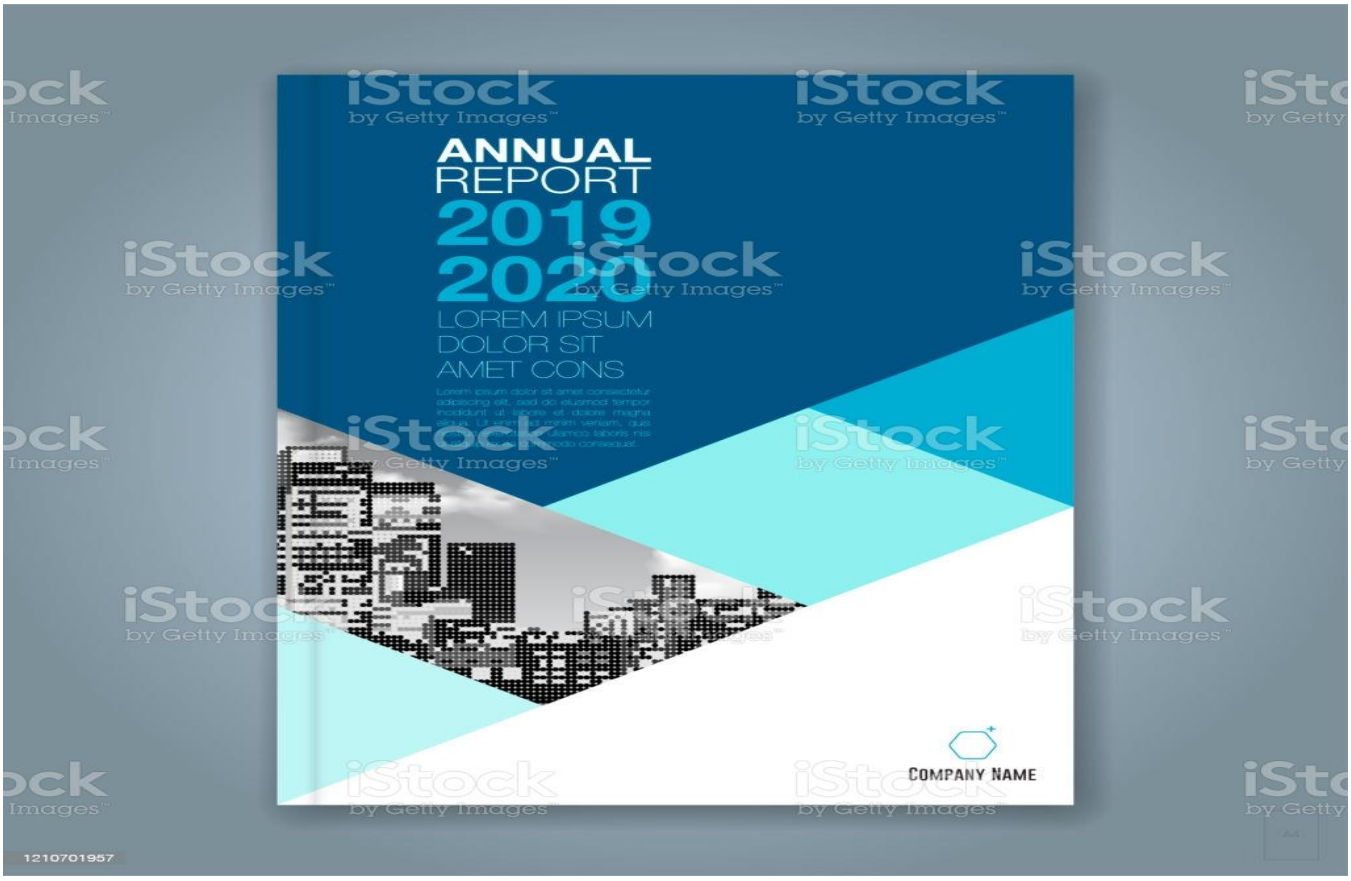
Management Accounting

SUB CODE: 16CCCCM12

STUDY MATERIAL PREPARED BY



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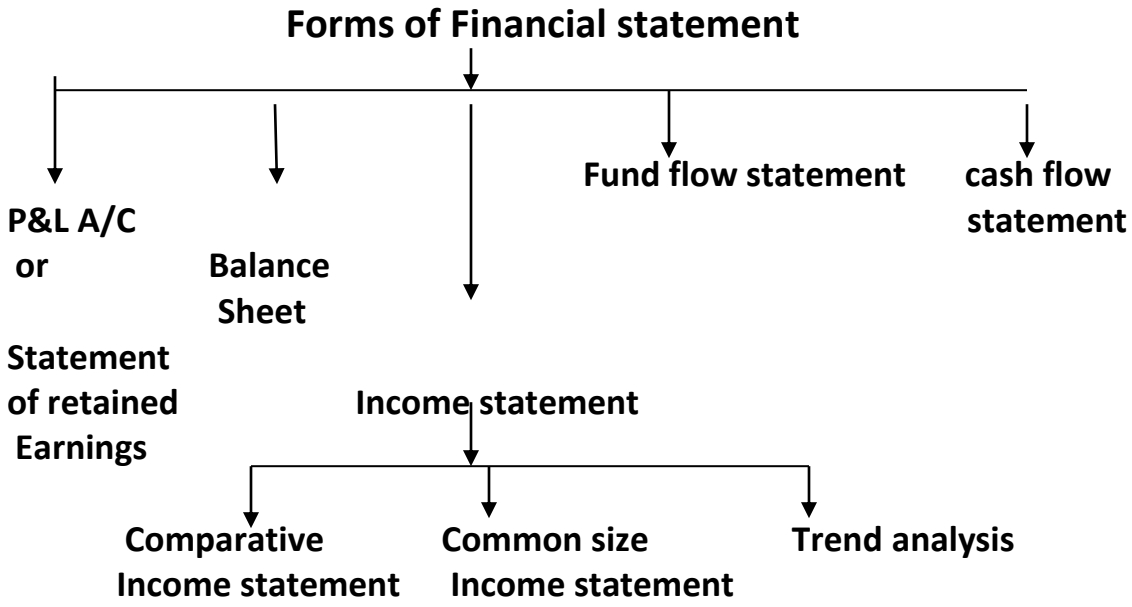
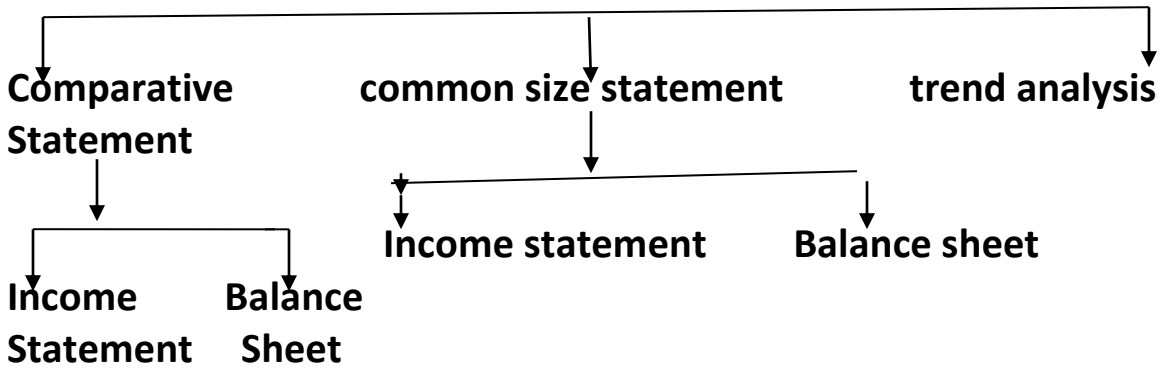
FINANCIAL STATEMENT ANALYSIS



Main objectives of financial statements:

1. To estimate earning capacity
2. To judge financial position and financial performance of the concern.
3. To determine the department capacity
4. To decide future prospects.

Income statement analysis



<u>Income statement formula:</u>

1. **Sales --- Cost of goods sold = gross profit**
2. **Gross profit – operating expenses = operating profit**
3. **Operating profit + non operating income = Total operating profit**
4. **Total operating profit-non operating expenses = Net profit**

2. What is the income statement analysis?

- **1.COMPARATIVE STATEMENT;**

  Comparative financial statements provide information to assess the direction of change in the business. In these statements, figures for two or more periods are placed side by side to facilitate comparison. Any financial statement can be prepared in a comparative Form.

- **(A) INCOME STATEMENT**

  The comparative balance sheet shows the value of assets and liabilities on two different dates. It helps in comparison. A comparative balance sheet has two columns to record the figures of the current year and the previous year. A third column is used to show the increase or decrease in figures. A fourth column may be added for giving percentage of increase or decrease.
  An income statement shows the operating results (net profit or loss) of a business for a designated period of time. A comparative income statement shows the operating results for a number of accounting periods so as to facilitate comparison. It gives an idea of the progress of a business over a period of time. It gives an idea about the improvement (or otherwise) in sales, profits and other expenses over the previous year(s).

- **(B) BALANCE SHEET:**

  The comparative balance sheet shows the value of assets and liabilities on two different dates. It helps in comparison. A comparative balance sheet has two columns to record the figures of the current year and the previous year. A third column is used to show the increase or decrease in figures. A fourth column may be added for giving percentage of increase or decrease.

- **2.COMMON SIZE STATEMENT:**

  The statements which report the figures as a percentage of some common bases are called common size statements. Sales are taken as the common size income statement. All expenses are recorded as a percentage of sales. In the common size balance sheet total of assets or liabilities is taken as the common base. Each item is expressed as a percentage of the total.

  (a.) INCOME STATEMENT:

  The comparative balance sheet shows the value of assets and liabilities on two different dates. It helps in comparison. A comparative balance sheet has two columns to record the figures of the current year and the previous year. A third column is used to show the increase or decrease in figures. A fourth column may be added for giving percentage of increase or decrease.
  An income statement shows the operating results (net profit or loss) of a business for a designated period of time. A comparative income statement shows the operating results for a number of accounting periods so as to facilitate comparison. It gives an idea of the progress of

a business over a period of time. It gives an idea about the improvement (or otherwise) in sales, profits and other expenses over the previous year(s).

- **(b) Balance sheet;**
  The comparative balance sheet shows the values of assets and liabilities on two different dates. It helps in comparison. A comparative balance sheet has two columns to record the figures of the current year and the previous year. A third column is used to show the increase or decrease in figures. A fourth column may be added for giving percentage of increase or decrease.

3. TREND ANALYSIS

Trend analysis is very helpful in making a comparative study of the financial statements of several years. Under this technique, information for a number of years is taken up and one year (usually the first year) is taken as the base year. Each item of the base year is taken as 100 and on that basis.

Income Statement Format

Comparative income statement

Base: first year
Analysis: horizontal

_____ **Ltd.**

Comparative income statement for the year ended _____

Particulars	previous year Rs	Current year Rs	Increase/decrease
1. Operating income Sales Less: cost of goods sold **Gross profit –A**			
2.**Operating expenses** Administration expenses Selling expenses Distributing expenses **Total operating profit-B**			
Operating profit C = A-B			
3.**Non operating income** ❖ Profit on sale of fixed assets ❖ Profit on revaluation of			

assets ❖ Income from investments ❖ Refund of income tax ❖ Interest/dividend/rent received Total non operating income –D **Total operating profit –E = C+ D**				
4.Non operating expenses ❖ Loss on sale of fixed assets ❖ Good will written off ❖ Interest paid on long term loans/debentures ❖ Income tax paid ❖ Financial expenses **Total non operating expenses -F** **Net profit G = E –F**				

Comparative Balance Sheet

_____ Ltd **Base: first year**

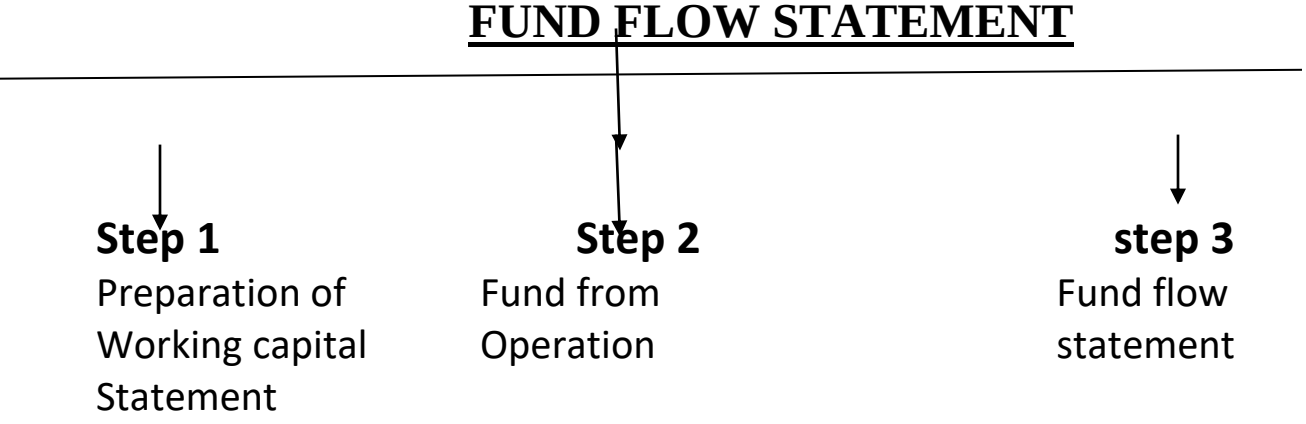
Analysis: horizontal

Comparative balance sheet as on_____ and_____

Particulars	Previous year	Current year	Increase (or)	Decrease
1.**Assets** **Current assets**: Cash/bank Debtors Bills receivables Prepaid expenses				

Outstanding income Stock Short term investments **Total current assets-A** **Fixed assets** Land and Building Plant and machinery Furniture and fixtures **Total fixed assets –B** **Total assets C = A + B**				
2.**Liabilities and capital**: **Current liabilities:** Bank overdraft Creditors Bills payable Prepaid income Outstanding expenses Provision for taxation Total current liabilities –A **Long term liabilities** Debentures Term loans Total long term liabilities-B **Total liabilities A + B =C**				

UNIT 2
FUND FLOW STATEMENT



Step 1
Preparation of Working capital Statement

Step 2
Fund from Operation

step 3
Fund flow statement

STEP 1: preparation of working capital statement

1. Increase in current Assets
   Increase in working capital

2. Decrease in current Assets
   Decrease in working capital

3. Increase in current liability
   Decrease in working capital

4. Decrease in Current liability
   Increase in working capital.

Particulars	Pre year	Current year	Increase	Decrease
Current assets Cash/bank Debtors Bills receivable Prepaid expenses Outstanding income Stock Short term investment **Total current asset –A**				

Current liabilities: Bank overdraft Creditors Bills payable Prepaid income Outstanding expenses Provision for taxations (Without adjustments) **Total current liabilities – B** A- B = C **Working capital** Net increasing or decreasing working capital				

Hint: increase 1st and 4 th column
Hint: decrease 2nd and 3 rd column

Step 2: Fund from operation or adjusted P&L A/C

Hints:

- Current asset/ current liabilities
- Gross profit
- Expenses

The above are not included in funds from operation account.

Fund from operation or adjusted P&L A/C

To preliminary expenses/miscellaneous rent expenses/Good will/ pattern rights/ bad debts written off	**XXX**	BY balance b/d(opening balance)	**XXX**
		By dividend received	**XXX**
To Transfer to general Reserve/ sinking fund	**XXX**	By interest on investment	**XXX**
	XXX	By profit on sale of fixed assets/investments	
To loss on sale of fixed assets/long term investments			**XXX**

To depreciation written off.	**XXX**	By non – trading investments	
To Discount- (issue of debenture/ share)written off	**XXX**	By value appreciation of fixed assets	**XXX**
To provision for taxation paid	**XXX**	By income tax refund	**XXX**
To proposed dividend/ interim dividend paid	**XXX**	By **Fund from operation** (balancing figure)	**XXX**
To balance c/d (closing Balance)	**XXX**		

STEP 3: FUND FLOW STATEMENT

SOURCES	Rs	APPLICATION	Rs
Funds from operation Issue of share/ debenture Long term loan borrowed Sale of fixed assets/ investments **Non – trading income** Interest recd on investment Dividend received Rent received Decrease in working capital		**Funds lost in operation** Redemption of share/ debenture Repayment of long term loans Purchase of fixed assets/invest Drawings amount **Non – trading payment** Interest paid Dividend paid Tax paid Increase in working capital	

Cash flow statement (as per accounting standard -3)

Particulars	Rs	Rs
A. CASH FLOW FROM OPERATING ACTIVITIES		
Net profit before tax		XXX
Add: NON – CASH AND NON OPERATING EXPENSES:		
preliminary expenses/miscellaneous expenses/Good will/ pattern rights/ bad debts written off	XXX	
Transfer to general Reserve/ sinking fund	XXX	
loss on sale of fixed assets/long term investments	XXX	
Depreciation written off.	XXX	
Discount- (issue of debenture/ share)written off	XXX	
Provision for taxation paid	XXX	
Proposed dividend/ interim dividend paid	XXX	
		XXX
LESS:		
Rent, dividend received	XXX	
Interest on investment	XXX	
Profit on sale of fixed assets/investments	XXX	
Non – trading investments	XXX	
Value appreciation of fixed assets	XXX	
Income tax refund		

	XXX	XXX
Operating profit before working capital changes/ cash trading profit		XXX
Add:		
INCREASE IN Current Liabilities	XXX	
DECREASE IN Current Assets	XXX	
Less:		
INCREASE IN Current Assets	XXX	
DECREASE IN Current Liabilities	XXX	
	XXX	
Net cash from operating activities (or) Cash from operations - A		XXX
B. Cash flow from investing activities:		
Add :		
Sale of fixed asset		
Sale of investment	XXX	
Interest received	XXX	
Dividend received	XXX	
Less :		
Purchase of fixed asset	XXX	
Purchase of investment		
Net cash from investing activities – B	XXX	
c. Cash flow from financing activities:	XXX	XXX
Add :		
Issue of share capital		
Long term borrowings	XXX	
LESS:	XXX	
Payment of long term borrowings		
Dividend paid	XXX	
Drawings	XXX	
Net cash from financing activities –C	XXX	
		XXX

A + B +C = Net increase or decrease in cash		XXX
ADD: cash at the beginning of the period (opening balance)		XXX
Cash at the end of the period(closing balance) B/F		XXX

4. What are the types of working capital?

There are two types of working capital. They are,

(i) Fixed capital

(ii) Working capital

(a) Gross working capital.

(b) Net working capital.

(i) Fixed capital;

Capital required for purchasing of fixed assets like,

- Land.
- Building.
- Plant.
- Machinery.
- Office requirement. And,
- Furniture.

It is called fixed capital.

(ii) Working capital;

Capital required for purchase of raw materials and for meeting the day-to-day expenditure on

- Salaries.
- Wages.
- Rents.
- Advertising etc.

It is called working capital.

(a) Gross working capital;

This represents the amount of funds invested in current assets. Under the gross concept,

Gross working capital = total assets – fixed assets.

(b) Net working capital;

Net working capital is the excess of current assets over current liabilities.

Net working capital = current assets – current liabilities.

MARGINAL COSTING

5. What is contribution?

Contribution is the difference between sales and variable costs and it contributes towards fixed costs and profit. It helps in sales and pricing policies and measuring the profitability of different proposals.

Formula for calculating contribution:

(i) Contribution = Sales – variable cost.
(ii) Contribution = Profit + fixed cost.
(iii) Contribution = Loss – fixed cost.
(iv) Contribution = Sales × PV ratio.

6. What is PV ratio (Or) Profit volume ratio?

The profit volume ratio is usually called P.V ratio. It is one of the most useful ratios for studying the profitability of business. The ratio of contribution of sales is the P/V ratio. It may be expressed in the variable cost per unit or by increasing the selling price per unit.

Formula for calculating P.V ratio:

(i) PV ratio = $\frac{\text{Contribution}}{\text{Sales}} \times 100$

(ii) PV ratio = $\frac{\text{Sales – variable cost}}{\text{Sales}} \times 100$

(iii) PV ratio = $\frac{\text{Profit + fixed cost}}{\text{Sales}} \times 100$

(iv) PV ratio = $\frac{\text{Loss – fixed cost}}{\text{Sales}} \times 100$

(v) PV ratio = $\frac{\text{Profit}}{\text{MOS}} \times 100$ (MOS = Margin of safety).

When two years (Or) two periods given:

(i) PV ratio = $\frac{\text{Changes in contribution}}{\text{Changes in sales}} \times 100$

(ii) PV ratio = $\frac{\text{Changes in profit}}{\text{Changes in sales}} \times 100$

Break-even point:

Break-even point refers to the point where total cost is equal to total revenue. It is a point of no profit, no loss. This is also a minimum point of production where total costs are recovered. If sales go up beyond the break-even point, the organisation makes a profit. If they come down, loss is incurred.

Formula for calculating BEP:

(i) BEP (in units) = $\frac{\text{Fixed cost}}{\text{Contribution Per Unit}}$

(ii) BEP (in rupees) = $\frac{\text{Fixed cost}}{\text{Contribution}}$

(Or)

(iii) BEP (in rupees) = $\frac{\text{Fixed cost}}{\text{P/V ratio}}$

Margin of safety (MOS):

Margin of safety is the excess of sales over the break-even sales. It can be expressed in absolute sales amount or in percentage. It indicates the extent to which the sales can be reduced without resulting in loss. A large margin of safety indicates the soundness of the business.

Formula for calculating margin of safety:

(i) MOS = Actual – break-even sales.

(ii) MOS (in units) = $\frac{\text{Profit}}{\text{Contribution per unit}}$

(iii) MOS (in Rs) = $\frac{\text{Profit}}{\text{Contribution}}$

(iv) MOS (in Rs) = $\frac{\text{Profit}}{\text{P/V ratio}}$

MOS ratio:

MOS ratio = $\frac{\text{MOS}}{\text{Total sales}} \times 100$

Calculate sales:

Sales required to earn a profit of Rs…

(i) Required sales (in units) = $\frac{\text{Fixed cost + designed profit}}{\text{Contribution per unit}}$

(ii) Required sales (in Rs) = $\frac{\text{Fixed cost + designed profit}}{\text{Contribution per unit}} \times$ Selling price per unit

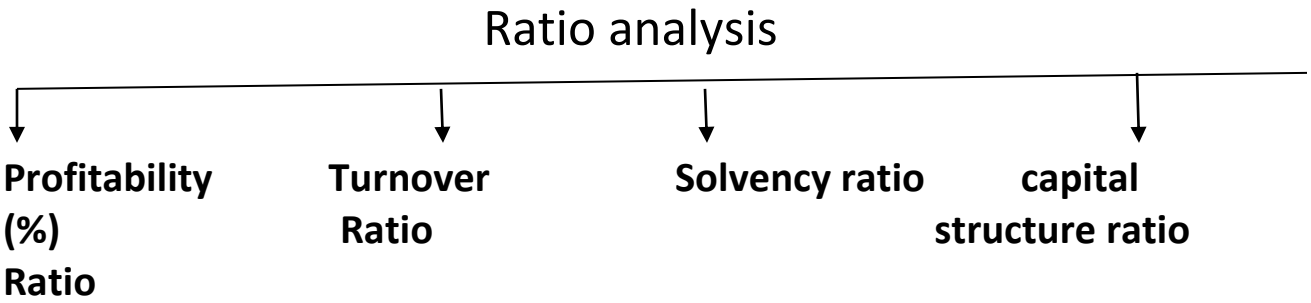
(iii) Required sales (in Rs) = $\frac{\text{Fixed cost + designed profit}}{\text{P/V ratio}}$

Calculate profit:

Profit = Contribution – fixed cost

(i) Contribution = Sales – variable cost.
(ii) Contribution = Sales × P/V ratio.
(iii) Fixed cost = Contribution – profit.

RATIO ANALYSIS



1. Profitability ratio:

Calculate the profit of the firm's business operation. It may be related to sales.

Types:

- Gross profit ratio
- Net profit ratio
- Operating ratio
- Operating profit ratio
- Expenses ratio
- ROI or Return on investment ratio

2. **Turnover ratio**: it also called performance ratio/ activity ratio.

Types :

- Stock turnover ratio
- Debtors turnover ratio
  a) Average collection period
- Creditors turnover ratio
  b) Average payment period
- Fixed assets turnover ratio
- Working capital turnover ratio

3. **Solvency ratio**: it also called financial ratio (or) stability ratio. Calculate the financial position and ability to meet its obligation.

Types :

- **Short term solvency ratio**
  a. Current ratio
  b. Liquidity ratio(or) quick ratio(or) acid test ratio
  c. Super quick ratio (or) absolute liquid ratio.
- **Long term solvency ratio:**
  a. Debt equity ratio
  B.proprietory ratio
  C.Fixed asset ratio

4. **Capital structure ratio: types** :

a. Capital gearing ratio

Information (or) Hints:

1. Net Sales = Total Sales – Sales return.
2. Net purchase = Total purchase – Purchase return.
3. Cost of goods sold (CGS) = Opening stock + purchase – closing stock.

4. **Operating Expenses:**

(a) Administration Expenses.
(b) Selling Expenses.
(c) Distribution Expenses.

5. **Non-operating Expenses:**
   (a) Loss on sale of fixed assets.
   (b) Goodwill returns off.
   (c) Interest paid on long term loans/ debentures.
   (d) Income tax.
   (e) Financial Expenses.

6.Non-operating income:

(a) Profit on sale of fixed assets/ investment.
(b) Revaluation of sale of fixed assets/ investment.
(c) Income from investment.
(d) Refund from income tax.
(e) Interest/ dividend/ rent received.

PROFITABILITY RATIO

(1) **GP Ratio** = $\frac{\text{GP}}{\text{Net sales}} \times 100$

GP = Sales – Cost of goods sold

(2) NP ratio = $\frac{\text{NP}}{\text{Net sales}} \times 100$

(a) NP = GP + Non-operating income – operating expenses – Non-operating Expenses.

(b) GP = Sales- Cost of goods sold (CGS).

(3) Operating Ratio = $\frac{\text{CGS + Operating expenses}}{\text{Net sales}} \times 100$

(**4) Operating profit ratio** = $\frac{\text{Operating profit}}{\text{Net Sales}} \times 100$

(a) Operating Profit = GP – Operating expenses.

(Or)

(b) Operating profit = NP + Non-operating expenses – Non-operating income.

(5) Expenses ratio = (Particular) Expenses ×100
Net sales

(6) ROI = ROI (Or) Return on investment (Or) Return on capital employed

ROI = Operating profit ×100 **Capital Employed**

Operating Profit = See Operating profit ratio

Capital Employed = Share capital + Reserve/Surplus + Long term Liabilities – Non-business assets + fictitious assets.

(Or)

= Shareholders fund + Long term liabilities

(Or)

= Net Working capital + fixed assets

Net Working capital = Current assets – Current liabilities

(Or)

ROI = Profit after tax + interest + tax ×100
Capital employed

TURN OVER RATIO

(1) Stock turnover ratio = Cost goods sold
Average stock

CGS = Opening stock + purchase – closing stock.

Average stock = Opening stock + closing stock
2

(a) Stock turnover period = Days/ Month
Stock turnover ratio

(b) Direct method = Average stock ×No of days/month in a year.
Cost of goods sold

(2) Debtors turnover ratio = Credit sales
Average A/C receivable.

Credit sales = Total sales – cash sales

Average A/C Receivable = Opening (Debtors + Bills Receivable) + Closing (Debtors + Bills Receivable)
2

(a) Debtors Collection period = Days/ month
Debtor's turnover ratio

(b) Direct method = Debtors turnover ratio & Average collection period.
= Debtors + Bills Receivable ×No of Working days/ month in a year.
Credit Sales

(3) **Creditors turnover ratio** = Credit purchase
Average A/C payable

(a) Average A/C payable = Opening (Creditors + Bills payable) + Closing (Creditors Bills payable)/2

(b) Creditors payment period = Days / month
Creditor's turnover ratio

(c) Direct method = Creditors turnover ratio + Average payment period
= Creditors + Bills payable × No. of Working days in a year.
Credit purchase

(**4) Fixed assets turnover ratio** = Cost of goods sold / Sales
Net fixed assets

(5) Working capital turnover ratio = Cost of Sales
Net working capital

LIQUIDTY RATIO (Financial ratio)

- **Short term solvency ratio:**
  - Current ratio.
  - Liquid ratio.
  - Absolute liquid ratio.

- **Long term solvency ratio:**
  - Debt equity ratio.
  - Proprietary ratio.

(a) Current ratio:

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

(b) Liquid ratio:

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

Liquid Assets = Current Asset – (Stock + Prepaid Expenses)

(c) Absolute liquid ratio:

$$\text{Absolute liquid ratio} = \frac{\text{Absolute liquid asset}}{\text{Liquid liabilities}}$$

Absolute Liquid asset = Cash + bank + Short term investment

Liquid liabilities = Current liabilities – Bank overdraft

(d) Debt equity ratio:

$$\text{Debt equity ratio} = \frac{\text{External equities}}{\text{Internal equities}}$$

(Or)

$$= \frac{\text{Total long term debt}}{\text{Shareholders fund}}$$

Total long term debt = Debentures + loans from bank.

Shareholders fund = preference share capital + equity capital + reserves surplus.

(e) Proprietary ratio:

$$\text{Proprietary ratio} = \frac{\text{Shareholders fund + proprietary fund}}{\text{Total tangible assets}}$$

Total tangible assets = Assets – goodwill + preliminary expenses.

CAPITAL GEARING RATIO

$$\text{Capital gearing ratio} = \frac{\text{Preference share capital + fixed interest bearing securities}}{\text{Equity capital + reserves \& surplus}}$$

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CAPITAL BUDGETING

The capital budgeting is divided into three types. They are;

- Payback period.
- Accounting rate of return method.
- Discounted cash flow method.
  - (a) Net present value method.
  - (b) Present value index method.
  - (c) Internal rate of return method.

(a) Payback period method:

$$\text{Payback period method} = \frac{\text{Initial investment}}{\text{Annual cash inflow.}}$$

Annual cash inflow = Net income before depreciation but after taxation.

Post payback profitability:

Post payback profitability = Annual cash inflow × (Estimated life – payback period).

Post payback index:

$$\text{Post payback index} = \frac{\text{Post payback profit}}{\text{Initial investment}} \times 100$$

(B)Accounting (Or) Average rate of return method:

$$ARR = \frac{\text{Average annual profit}}{\text{Original investment}} \times 100$$

(Or)

$$= \frac{\text{Average annual profit}}{\text{Average investment}} \times 100$$

Average annual profit:
Average profit after depreciation and tax.

Average investment:

$$\text{Average investment} = \frac{\text{Original investment}}{2}$$

(Or)

$$= \frac{\text{Original investment} - \text{scrap value}}{2}$$

Discounted cash flow method

$$\text{Discounted cash flow method} = \frac{1}{(1+r)^n}$$

r = Discounting rate.
n = No. of years.

(D)1. Net present value (NPV) method:

NPV = Present value of cash inflows – present value of cash outflow (Initial investment)

$$NPV = \frac{R1}{(1+k)^1} + \frac{R2}{(1+k)^2} + \frac{R3}{(1+k)^3} - 1.$$

R = Future cash inflows at different times.
K = Cost of capital (Or) Discounting rate.
I = Cash out flows at different times.

2. Excess present value index method:

$$\text{EPV index} = \frac{\text{Total present value of cash inflows}}{\text{Total present value of cash outflows}} \times 100$$

3. Internal rate of return method:

$$\text{Present value factor (PV factor)} = \frac{\text{Initial investment}}{\text{Average cash inflows.}}$$

STANDARD COSTING

(1) Standard costing:

Standard costing is the preparation and use of standard costs, their comparison with actual costs and the analysis of variance to their causes and point of incidence.

(2) Types of standard:

(i) Ideal standards.
(ii) Expected standards.
(iii) Basic standards.
(iv) Normal standards.

(3) Variance analysis:

Variance means difference. In standard costing, variance means the difference between the standard cost and actual cost.

I.C.M.A. London defines variance as “difference between a standard cost and the comparable actual cost incurred during a period”.

(4) Types of variance:

(i) Direct material cost variances.
(ii) Direct labour cost variance.
(iii) Overheads cost variances.
(iv) Sales variances.

(5) Direct material cost variances:

(i) Material cost variances = $(SQ \times SP) - (AQ \times AP)$

(ii) Material price variances = $(SP - AP)\, AQ$

(iii) Material usage variances = (SQ – AQ) SP

(iv) Material mix variance = (RSQ – AQ) SP

(v) Material sub usage variance = (SQ – RSQ) SP

(vi) Material yield variance = (standard loss on actual input – actual loss) Average standard price per unit

NOTE:

SQ = Standard quantity
SP = Standard price.
RSQ = Revised standard quantity (SQ / Total SQ × Total actual quantity).
AP = Actual price.
AQ = Actual quantity.

(6) Direct labour cost variances:

(i) Labour cost variance = (SH × SR) – (AH × AR) (Or) Standard cost –actual cost.

(ii) Labour rate variance = (SR – AR) AH

(iii) Labour efficiency variance = (SH – AH) SR

(iv) Labour mix variance = (RSH – AH) SR

(v) Labour sub efficiency variance = (SH – RSH) SR

(vi) Labour yield variance = (standard loss on actual input – actual loss) ×Average standard labour Rate

NOTE:

SH = Standard hours.
SR = Standard rate.
RSH = Revised standard hours (SH / TSH × TAH
AH = Actual hours.
AR = Actual rate.

(7) **Overheads cost variance**:

(i) OH cost variance = standard OH – actual OH

(ii) OH budget variance = budgeted OH – actual OH

(iii) OH volume variance = standard OH – budgeted OH

(iv) OH efficiency variance = (actual production – standard production) SR

(v) Calendar variance = (Revised budgeted production – budgeted Production)

(8) Sales Variance:

(i) Sales Value Variance = Actual sales – Standard sales (Or) (AQ × AP) – (SQ × SP)

(ii) Sales price variance = (AP – SP) AQ

(iii) Sales volume variance = (AQ – SQ) SP

(iv) Sales mix variance = (AQ – RSQ) SP

(v) Sub-volume variance = (RSQ – SQ) SP

RSQ = (SQ / Total SQ × Total actual quantity).