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P.G. ASSISTANT COMMERCE

(HIGHER SECONDARY INCHARGE)

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12 – ACCOUNTANCY

CHAPTER – 9

RATIO ANALYSIS

I. LIQUIDITY RATIOS

1. Current Ratio:

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

Current Assets:

1. Current investments
2. Inventories [stock]
3. Trade receivables
   - Bills receivable
   - sundry debtors less provision for doubtful debts
4. Cash and cash equivalents
   - Cash in hand
   - Cash at bank
5. Short-term loans and advances given
6. Other current assets
   - Prepaid expenses
   - Accrued income

Current Liabilities:

1. Short-term borrowings
2. Trade payables
   - Bills payable & sundry creditors
3. Other current liabilities
   - Expenses payable
   - Income received in advance
4. Short-term provisions

2. Quick Ratio:

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

Quick Assets:

1. Current assets – Stock – Prepaid expenses

Current Liabilities:

1. Short-term borrowings
2. Trade payables
   - Bills payable & sundry creditor
3. Other current liabilities
   - Expenses payable
   - Income received in advance
4. Short-term provisions

II. LONG TERM SOLVENCY RATIOS

1. Debt – Equity Ratio:

$$\text{Debt – Equity Ratio} = \frac{\text{Long term debt}}{\text{Shareholders' funds}}$$

Total long term debt:

1. Long term debt includes.
   - Debentures, Bonds
2. Long term loans and other Long term borrowings

Shareholders funds:

1. Equity share capital
2. Preference share capital
3. Reserves and surplus

2. Proprietary Ratio:

$$\text{Proprietary Ratio} = \frac{\text{Shareholder's funds}}{\text{Total Assets}}$$

Shareholders' funds:

1. Equity share capital
2. Preference share capital
3. Reserves and surplus

Total assets:

1.All assets (Fixed assets, Current assets) Except Goodwill, Preliminary Exp

3. Capital Gearing Ratio:

$$\text{Capital Gearing Ratio} = \frac{\text{Funds bearing fixed interest or fixed dividend}}{\text{Equity shareholder's funds}}$$

Funds bearing fixed interest or fixed dividend

1. Preference share capital
2. Debentures
3. Bonds
4. Long term borrowings carrying fixed interest
5.

Equity shareholder's funds

1. Equity share capital
2. Reserves and surplus

III. TURNOVER RATIOS

1. Inventory Turnover Ratio:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of revenue from operations}}{\text{Average Inventory}}$$

Cost of revenue from operations:

[Purchases of stock in trade + Changes in inventories of Finished goods + Direct expenses]

- **Changes in inventory** = Opening inventory – Closing inventory

- **Direct expenses** = Wages + Carriage inwards + Freight inwards + Dock charges + Octroi + Import duty + Coal, gas, fuel and power + other direct expenses

(Or)

Cost of revenue from operations: Revenue from operations – Gross profit

➢ **Average Inventory** = $\frac{\text{Opening Inventory + Closing Inventory}}{2}$

NOTE:

➢ In the case of opening inventory is not given, closing inventory can be taken as average inventory.

❖ **Inventory conversion period**

➢ Inventory conversion period **(In days)** = $\frac{\text{Number of days in a year}}{\text{Inventory turnover ratio}}$

➢ Inventory conversion period **(In months)** = $\frac{\text{Number of months in a year}}{\text{Inventory turnover ratio}}$

2. Trade receivables turnover ratio

Trade receivables turnover ratio = $\frac{\text{Credit revenue from operations}}{\text{Average trade receivables}}$

➢ **Average trade receivables** = $\frac{\text{Opening trade receivables + Closing trade receivables}}{2}$

➢ **Trade receivables** = $\frac{\text{[Opening debtors + Closing debtors] + [Opening Bills receivable + Closing Bills receivable]}}{2}$

➢ **Credit revenue from operations** = Credit sales – Sales return

❖ **Debt collection period:**

➢ Debt collection period **(In days)** = $\frac{\text{Number of days in a year}}{\text{Trade receivables turnover ratio}}$

Debt collection period **(In months)** = $\frac{\text{Number of months in a year}}{\text{Trade receivables turnover ratio}}$

NOTE:

- Credit revenue from operations is nothing but net credit sales
- Closing trade receivables are taken instead of average trade receivables as the opening trade Receivables are not given.
- In the absence of opening trade receivables, closing trade receivables can be taken instead of Average trade receivables to calculate the ratio.

3. Trade payables turnover ratio

$$\text{Trade payables turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average trade payables}}$$

- **Net credit purchases** = Total credit purchases – Purchases returns
- **Average trade payables** = $\frac{\text{Opening trade payables + Closing trade payables}}{2}$
- **Trade Payables** = $\frac{\text{[Opening Creditors + Closing Creditors] + [Opening Bills Payable + Closing Bills Payable]}}{2}$

❖ **Credit payment period:**

- Credit payment period **(In days)** = $\frac{\text{Number of days in a year}}{\text{Trade Payable turnover ratio}}$
- Credit payment period **(In months)** = $\frac{\text{Number of months in a year}}{\text{Trade Payable turnover ratio}}$

NOTE:

- Closing trade payable are taken instead of average trade payable as the opening trade Receivables are not given.
- In the absence of opening trade payables, closing trade payables can be taken instead of average Trade payables.

4. Fixed assets turnover ratio:

Fixed assets turnover ratio = $\frac{\text{Revenue from operations}}{\text{Average fixed assets}}$

Average fixed assets = $\frac{\text{Opening fixed assets + Closing fixed assets}}{2}$

NOTE:

❖ As opening fixed assets are not given, fixed assets at the end are taken instead of average fixed assets.

IV. PROFITABILITY RATIOS

1. Gross Profit Ratio:

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Revenue from operations}} \times 100$$

➢ **Gross profit:**

Gross profit = Revenue from operations – Cost of revenue from operations

❖ **Cost of revenue from operations:**

[Purchases of stock in trade + Changes in inventories of finished goods + Direct expenses]

- **Changes in inventory** = Opening inventory – Closing inventory
- **Direct expenses** = Wages + Carriage inwards + Freight inwards + Dock charges + Octroi + Import duty + Coal, gas, fuel and power + other direct expenses

2. Operating cost ratio:

❖ **Operating cost ratio** = $\frac{\text{Operating cost}}{\text{Revenue from operations}} \times 100$

❖ **Operating cost** = Cost of revenue from operations + Operating expenses

❖ **Cost of revenue from operations:**

[Purchases of stock in trade + Changes in inventories of finished goods + Direct expenses]

- **Changes in inventory** = Opening inventory – Closing inventory
- **Direct expenses** = Wages + Carriage inwards + Freight inwards + Dock charges + Octroi + Import duty + Coal, gas, fuel and power + other direct expenses

❖ **Operating expenses** = Employee benefit expenses + Depreciation + Other expenses related to

Office and administration, selling and distribution

3. Operating Profit Ratio

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Revenue from operations}} \times 100$$

- **Operating profit ratio** = 100 – Operating cost ratio
- **Operating profit** = Revenue from operations – Operating cost
- **Operating cost** = Cost of revenue from operations + Operating expenses
- **Cost of revenue from operations:**

  [Purchases of stock in trade + Changes in inventories of finished goods + Direct expenses]

  - **Changes in inventory** = Opening inventory – Closing inventory
  - **Direct expenses** = Wages + Carriage inwards + Freight inwards + Dock charges + Octroi + Import duty + Coal, gas, fuel and power + other direct expenses

- **Operating expenses** = Employee benefit expenses + Depreciation + Other expenses related to Office and administration, selling and distribution

4. Net Profit Ratio:

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after tax}}{\text{Revenue from operations}} \times 100$$

Net Profit:

- **Net profit after tax** = Gross profit + Indirect income – Indirect expenses – Tax

  (OR)

- **Net profit after tax** = Revenue from operations – Cost of revenue from operations – Operating expenses - Non operating expenses + Non-operating income - Tax
- **Net Profit** = Gross Profit – (Administration Exp, Selling Exp, Distribution Exp, Financial Exp)

Non-operating Expenses:

1. Interes on loan
2. Loss on sale of all assets
3. Loss on sale of Furniture
4. Loss on sale of machinery
5. Loss on sale of plant
6. Loss on sale of investments
7. Financial Expenses

Non-operating income:

1. Dividend
2. Interest received
3. Profit on sale of all assets
4. Profit on sale of Furniture
5. Profit on sale of machinery
6. Profit on sale of plant
7. Profit on sale of investments
8. Interest received from investments

5. Return on Investment (ROI):

$$\textbf{Return on Investment (ROI)} = \frac{\text{Net profit before interest and tax}}{\text{Capital employed}} \times 100$$

- **Capital employed** = Shareholders' funds + Non-current liabilities

- **Shareholders' funds:**
  1. Equity share capital
  2. Preference share capital
  3. Reserves and surplus

- **Non-current liabilities:**
  1. Long term borrowings
  2. Debentures

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