Profitability Ratios

- A company's ability to generate profits from its operations
- A company's return on investment in inventory and other assets
- Profitability ratios can be used to judge whether companies are making enough operational profit from their assets
PROFITABILITY RATIOS

1. Gross Profit Ratio
2. Operating Ratio
3. Operating Profit Ratio
4. Net Profit Ratio
5. Return On Investment
GROSS PROFIT RATIO

Gross Profit ratio = Gross Profit/ Net sales

Cost of goods sold = Opening stock + Purchases + Direct expenses – Closing stock

Net sales = Gross sales minus any Returns or Refunds.

Gross Profit = Net sales - Cost of goods sold
Operating Ratio = \frac{(\text{Cost of Goods Sold} + \text{Operating Expenses} - \text{Operating Income}) \times 100}{\text{Net Sales}}

Relationship between operating costs and net sales
Operating cost includes “direct cost of goods sold, administrative, selling and distribution expenses, interest on working capital loans, discounts, bad debts”. It excludes incomes and expenses, which have no relation with production or sales.
Operating Profit Ratio = (Operating Profit /Revenue from Operations) * 100

Operating profit = Gross profit - Other Operating Expenses + Other Operating Incomes

Or

Net profit (before tax) + Non-operating expenses/ losses - Non-Operating Incomes

Other Operating Expenses = Employee Benefit Expenses + Depreciation and Amortization Expenses + Other expenses (i.e. Office and Administration Expenses + Selling and Distribution Expenses + Discount + Bad debts + Interest on short term loans)

Other Operating Income = Trading commission received, Cash discount received

Non Operating Expenses = Loss on sale of non current assets, loss from fire, income tax, charity and donations, finance charges relating to interest on long term debt, interest on debentures.
Operating Ratio and Operating Profit Ratio are inter-related. Total of both these ratios will be 100. A rise in ‘Operating Ratio’ will lead to a similar amount of decline in ‘Operating Profit Ratio’ and vice versa.
Net Profit Ratio = (Net Profit after Tax/ Net sales) * 100

Net profit = Gross profit - Indirect Expenses & Losses + Other incomes - Tax

Indirect expenses & losses = Office exp. + Selling exp. + Interest on Long term Borrowings + Accidental Losses
Also known as ‘Rate of Return’ or ‘Return on Capital Employed’ or ‘Yield on Capital’

Return on Investment = (Net Profit before Interest, Tax and Dividends)/Capital Employed * 100

Liabilities side approach:
Capital Employed = Shareholder’s Funds + Non-Current Liabilities – Fictitious Assets – Non Trading Assets (long term investments)

Assets side approach:
Capital Employed = Net Assets *** – Current Liabilities
** Excluding Non-trading assets and Fictitious Assets
DuPont Formula:

Return on Investments

= Net Profit Margin × Assets Turnover × Equity Multiplier

= Net Profit/ Sales × Sales/Assets × Assets/Equity
Q) From the following calculate Operating Profit Ratio:
Opening Stock 10,000; Purchases 120,000; Revenue from
Operations 400,000; Purchase Returns 5000; Return from Revenue
from operations 15,000; Selling expenses 70,000; Administrative
expenses 40,000; Closing stock 60,000.

[a] 56.81%
[b] 54.55%
[c] 45.45%
[d] 58.54%
[b] 54.55%
Q) Which one of the following will result in decrease of a company’s gross profit ratio when the sales are increasing?

[a] Decision to increase the quantity of inventory held
[b] Adverse change in the sales mix i.e. lower sales of more profitable lines
[c] Increase in advertising costs and expenses of delivering to customers
[d] Decision to extend credit period allowed to customers
[b] Adverse change in the sales mix i.e. lower sales of more profitable lines
Q) Net operating profit ratio determines .............. while net profit ratio determines ............
[a] Overall efficiency of the business, working efficiency of the management
[b] Overall efficiency of the management, working efficiency of the business
[c] Overall efficiency of the external market, working efficiency of the internal management
[d] None of the above
[a] Overall efficiency of the business, working efficiency of the management
Q.93) Which of the following ratios is not favourable when it is high?
[a] Operating ratio
[b] Liquidity ratio
[c] Net Profit ratio
[d] Stock Turnover Ratio
QUESTIONS ON PROFITABILITY RATIOS

(a) Operating ratio
Q) The DuPont Analysis uses the following ratios except:

[a] Total Asset Turnover
[b] Profit Margin
[c] Debt Ratio
[d] Financial leverage
QUESTIONS ON PROFITABILITY RATIOS

[d] Financial leverage
### QUESTIONS ON PROFITABILITY RATIOS

<table>
<thead>
<tr>
<th>Q)</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cost of goods sold</td>
<td>Rs.220,000</td>
<td></td>
</tr>
<tr>
<td>Selling Expenses</td>
<td>Rs.12,000</td>
<td></td>
</tr>
<tr>
<td>Office Expenses</td>
<td>Rs.8000</td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>Rs.6000</td>
<td></td>
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<tr>
<td>Sales</td>
<td>Rs. 3,20,000</td>
<td></td>
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</tbody>
</table>

Calculate Operating Ratio.

- [a] 80.15%
- [b] 82.15%
- [c] 76.87%
- [d] 78.45%
QUESTIONS ON PROFITABILITY RATIOS

[c] 76.87%
[Hint: Operating expenses = Selling expenses + Office expenses + Depreciation]
Q) Return on Investment measures a relationship between which of the following?

[a] Net Profit before Interest and Tax and Capital employed
[b] Net Profit after Interest and Tax and Capital employed
[c] Net Profit before Interest and Tax and Total Assets
[d] None of the above
[a] Net Profit before Interest and Tax and Capital employed
Q) Net Profit before interest and tax Rs.80,000; Equity share capital (12000 shares of Rs.10 each) 1,20,000; 10% Preference Share Capital Rs.50,000; 12% Debentures Rs.1,00,000; Reserves and Surplus Rs.130,000; Tax rate 50%; Calculate Return on Investment.

[a] 20%
[b] 25%
[c] 30%
[d] 35%

[Hint: Assumed that Reserves and Surplus include the Current Year’s profit]
QUESTIONS ON PROFITABILITY RATIOS

[a] 20%
Q) From the following information, calculate operating ratio.

Net profit amounted to Rs.94,000. Goods sold at cost plus 50%.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount (Rs)</th>
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<tbody>
<tr>
<td>Dividend received from investments</td>
<td>5,000</td>
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<tr>
<td>Depreciation on Fixed Assets</td>
<td>15,000</td>
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<tr>
<td>Contribution to PM’s Drought Relief Fund</td>
<td>10,000</td>
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<tr>
<td>Loss on sale of fixed assets</td>
<td>10,000</td>
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<tr>
<td>Administration and selling expenses</td>
<td>56,000</td>
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</tbody>
</table>
QUESTIONS ON PROFITABILITY RATIOS

[a] 79.81%
Calculate the return on capital employed (ROI) from the following information:

Capital employed 1,00,000
Operating profit on sales 6%
Gross Profit Margin 90,000 (15%)  
[a] 20%  
[b] 36%  
[c] 30%  
[d] 25%
QUESTIONS ON PROFITABILITY RATIOS

[b] 36%