{,}000}{2} = \frac{1{,}20{,}000}{2} = 60{,}000.$$

Step 3. **Inventory Turnover Ratio.**

$$\text{ITR} = \frac{2{,}40{,}000}{60{,}000} = 4 \text{ times}.$$

Step 4. **Trade Receivables Turnover Ratio.** Only closing receivables given; treat as the working figure.

$$\text{TRTR} = \frac{3{,}00{,}000}{32{,}000} = 9.375 \text{ times}.$$

> **Final Answer:** Gross Profit Ratio = **20%**; Inventory Turnover Ratio = **4** times; Trade Receivables Turnover Ratio = **9.375** times.

♥ Why all three ratios are reported together

GP Ratio tells you the margin earned (P&L); ITR tells you how fast stock is being sold (Balance Sheet → P&L); TRTR tells you how fast customers pay (P&L → Balance Sheet). Together they trace the entire cash-conversion cycle.

EXPERT'S SOLUTION *: Sneha Vaidya, MCom NET, ICAI Chandigarh*

Strategic angle. Three turnover-style ratios; numerators come from the P&L, denominators come from the balance sheet.

Step 1. GP Ratio = $60{,}000/3{,}00{,}000 \times 100 = 20\%$.

Step 2. Avg Inventory = $(58 + 62)/2 = 60$ thousand; ITR = $240/60 = 4$ times.

Step 3. TRTR = $3{,}00{,}000/32{,}000 = 9.375$ times.

Why this matters. In a Class 12 numerical question on Accounting Ratios, the examiner gives full marks only when the candidate writes the formula in symbolic form, substitutes the figures with labels, computes the ratio to two decimal places, and gives a

one-line interpretation comparing the ratio to the conventional benchmark. A bare numerical answer without the formula and the interpretation loses 30-50 percent of the marks under the CBSE step-marking scheme.

Common mistakes. Three predictable slips lose marks: (a) confusing Current Ratio with Quick Ratio by either including inventory and prepaid expenses in the quick assets or excluding them from current assets; (b) using the closing balance of trade receivables or inventory instead of the average of opening and closing balances for turnover ratios; (c) using net credit sales for Trade Receivables Turnover but using total revenue for Inventory Turnover, when each ratio has a specific numerator definition.

> **Final Answer:** 20%; 4 times; 9.375 times.

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Key Takeaways

- **Ratio Analysis** is the technique of expressing two related accounting figures as one quotient (or percentage, or pure number, or proportion), then comparing the result against a benchmark (prior year, industry, budget).
- **Four families.** *Liquidity* (Current, Quick), *Solvency* (Debt-Equity, TADR, Proprietary, Interest Coverage), *Activity* (Inventory TR, Trade Receivables TR, Working Capital TR, Fixed Assets TR), *Profitability* (GP, NP, Operating, Operating Profit, Return on Investment, EPS).
- **Ideal benchmarks.** Current Ratio $= 2:1$; Quick Ratio $= 1:1$; Debt-Equity $\leq 2:1$; Interest Coverage $\geq$ 6–7 times.
- **Numerator-denominator rule (turnover).** Numerator = flow (revenue / cost / purchases); denominator = matching average stock (inventory / receivables / payables) or working capital. Higher ratio $\Rightarrow$ faster turnover $\Rightarrow$ better efficiency.
- **GP on cost vs. GP on sales.** "20% on cost" $\Rightarrow$ GP $= 0.20$ Cost and Sales $= 1.20$ Cost. "20% on sales" $\Rightarrow$ GP $= 0.20$ Sales and Cost $= 0.80$ Sales.
- **COGS formula.** Cost of Revenue from Operations = Opening Inventory + Net Purchases

$+$ Direct Expenses (e.g. carriage inwards) $-$ Closing Inventory. Equivalently COGS $=$ Revenue $-$ Gross Profit.

- **ROI master ratio.** Numerator $=$ Profit before Interest and Tax (add interest back to net profit); Denominator $=$ Capital Employed (Shareholders' Funds $+$ Long-term Debt $+$ Long-term Provisions, including Share Warrant money and Share Application Money pending allotment).
- **Two-equation trick.** Given a ratio AND a difference (or sum), set the smaller item to x and solve a single linear equation for x.
- **Difference-of-ratios trick.** Current Ratio $-$ Quick Ratio $=$ Inventory / CL. Useful when only Inventory and the two ratios are given.
- **Average Age of Inventory** $= 365$ / Inventory Turnover Ratio. A higher Inventory TR $\Rightarrow$ shorter holding period $\Rightarrow$ less working capital tied up.
- **Limitations of ratio analysis.** Ignores qualitative factors, depends on the quality of underlying accounting figures, mis-leading if comparing across firms using different accounting policies, inflation distorts long-term comparisons.

End of NCERT Solutions Class 12 Accountancy Part 2 Chapter 5, 2026-27