First Edition : February 2003
Second Edition : August 2003
Third Edition : May 2004
Reprint : January 2006

Credits : The Entire team of GENESIS & DHURUVA

Rs. 30/-

Published & Distributed by **GENESIS - VBSE (P) Ltd.**

GENESIS - VBSE Private Limited

Corporate Office :
#13/7, Rosy Towers, 4th Floor,
N.H. Road, Nungambakkam,
Chennai - 600 034.
Phone : (044) - 255 22 222
Fax : (044) - 28255937
E-Mail : tally@vsnl.net

Your Nearest Campus

Dhuruva Solutions Private Limited

Regional Head Office :
HA Plaza 1st Floor, Opp. to
Telugu University, Public Garden,
Nampally, Hyderabad - 500 001.
Phone : (040) - 234 11 444
E-Mail : dhuruvatally@vsnl.net

Your Nearest Campus

CONTENTS

1 Financial Accounting

BOOK KEEPING – DOUBLE ENTRY SYSTEM

The Types of Accounts under Double Entry System of Book Keeping are broadly classified into Personal and Impersonal Accounts.

I. Personal Accounts - *(eg. Debtors, Creditors etc.,)*

Debit : The Receiver.
Credit : The Giver.

II. Impersonal Accounts - This is further divided into Real and Nominal Accounts.

a) Real Accounts - *(eg. Land, Building, Investments.)*

Debit : What comes in.
Credit : What goes out.

b) Nominal Accounts: *(eg. Salary Account, Interest Account, Commission, Rent etc.,)*

Debit : All Expenses and Losses.
Credit : All Incomes and Gains.

I. Journal, Ledger & Trial Balance :

Journal - This is a Preliminary Record of day to day Business Transactions, which is to give effect to two different Accounts involved in business transactions *(i.e., Debit & Credit)*. The Journal Entry shall have narration giving the description of the Transaction recorded.

Ledger - Ledger is a Permanent record of all Transactions in a summarised and classified form. The Journal entries are posted periodically under the Accounting head maintained in General Ledger Register.

Trial Balance - This is a statement showing the balance of all Ledger Accounts from the General Ledger Register. This is to test the arithmatical accuracy of Books of Accounts.

II. Final Accounts :

Profit & Loss Account and Balance Sheet are the Final Accounts derived from the Trial Balance. The Profit & Loss Account will end with either Net Profit or Net Loss which is the Net result of the operating activities of an Enterprise. The Balance Sheet is a statement prepared as on the reporting date to show the Financial status *(i.e., What the Company owns and what it owes)*

BANK RECONCILIATION STATEMENT

Meaning :

Pass book is your Banker's Statement where entries recorded as per your Bank Records. Cash book is your own record of Bank transactions. Often we find mismatch between our records and bank records. To reconcile or match these two records we prepare Bank Reconciliation Statement. This statement will start with either our balance or banker's balance and end with banker's balance or our balance respectively. The common reasons for mismatch would be the time lag due to cheques clearing formalities, Bank charges automatically debited, etc.,

Format of Bank Reconciliation Statement

Balance as per Pass Book

Add :
- Cheques deposited but not yet presented and credited.
- Insurance Premium paid and bank charges entered in pass book but not recorded in cash book.
- Interest debited in pass book but not yet recorded in cash book
- Payments like telephone charges or to Creditors made directly by the bank but not entered in cash book
- Wrong Debit made in the pass book or wrong credit made in the cash book.

Less :
- Cheques issued but not yet presented.
- Interest credited by the bank but not credited in the cash book
- Dividend, Interest, etc. received directly by the bank on behalf of the client.
- Direct receipts from Customers to the bank.
- Wrong credit made in the pass book or wrong debit made in the cash book.

Balance as per Cash Book

Alternative Method :

Balance as per Cash book

Less:
- Cheques deposited but not yet presented and credited.
- Insurance Premium paid and bank charges entered in pass book but not recorded in cash book.
- Interest debited in pass book but not yet recorded in cash book
- Payments like telephone charges or to Creditors made directly by the bank but not entered in cash book.
- Wrong Debit made in the pass book or wrong credit made in the cash book.

Add:
- Cheques issued but not yet presented.
- Interest credited by the bank but not credited in the cash book
- Dividend , Interest, etc. received directly by the bank on behalf of the client.
- Direct receipts from Customers to the bank.
- Wrong credit made in the pass book or wrong debit made in the cash book.

Balance as per Pass Book

PARTNERSHIP ACCOUNTS

Definition :

The Indian partnership Act 1932, Section 4, defines partnership as, "the relation between persons who have agreed to share the profits of a business carried on by all or any of them acting for all".

Capital :

Partner's contribution to the business of the firm is called capital. Capital accounts of the partners may be **fixed** or **fluctuating.**

(A) When the Capitals are Fixed :

Capital Accounts

Date	Particulars	X Rs.	Y Rs.	Date	Particulars	X Rs.	Y Rs.
2002 Dec 31	To Balance c/d	xxx	xxx	2002 Jan.1	By Balance b/d	xxx	xxx
		xxx	xxx			xxx	xxx
				2003 Jan.1	By Balance b/d	xxx	xxx

Current Accounts

Dr. **Cr.**

Date	Particulars	X Rs.	Y Rs.	Date	Particulars	X Rs.	Y Rs.
2002 Dec 31	To Drawings	xxx	xxx	2002 Dec.31	By Interest on Capital	xxx	xxx
	To Interest on drawings	xxx	xxx		By Partner's Salary	xxx	xxx
	To Balance c/d	xxx	xxx		By P & L A/c	xxx	xxx
					By Commission	xxx	xxx
					By Balance b/d	xxx	xxx
		xxx	xxx			xxx	xxx
2003 Jan.1	To Balance b/d	-	xxx	2003 Jan.1	By Balance b/d	xxx	-

(B) When Capitals are fluctuating :

Dr. **Cr.**

Date	Particulars	X Rs.	Y Rs.	Date	Particulars	X Rs.	Y Rs.
2002 Dec 31	To Drawings	xxx	xxx	2002 Jan.1	By Balance b/d	xxx	xxx
	To Interest on drawings	xxx	xxx		By Interest on Capital	xxx	xxx
	To Balance c/d	xxx	xxx		By P & L A/c	xxx	xxx
					By Partner's Salary	xxx	xxx
					By Commission	xxx	xxx
		xxx	xxx			xxx	xxx
				2003 Jan.1	By Balance b/d	xxx	xxx

Profit and Loss Appropriation Account

Dr. **Cr.**

Date	Particulars	Rs.	Rs.	Date	Particulars	Rs.	Rs.
2002 Dec 31	To Interest on Capital			2002 Dec 31	By Net Profit A/c	xxx	xxx
	X	xxx			By Interest on Drawings		
	Y	xxx			X	xxx	
			xxx		Y	xxx	
							xxx
	To Partner's Salary						
	X	xxx					
	Y	xxx					
	To Net Profit transferred to						
	X	xxx					
	Y	xxx					
			xxx				
			xxx				xxx

Interest on Capital :

Interest is allowed on partners' capitals only if the partnership agreement specifically allows it at a particular rate. Interest for a year is usually calculated on the opening capital and on the capital introduced during the year. If the date of additional capital introduced during the year is not given, the interest is to be calculated for 6 months. If the rate of interest is not given, it is assumed to be 12% p.a. Entry for interest on capital is

Debit : Interest on Capital Account
Credit : Respective partner's Capital (*or current*) Account.

Interest on Drawings :

Interest is not charged on partner's drawings unless their agreement specifically provides for it at a particular rate. If the rate is not given it is assumed to be 6% p.a.

Entry for interest on Drawing is :

Debit : Respective partner's capital or current Account
Credit : Interest on drawings Account

Interest on Loan from a Partner :

The Journal Entry is :

Debit : Interest on loan Account
Credit : Respective partner's loan Account
(*Being interest on partner's loan*)

Partners' Salaries :

Debit : Partner's Salaries Account
Credit : Respective partner's capital Account or current Account
(*Being salary paid to the partner*)

The Journal Entries for revaluation may be put as follows :

1. For any increase in assets value and decrease in liabilities (*Profit items*)

Debit : Respective Assets Account
Debit : Respective Liabilities Account
Credit : Revaluation Account

2. For any decrease in asset value and increase in liabilities (*Loss items*)

Debit : Revaluation Account
Credit : Respective Assets Account
Credit : Respective Liabilties Account

3. For any unrecorded asset now recorded (*Profit item*)

Debit : Unrecorded Assets Account
Credit : Revaluation Account

4. For any unrecorded liability now recorded (*Loss items*)

Debit : Revaluation Account
Credit : Unrecorded liabilities Account

5. If revaluation account shows Profit

Debit : Revaluation Account
Credit : Old Partner's Capital Account

6. If revaluation account shows loss

Debit : Old Partner's Capital Account
Credit : Revaluation Account

Journal entry for transferring accumulated reserve and undistributed profit is :

Debit : General Reserve Account
Debit : Profit and Loss Account
Credit : Old Partner's Capital Account
(*Being reserve and profit transferred in the old profit - ratio*)

Instead of profit, if there is undistributed loss represented by the debit balance of profit and loss account, the entry is :

Debit : Old Partner's Capital Account
Credit : Profit and Loss Account
(*Being loss transferred in the old profit - ratio*)

Entries related to Goodwill

(a) If Goodwill is raised in the books of a firm :

Under this method, Goodwill does not appear as an asset in the given Balance Sheet though it exists in the firm. It means that it is not yet recorded in its books and remains a Silent Asset. To give the old partners credit for Goodwill, it has to be brought into books before the admission of a New partner. When Goodwill is thus raised in the books of a firm, it will appear as an Asset in its future Balance Sheet

The entry being :

Debit : Goodwill Account
Credit : Old partner's capital Account
(*Being Goodwill created and old partner's capital account credited in the old profit ratio*)

(b) If the books of firm already shows a balance in the Goodwill Account :

The entry given above should be made only for the difference between the present value of goodwill and that shown by the books.

If increasing the existing value of Goodwill, the following entry is:

Debit : Goodwill Account
Credit : Old Partner's Capital Account
(*Being Value of the Goodwill increased and old partners credited in the old ratio*)

If decreasing the existing value of Goodwill, the following entry is :

Debit : Old Partner's Capital Account
Credit : Goodwill Account
(*Being Value of the Goodwill decreased and old partners debited in the old ratio*)

Capital Brought in by the Incoming Partner :
Entry for this is :

Date	Particulars	L.F.	Debit Rs.	Credit Rs.
	Debit : Cash Account		.....	
	Dedit : Stock Account		.....	
	Debit : Furniture Account		.....	
	Credit : New Partner's Capital Account			.....
	(Being capital brought in by the new partner in cash, stock and furniture)			

Revaluation of Assets and Liabilities

Revaluation of Assets and Liabilities is equally necessary at the time of Retirement of a Partner or at Admission. When Assets and Liabilities are revalued, their values may increase or decrease. We have already seen in connection with admission that increase in value of Assets and decrease in Liabilities are Profit items of Revaluation. Conversely decrease in Assets and increase in Liabilities are loss items.

Entries for Revaluation here are similar to those in Admission.

4. Treatment of Goodwill on Retirement

At the time of Retirement of a Partner, adjustment for Goodwill of the Firm, if any, has to be made almost in the same way as in admission. The Goodwill treatment that were seen in the context of Admission of a partner, hold good, to a large extent, in retirement too. But we confine ourselves to the Revaluation Method only.

Revaluation Method of Treatment of Goodwill

This is very much asking to the Revaluation Method of treatment of Goodwill seen in connection with Admission. The present value of Goodwill of a firm is estimated and brought into record. The entry is:

Debit : Goodwill Account
Credit : Old partner's Capital Account
(Goodwill credited to the Old partners in the old ratio).

5. Paying off the Retiring Partner

When a partner retires, the amount due to him from the firm after all the above adjustments (ie. adjustment for accumulated reserves, revaluation profit or loss and for goodwill) will be ascertained. This amount may be paid to him in a lump sum immediately or in installments spread over one or more years. When it is not paid immediately, it will be transferred to his loan A/c which will carry Interest at 6% per annum.

(i) When the amount is paid entirely at once:

Debit : Retiring partner's Capital Account
Credit : Bank / Cash Account

(ii) When the amount is not paid at once

Debit : Retiring partner's Capital Account
Credit : Retiring partner's Loan Account

(iii) When the amount is paid partly at once

Debit : Retiring partner's Capital Account
Credit : Bank / Cash Account
Credit : Retiring partner's Loan Account

ISSUE OF SHARES

Journal Entries in the books of the New Company

1. *Debit* : Bank Account
   Credit : Share Application Account
   (Being Share Application Amount received)

2. *Debit* : Share Application Account
   Credit : Share Capital Account *(Being Share Application amount transferred to Share Capital account)*

3. *Debit* : Share Application Account
   Credit : Share Allotment Account
   (Being the excess amount received on application is used for the Share Allotment Amount)

4. *Debit* : Share Application Account
   Credit : Bank Account
   (Being Share Applications rejected)

5. *Debit* : Share Allotment Account
   Credit : Share Capital Account
   (Being Share Allotment Amount due at Par)

6. *Debit* : Share Allotment Account
   Credit : Share Capital Account
   Credit : Share Premium Account
   (Being Share Allotment due with premium)

7. *Debit* : Share Allotment Account
   Debit : Discount on issue of shares
   Credit : Share Capital Account
   (Being Share Allotment amount due with discount)

8. *Debit* : Bank Account
   Credit : Share Allotment Account
   (Being share allotment amount received)

9. *Debit* : Share First and final call
   Credit : Share Capital Account
   (Being Share First and final call due)

10. *Debit* : Bank Account
    Debit : Calls in Arrears
    Credit : Share First & Final call
    (*Being share first & final call received*)

11. *Debit* : Share Capital Account
    Credit : Share Forfeiture Account
    Credit : First & Final call account
    (*Being Shares forfeited)*

12. *Debit* : Bank Account
    Debit : Share Forfeiture Account
    Credit : Share Capital Account
    (Being shares reissued)

13. *Debit* : Share Forfeiture Account
    Credit : Capital Reserve Account
    (Being profit on forfeiture and reissue transferred to Capital Reserve Account)

Journal Entries in the case of Redeemable Preference Shares

1. *Debit* : Bank Account
   Credit : Share Capital Account
   (Being Shares issued at par)

2. *Debit* : Bank Account
   Credit : Share Capital Account
   Credit : Share Premium Account
   (Being Shares issued at premium)

3. *Debit* : Bank Account
   Debit : Shares issued at discount Account
   Credit : Share Capital Account
   (Being Shares issued at premium)

REDEMPTION OF SHARES

1. Redemption Due

   Debit : Redeemable preference share capital Account
   Debit : Premium on Redeemable share Account
   Credit : Preference share holder Account
   (Being share Redeemable)

2. Payment to Redeemed Shares

   Debit : Redeemable preference share holder
   Credit : Bank

3. Transfer Premium on Redemption Account

   Debit : Share premium Account
   Debit : General Reserve/Reserve Fund
   Credit : Premium on Redemption of preference share capital Account

4. Tranfer to capital Redemption Reserve Account

   Debit : Reserve Account
   Credit : Capital Redemption Reserve
   (CRR = Redemption preference share – Fresh Issue of share capital)

5. Issue of Bonus Shares

   Debit : Capital Redemption Reserve Account
   Credit : Bonus to share holders account
   Debit : Bonus to share holder account
   Credit : Share Capital Account

6. Sale of Investments

   Debit : Bank Account
   Credit : Investments

ISSUE OF DEBENTURES

1. From consideration point of view
   a) Issue of debentures for cash

      Debit : Bank account
      Credit : Debenture account
      (Being debentures issued)

   b) For consideration other than cash

      Debit : Assets account
      Credit : Vendor account
      (Being assets purchased)
      Debit : Vendor account
      Credit : Debenture Account

2. From price point of view

   a) When debenture is issued at discount

      Debit : Bank Account
      Debit : Discount Account
      Credit : Debenture Account

   b) When debenture is issued at Premium

      Debit : Bank Account
      Credit : Debenture Account
      Credit : Premium on Debenture Account

   c) When debenture is issued at Par

      Debit : Bank Account
      Credit : Debenture Account

VERTICAL FORM OF BALANCE SHEET

Balance Sheet of .....as at .....

(I) SOURCES OF FUNDS	Schedule No.	Figure as at the end of current financial year	Figure as at the end of Previous financial year
(1) Shareholder's Funds			
(a) Capital	.....	.....	.....
(b) Reserves & Surplus	.....	.....	.....
(2) Loans Funds			
(a) Secured Loans	.....	.....	.....
(b) Unsecured Loans	.....	.....	.....
TOTAL	.....		
(II) APPLICATION OF FUNDS			
(1) Fixed Assets			
(a) Gross Block	.....	.....	.....
(b) Less Depreciation	.....	.....	.....
(c) Net Block	.....	.....	.....
(d) Capital work in progress	.....	.....	.....
(2) Investment			
(3) Current Assets: Loans & Advances			
(a) Inventories	.....	.....	.....
(b) Sundry debtors	.....	.....	.....
(c) Cash and bank balances	.....	.....	.....
(d) Other Current Assets	.....	.....	.....
(e) Loans & Advances	.....	.....	.....
***LESS:* Current Liabilities and Provisions:**			
(a) Liabilities	.....	.....	.....
(b) Provisions	.....	.....	.....
Net Current Assets	.....	.....	.....
(4) *(a)* Miscellaneous expenditure to the extent not written off or adjusted	.....	.....	.....
(b) Profit & Loss Account	.....	.....	.....
TOTAL	.....		

Balance Sheet of .....as at ..... (HORIZONTAL FORM)

LIABILITIES	*Figures for the current Year Rs.*	*Figures for the previous Year Rs.*	**ASSETS**	*Figures for the current Year Rs.*	*Figures for the previous Year Rs.*
Share Capital : Authorised Issued, Subscribed Calledup & Paidup.			**Fixed Assets** Goodwill, Land, buildings, Plant & Machinery, etc.,		
Reserves & Surplus: Capital Reserves, share Premium, Surplus in Profit & Loss A/c.			**Investments:**		
Secured Loans Debentures, Loan from Bank, Other Loans			**Current Assets, Loans And Advances**		
Unsecured Loans Fixed Deposits, other short-term Loans, etc.,			**(A) Current Assets** Stock in hand, Cash balance, Sundry Debtors, etc.,		
Current Liabilities And Provisions:			**(B) Loans & Advances** Rent advances, Telephone Deposits, etc.,		
(A) Current Liabilities Sundry Creditors, Outstanding Expenses, etc.,			**Miscellaneous Expenditure** *(to the extent not written off or adjusted)*		
(B) Provisions: Taxation Provisions, Proposed Dividend, etc.,			**Profit and Loss Account**		
Total	.....	.....	**Total**	.....	.....

AMALGAMATION

Accounting Standard 14 is applicable only for accounting in the books of Purchasing Company. (Transferee Company).

A) Books of Transferor Company (Selling Company)

1. Transfer to Realisation Account
   a. Assets taken over (at book values).
      Debit : Realisation
      Credit : Assets
   b. Liabilities taken over
      Debit : Liabilities
      Credit : Realisation

2. Purchase Consideration
   a. Computation

      Method 1 – Net Assets method

      Purchase consideration. Aggregate of Assets taken over at agreed values Less Liabilities taken over. These Net Assets would be discharged in the manner agreed between the 2 Companies.

      Method 2 – Payments Method

      Purchase consideration is the aggregate of payments made in various forms to share holders of Transferor Company.

      Method 3 – Lump Sum Method

      Purchase consideration is an absolute sum agreed between the 2 Companies without specific reference to Assets & Liabilities taken over. These Lump Sum is paid in the manner agreed between the 2 companies.

   b. Due Entry
      Debit : Purchasing Company
      Credit : Realisation
      (Being purchase consideration due)

   c. Receipt
      Debit : Shares/ Debentures of Purchasing Company.
      Debit : Cash
      Credit : Purchasing Company
      (Being purchase consideration received)

3. Sale of Assets not taken over *(Assuming Profit)*
   Debit : Cash *(Sale Proceeds)*
   Credit : Asset *(Book Value)*
   Credit : Realisation *(Profit)*
   (Being purchase consideration received)

4. Settlement of Liabilities not taken over *(Assuming at a Discount)*
   Debit : Liabilities
   Credit : Bank
   Credit : Realisation
   (Being settlement of liabilities which is not taken over by transferee company)

5. Realisation Expenses

   Situation 1 – Borne by Selling Company.
   Debit : Realisation
   Credit : Bank
   (Being realisation expenses paid)

   Situation 2 – Borne by Purchase Company.
   a. Realisation expenses spent
      Debit : Purchasing Company
      Credit : Bank
      (Being realisation expenses met by the purchasing company)

   b. Reimbursement
      Debit : Bank
      Credit : Purchasing Company
      (Being realisation expenses reimbursed by the purchasing company)

6. Amount due to Share Holders
   a. Transfer of Share Capital & Reserves to Shareholders.
      Debit : Share Capital
      Debit : Reserves
      Credit : Share holders
   b. Transfer of Realisation Profit / Loss (*Assuming Profit*)
      Debit : Realisation
      Credit : Share Holder

7. Settlement to Shareholders of Transferor Company
   Debit : Shareholders
   Credit : Shares / Debentures of Purchasing Company
   Credit : Bank
   (Being Shares / Debentures Issued towards settlement)

B) Books of Transferee Company (Purchasing Company)

a. Types of Amalgamation
   i. Amalgamation nature of Merger.
   ii. Amalgamation nature of Purchase.

b. Conditions / Tests for determining type of Amalgamation
   i. All Assets & Liabilities of transferor company should become the Assets & Liabilities of transferee Company.
   ii. Atleast 90 % of Shareholders *(outside Shareholder where there are inter company holdings)* shall become Shareholders of Purchasing Company.
   iii. Purchase Consideration payable to Equity Shareholder shall be only in the form of Equity Shares of Purchasing Company except that cash may be paid to the extent of fractional holding.
   iv. The Purchasing Company should have the intention of carrying on the same business either to carried on by the Selling Company.
   v. Assets & Liabilities of the Selling Company taken over shall be incorporated at the same values at which they appeared in the books of the Selling Company except to the extent of ensuring uniformity in Accounting Policy.

c. The Scheme of Amalgamation
   i. On satisfying all the above conditions - Amalgamation in the nature of merger.
   ii. On failing to satisfy anyone or all of the above conditions - Amalgamation in the nature of purchase.

d. Method of Accounting
   i. Merger - Pooling of Interest Method
   ii. Purchase - Purchase Method

e. Accounting Entries
   1. Due Entry (*same for both methods*)

      Debit : Business Purchase
      Credit : Liquidator of Selling Company.
   2. Incorporation of Assets & Liabilities taken over

      • ***Pooling of Interest Method***

      Situation 1: Purchase Consideration = Paidup Share Capital of Selling Company.

Debit : Assets Account
Credit : Liabilities
Credit : Reserves (*Selling Company)*
Credit : Business Purchase

Situation 2: Purchase Consideration greater than Paidup Share Capital of Selling Company but less than Combined Paidup Share Capital & Reserves.

(Note: The Journal Entry remains the same except that the reserves of selling Company to be incorporated shall be adjusted for the difference between Purchase Consideration and Paidup Share Capital of Selling Company.)

Situation 3: Purchase Consideration greater than Aggregate of Paidup Share Capital & Reserves of Selling Company.

(Note: The excess of Consideration over Paid up Share Capital shall be adjusted first against reserves of Selling Company & thereafter against reserves of Purchasing Company. Hence, the Reserves of Selling Company incorporated will be nil.)

Situation 4: Purchase Consideration less than Paidup Share Capital

(Note: The excess of Paidup Share Capital over Consideration should be added to the Reserves of Selling Company, while Incorporation.)

• ***Purchase Method***

Debit : Assets Account *(Agreed Values)*
Debit : Goodwill Account *(Balance figure)*
Credit : Liabilities
Credit : Business Purchase
Credit : Capital Reserve (*Balance Figure)*

This Goodwill which represents purchased Goodwill will be amortised over given period and notes to Accounts should spell out the Management policy to amortise the Goodwill.

Additional Adjustment in the Amalgamation in nature of Purchase only. This relates to statutory reserves in the books of selling Company, which have obligations attached to it to be fulfilled.
eg. Reserves Created for Income tax benefits, Capital gains etc.,

a. Journal entry at the time of Acquisition

Debit : Amalgamation Adjustment Account
Credit : Respective statutory Reserve.

Note: a) Statutory Reserve shall appear along with Reserves & Surplus whereas Balance in Amalgamation Adjustment Account will appear in the Assets side under head Miscellaneous Expenses to the extent not written off.

b. Journal entry on Complaints with Conditions Reserve Account no longer to be maintained.

Debit : Statutory Reserve Account
Credit : Amalgamation Adjustment Account.

3. Discharge of Purchase Consideration (*same for both methods*)

Debit : Liquidation of Selling Company
Credit : Equity Shares / Debentures / Cash.

4. Realisation expenses borne by Purchasing Company

i. Amalgamation in the nature of merger
Debit : Reserves
Credit : Cash

ii. Amalgamation in the nature of purchase
Debit : Goodwill / Capital Reserves
Credit : Cash.

INTERNAL RECONSTRUCTION

Meaning:

This is a form of internal arrangement whereby the accumulated losses and unexpired preliminary expenses in the books are written off. This is made possible through Reduction in the face value of the Shares, Reduction in the Paidup value of Shares without reducing the number of Shares, Revaluation of Assets, Waiver of Liability, etc.,

1. Assets

a. Revaluation *(Assuming Profit)*
Debit : Asset Account
Credit : Reconstruction Account

b. Sale of Unproductive Assets *(Assuming Profit)*
Debit : Bank Account *(Sale Proceeds)*
Credit : Assets *(Book Value)*
Credit : Reconstruction *(Profit)*

2. Outside Liabilities

a. Waiver of Amount due on Liabilities by the outsider.

Debit : Liabilities Account
Credit : Reconstruction Account

b. Settlement of Liability at Discount.

Debit : Liabilities Account
Credit : Bank
Credit : Reconstruction Account.

c. Asset taken over by creditors in discharge of Liability (*Assuming Liability discharged is greater than Book Value of Asset*)

Debit : Liabilities Account
Credit : Asset Account
Credit : Reconstruction

d. Conversion of Liability into Secured Debentures / Share Capital

Debit : Liabilities Account
Credit : Debenture / Share Capital.

3. Share Capital

a. Reduction in number of shares - Paid up capital per share being same.

Debit : Share capital Account
Credit : Reconstruction Account

b. Reduction in paid up value per share - No. of shares remaining same.
Note : This represents issue of new class of shares with lower face value in lieu of old shares.

Debit : Equity share capital (*old*) Account
Credit : Equity share capital (*new*) Account
Credit : Reconstruction Account

c. Consolidation / Sub division of shares
Debit : Equity share capital (*old*) Account
Credit : Equity share capital (*new Fixed Value*) Account

4. Utilisation of Reconstruction Surplus

a. For writing off
b. For writing down value of Assets specified.
c. For writing off intangible

Debit : Reconstruction Account
Credit : Profit / Loss Account
Credit : Assets
Credit : Intangible Assets

5. Transfer of Reconstruction surplus (*if any*) **to Capital Reserve**

Debit : Reconstruction Account
Credit : Capital Reserve

Note: Expenses incurred for Reconstruction if any to be debitted to Reconstruction Account.

6. Others

The scheme of Reconstruction normally provides for:

a. Addition to the name of the Company, the words 'and reduced'
b. Disclosure in Annual Accounts, the particulars of reconstruction ie., Date of High Court Order, Adjustment to the value of Assets & Liabilities.

This disclosure is called for a period specified by the court.

VALUATION OF GOODWILL

Definition:

Goodwill is the value of Reputation which the Company / Organisation has gained through its standing in the business. It is the excess earning capacity of such Enterprise / Company.

Methods of Valuing Goodwill:

Average Profits Method, Super Profits Method, Capitalisation Method & Annuity Method.

1. Average Profits Method:

i) Ascerain Profits of Normal year of the Business Return which shall be adjusted for

a) Non recurring items
eg: Profit on sale of Asset

b) Non Operating items
eg: Income from Investments

c) Changes in Business Condition
eg: Change in Tax rates.

ii) Computation of Average Profits

Note: Simple Average = For Fluctuating Profits
Weighted Average = For Increasing / Decreasing Profits in a trend.

iii) Goodwill is Computed as the no. of years purchase of average profits.

Note: No. of years purchase represents the multiplication factor.

2. Super Profits Method:

Step 1 *:* Ascertain Normal Rate of Return (NRR) for the Industry in which the Company whose Goodwill being valued.

Step 2 *:* Compute actual profits - operating profits made by the Company.

Step 3 *:* Compute actual capital employed - Either Terminal Capital employed or Average Capital employed

$$= \frac{\text{Opening Capital Employed + Closing Capital}}{2}$$

(or)

= Closing Capital employed - 1/2 the year profit.

(or)

= Opening Capital employed + 1/2 the year profit.

Capital employed is calculated under two approaches as follows:

(a) Shareholders Approach:

Capital employed = Share capital + Reserves & Surplus – Miscellaneous Expenditure

(b) Longterm funds Approach

Capital employed = Shareholder funds + Longterm borrowings.

The Capital employed ascertained as above is referred as Liabilities side approach and is to be adjusted for the changes in values of Operating Assets and after excluding non operating Assets.

Capital employed can alternatively be calculated under the Assets side Approach as follows:

(a) Value of operating Assets to Business.

(b) Less Outside Liabilities

(c) Capital Employed = (a) - (b)

Step 4 : Compute Normal Profitj ie., excess of actual profits (2) over normal profit (4)

Step 5 *:* Compute super profit ie., excess of actual profits (2) over normal profit (4)

Step 6 *:* Goodwill = No. of Years purchase x Super Profits

3. Capitalisation Method

Steps 1,2 and 3 same as in Super profit method.

Step 4 : Compute Normal Capital employed.

$$\text{Normal Capital employed} = \frac{\text{Actual Profit}}{\text{Normal rate of Return}} \times 100$$

Step 5 : Goodwill = Excess of Normal Capital employed over Actual Capital Employed.

4. Annuity Method

Goodwill under this method calculated by multiplying the Annuity Factor with the Average Profit or Super Profit.

VALUATION OF SHARES

A. Net Asset Value Method

Step 1 : Compute Net Operating Asset (*Refer Capital Employed Computation under Valuation of Goodwill*).

Step 2 : Add Value of Goodwill and Non operating Assets if any *(eg. Investments)*

Step 3 : Divide the aggregate of Step 1 & 2 by the number of shares outstanding as at Valuation date.

B. Yield based

The Various Methods under this are Dividend Capitalisation Method Earnings Capitalisation Method & Productivity Factor Method.

1. Dividend Capitalisation Method

Step 1 : Ascertain Dividend per share

Step 2 : Ascertain Normal rate of return.

Step 3 : Capitalise the Dividend per share at above normal rate of return to arrive at value per share.

$$\text{Value per share} = \frac{\text{DPS}}{\text{NRR}} \times 100$$

(Where DPS = Dividend Per Share
NRR = Normal Rate of Return)

2. Earnings Capitalisation Method

Step 1 : Compute Earnings Per Share (EPS).

Step 2 : Ascertain Normal Rate of Return (NRR).

Step 3 : Value per share is arrived by capitalising at NRR.

$$\text{Value per share} = \frac{\text{EPS}}{\text{NRR}} \times 100$$

3. Productivity Factor Method

Step 1 : Computation of Productivity factor

a. Compute weighted average net worth of a given period.

b. Compute weighted average Profit After Tax (PAT) for the same period.

c. Compute Productivity factor

$$\text{Production Factor} = \frac{\text{Weighted Average PAT}}{\text{Weighted Average Net Worth}} \times 100$$

Step 2 : Ascertain Net worth on the valuation date.

Step 3 : Compute Future Maintainable Profit (FMP).

Future Maintenance Profit = Net Worth x Productivity Factor.

Step 4 : Ascertain Adjusted FMP ie., Future Maintenance Profit as per Step 3 adjusted for changes in business. *(eg. Change of tax rate)*.

Step 5 : Ascertain Normal rate of return.

Step 6 : Capitalise Adjusted FMP at NRR to arrive at value of business.

Step 7 : Add : Non operating Assets (*eg. Investments*) to above value of business.

Less : Preference Share Capital (*if any*)

Step 8 : Value per share = (Step 6 + Step 7) / Number of Shares

4. Market Price Method

Step 1 : Ascertain Earnings Per Share.

Step 2 : Ascertain from published sources the Price Earnings Multiples for similar size Company operating in the same industry.

Step 3 : Value per share = EPS X PE Ratio.

HOLDING COMPANY

Consolidated Balance Sheet:

Step 1 : The date of Acquisition - This is the basis for segregating profit of Subsidiary Company in to Capital & Revenue profit or in otherwords Preacqusition & Post acquisition profits.

Step 2 : The particulars of shareholding as on the date of Consolidated Balance Sheet.

Particulars	*No of Shares*	*Percentage of holding*
1.Holding Company	XXX	XXX
2.Minority Company	XXX	XXX

Step 3 : Segregation shows analysis of profits of subsidiary as at the date of Consolidated Balance Sheet.

Particulars of Reserves	Capital profit (Pre-Acquision Profit)	Post Acquisition Profit (Revenue Reserve)	Post Acquisition Profit (Revenue Profit)
General Reserve	xxx	xxx	xxx
Other Reserve	xxx	xxx	xxx
Revaluation Reserve	xxx	Nil	Nil
Profit & Loss A/c	xxx	xxx	xxx
Total			

Note :

a) *Profits of subsidiary are segregated as Pre acquisition & Post acquisition on the basis of date of acquisition. (Step 1)*

b) *Segregated profits are apportioned between holding Company & Minority Interest on the basis of shareholding pattern as at the date of consolidated balance sheet.(Step 2)*

c) *Preliminary expenses /Miscellaneous expenses shall also be adjusted in the process of segregation of reserves.*

Step 4 : Minority Interest

It is the aggregate of

a) Share Capital of Subsidiary

b) Share of

i) Capital Profit
ii) Revenue Reserve
iii) Revenue Profit

Step 5 : Cost of control

It is the difference between Cost of Investment of Holding company in subsidiary Company and Value of Holding Company's Interest in Subsidiary as on the date of acquisition.

Cost of Acquisition:

a) Cost of Investments (*as per books*)

b) Less : Dividend if any received from subsidiary after the date of acquisition for the period prior to Investment.

Value of Investment (*Holding Company's Interest*)

a) Holding Company's Interest in Share Capital of Subsidiary.

b) Add : Holding Company's Share of Capital profits(*Step3*)

Note : If cost of Acquisition > Value of Investment, then Goodwill = Cost – Value.
If value of Acquisition > Cost of Acquisition, then Capital Reserve = Value – Cost.

Step 6 : Inter Company transactions

a) Calculation of Inter Company owings. *(Debtors/Creditors and loans given/ loans taken).*

b) Creation of Stock Reserve for the unrealized profit on closing stock arising out of inter company sales/purchases. To the extent of Holding Company's Interest, Stock Reserve is created out of Profit. *(Alternatively, stock reserve may also be created for the total unrealized profit)*.

Step 7 : Reserves for Consolidated Balance Sheet

a) Reserves of Holding Company *(as per the books)*

b) Less Dividend received from subsidiary out of pre acquisition profits adjusted against cost of investment *(Step 5)*

c) Add Holding Company Share of Revenue reserves and Revenue Profits of subsidiary *(Step 3)*

d) Less Stock reserve *(Step 6b)*

Step 8 : Consolidated Balance Sheet

Arithmetical addition of Assets & Liabilities of both Holding & Subsidiary companies except for the following.

a) Share Capital - The Holding Company's Share Capital only. Subsidiary Share Capital shall not be taken since it is partly included in Minority Interest and partly adjusted against cost of control.

b) Reserves shall be as arrived at in *Step 7* plus Capital reserve if any as per *Step 5*

c) Outside liability shall be the aggregate net of Inter Company owings.

d) Minority Interest as per *Step 4* shall be shown as liability.

e) Investments shall with aggregate after excluding Investment of Holding Company in Subsidiary Company.

f) Fixed Assets shall be aggregate adjusted for revaluation.

g) Other Assets – receivables shall be aggregate net Inter Company owings and in certain cases the difference being shown as remittance in transit.

h) Contingent liabilities to be added up except for Inter Company Liabilities which will be netted off.

BANKING COMPANY ACCOUNTS

Balance Sheet of a Banking Company as on .....

	Schedule Number	Amount
Liabilities		
Sharecapital	1	xxxxxx
Reserves and surplus	2	xxxxxx
Deposits	3	xxxxxx
Borrowings	4	xxxxxx
Other liabilities	5	xxxxxx
Total		xxxxxx
Assets		
Cash in hand and with RBI	6	xxxxxx
Balance with other bank & Money at call & short notice	7	xxxxxx
Investments	8	xxxxxx
Advances	9	xxxxxx
Fixed assets	10	xxxxxx
Other assets	11	xxxxxx
Contingent liabilities		
Bills for collection	12	xxxxxx
Total		xxxxxx

Schedules forming part of balance sheet

Schedule 1 - Share capital
Authorised , Subscribed & Paidup

Schedule 2 - Reserves & surplus
Profit & loss appropriation account
Share premium
Statutory reserve
Reserve fund
General reserve
Investment fluctuation fund
Debenture redemption fund
Capital reserve

Schedule 3 - Deposits
Current & contingency account
Saving bank account
Fixed deposits
Recuring deposits
Demand deposits
Term deposits
Cash certificates (credits)
Call deposits payable on demand or notice

Schedule 4 - Borrowings
Borrowings
Short loans
Loans (credit)

Schedule 5 - Other liabilities
Rebate on bills discounted
Provisions for taxation
Proposed dividends
Unclaimed dividends
Outstanding expenses
Bank orders
Demand draftsletters of credit
Circular notes
Contingency reserve
Branch adjustments (credit)

Sch. 6 - Cash in hand & with RBI
Cash in Hand , Cash with RBI

Schedule 7 - Balance with other bank & money at call & short notice
Balance with other bank
Money at call & short notice

Schedule 8 - Investments
Short debentures, government certificates & bonds , gold etc.

Schedule 9 - Advances
Loans cash credits & over drafts
Bills purchased & discounted
Less: provision for bad & doubtful debts

Schedule 10 - Fixed Asset
Land, Building , Furniture
Less: Depreciation

Schedule 11 - Other Assets
Outstanding interest on investments
Non banking assets acquired in satisfaction of claims
Advance income tax
Branch adjustments (*Debit*)
Stock of stamps and stationary
Prepaid expenses
Silver, etc.

Schedule 12 - Contingent liabilities
Acceptances, endorsements and other obligations
Guarantees, Claims against the bank not acknowledged as debts
Liability on account of partly paid investments
Outstanding forward exchange transactions, Bill of exchange rediscounted

Profit and Loss Account of a Banking Company

Income	**Schedule**	**Amount**
Interest & discount earned	13	xxxxxx
Other incomes	14	xxxxxx
Less : ***Expenditure***		
Interest expended	15	xxxxxx
Operating expenses	16	xxxxxx
Provisions & contingencies		xxxxxx
Profit for the year		xxxxxx
Add: Balance of Profit & Loss Brought forward from Previous Balance sheet		xxxxxx
		xxxxxx
Less: Transfer to statutory reserve fund	xxxxxx	
Transfer to other reserves	xxxxxx	
Interim Dividend, Proposed dividend etc	xxxxxx	
		xxxxxx
Balance of Profit & Loss Account carried forward to Balance Sheet		xxxxxx

Schedules forming part of Profit & Loss Account

Schedule 13 - Interest & discount earned

Discount on bills
Interest on loan
Interest on overdraft
Interest on cash credits

Schedule 14 - Other Income

Profit on exchange transaction
Less : Loss on Exchange Transaction
Other incomes (*including share of dividends from subsidiaries and amount charged against current account*)

Schedule 15 - Interest Expended

Interest on deposits
Interest on borrowings
Other interest

Schedule 16 - Operating Expenses

All administration expenses like rent, salary, printing & stationery etc.
Provisions & contingencies
Bad debts
Provision for bad debts
Provision for taxation.

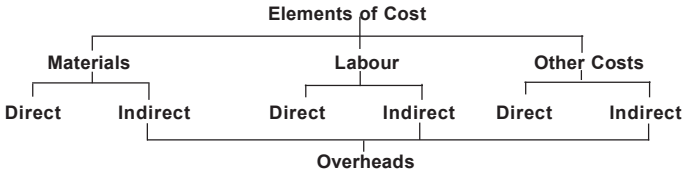
3 Cost Accounting

COST SHEET :

This is a statement showing various elements of Total Cost of a Product.

Need For Cost Sheet :

Mere knowledge of Total Cost cannot fulfill the entire information needs of a management. For a complete control and analysis, classification of Total cost is necessary. Cost sheet will give the components / classification of Total Cost.



Format of Cost Sheet :			**Rs.**
Direct Materials			xxxx
Add	:	Opening stock of Raw Materials	xxxx
Less	:	Closing stock of Raw Materials	(-)xxxx
Direct Labour			xxxx
Direct Costs (if any)			xxxx
Prime Cost			**xxxx**
Factory overhead			xxxx
Add	:	Opening work-in progress	xxxx
Less	:	Closing work-in progress	(-)xxxx
Factory or Manufacturing or Works Cost			**xxxx**
Add:- Administrative overhead			xxxx
Cost of Production			
Add	:	Opening stock of finished goods	xxxx
Less	:	Closing stock of finished goods	(-) xxxx
Cost of Production of goods sold			**xxxx**
Add:- Selling & Distribution overhead			xxxx
Cost of Sales			**xxxx**
Profit			xxxx
Sales			**xxxx**

MATERIAL COSTING

1. Economic ordering quantity or Re-order quantity (ROQ) = $\sqrt{2AO/C}$
   Where A = Annual consumption
   O = Ordering cost per order
   C = Carrying cost per unit
2. Re-order level (ROL) = Maximum delivery period x Maximum usage or consumption.
3. Minimum level or minimum stock level = ROL – {Normal usage x Average delivery period}.
4. Maximum level or maximum stock level = ROL + ROQ – (Minimum consumption x Minimum delivery period)
5. Average stock level = (Minimum level + maximum level) ½ or
   Average stock level = Minimum level + ½ of ROQ or EOQ.
6. Danger Level = Average consumption x Maximum Delivery period.
7. Inventory Turnover Ratio = $\frac{\text{Cost of goods sold}}{\text{Average Inventory}}$
8. Safety stock = $\frac{\text{Max. lead time - Avg. lead time}}{\text{360 days}}$ x Annual Consumption.
9. Carrying Cost = 1/2 x Order Size x Inventory Carrying Cost Per Order.

LABOUR COSTING

Labour Turnover

1. a) Under separation method =

$$\frac{\text{No. of Separation during a period}}{\text{Average no. of. Work force during a period}} \times 100$$

   b) Under replacement method =

$$\frac{\text{No of replacement during a period}}{\text{Avg. No. of work force during period}} \times 100$$

   c) Flux method =

$$\frac{\text{No.of separations + no.of additions}}{\text{Average no. of workers during a period}} \times 100$$

2. Level of activity = Actual production in standard hours/ budgeted hours.
3. Labour efficiency = $\frac{\text{Actual production in standard hours}}{\text{Actual hours worked}}$
4. Labour cost per unit = Direct wages / total no of units.

5. Labour Utilization = Actual hours / Available hours.
6. Absenteesm = No of absentees / Average no of employees.
7. Accident frequency per week = $\frac{\text{No of accidents to date}}{\text{No of weeks of date.}}$
8. Illness = Hours lost due to Illness / Total labour hours.
9. Labour productivity = Production in standard hours / Actual hours.
10. Earning under time rate = Hours worked X Rate per hour.
11. Earning under straight Piece rate system = No of units X Rate per unit.
12. Earning under Taylor's differential piece rate system = Low Piece rate if the actual output is below standard. High piece rate if the actual output is above standard.
13. Merrick's differential piece rate system

Outputs	**Payment**
Upto 83%	Ordinary piece rate
83% to 100%	110% of ordinary piece rate
Above 100%	120% of ordinary piece rate.

14. Gantt task bonus plan

Output	**Payment**
Output below standard	Time rate
Output at standard	20% bonus on time rate
Output above standard	High piece rate on the entire output

15. Halsey Premium plan
    Earning = Actual hours x rate per hour + 50% of time saved x Rate per hour.
16. Rowan System
    Earning = (Hours worked x rate per hour) + (Time saved / Time allowed) x Hours worked x rate per hour.
    where Time saved = Time allowed – Time Taken.
17. Emerson's efficiency bonus
    Earnings = Actual hours x rate per hour + bonus percentage x hour worked x rate per hour.

Bonus calculation:

Efficiency	**Bonus**
Upto 66 2/3%	No bonus
66 2/3% to 100%	20% of hourly rate
above 100%	20% + 1% for every 1% increase in efficiency.

OVERHEADS

Basic of distribution of overheads

Item	Basis
Canteen expenses, Time keeping, Staff welfare etc.	No of employees or wages.
Depreciation	Value of assets or value of Investments
Electricity power	No. of light points or floor space Horse power or Horse power x Machine Hours.
Delivery expenses	Weight, volume or tonne
Audit fees	Sales or total cost
Cost of store keeping	No. of requisitions
Rent	Area
Supervision	No. of employees
Insurance	Value of assets

1. Overhead absorption rate or overhead recovery rate = overhead incurred/ basis of absorption.
2. Overhead rate (predetermined) = Budgeted overhead for the period/ budgeted base for the period.
3. Overhead rate (blanket rate) = Overhead cost for the factory / Total quantum of the base selected.

RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

Profit as per Cost Accounts		xxxxx
ADD :		
1. Income considered in financial records but not considered in cost records	xxxxx	
2. Expenses considered in cost records but not considered in financial records	xxxxx	
3. Expenses charged less in financial records but charged more in cost records	xxxxx	
4. Income shown excess in financial records but shown less in cost records	xxxxx	
5. Over absorption of overheads in cost records	xxxxx	
6. Over valuation of opening stock in cost records	xxxxx	
7. Under valuation of closing stock in cost records	xxxxx	
		xxxxx
Profit as per Profit & Loss Account		xxxxx

CONTRACT COSTING

The profitability of contractors is derived based on the percentage of completion.

1. If the work completed is less than 1/4 th of the contract value, the profit to be transferred to the profit & loss account is NIL.
2. If the work completed is between 25% to 50%, the profit to be transferred to the profit & loss account is Notional profit x 1/3 x cash received / work certified.
3. If the work completed is greater than 50%, Notional profit x 2/3 x cash received / work certified.
4. For the contracts which are almost complete:

   Any one of the following formula can be used for circulation of profit.

   i) Estimated profit x work certified / contract price.

   ii) Estimated profit x work certified / contract price x cash received / work certified.

   iii) Estimated profit x cost of work to date / estimated total cost.

   iv) Estimated profit x Cost of work to date / Estimated total cost x cash received / work certified.

   {Estimated profit = contract price - [total expenditure + provision for contingency] }

Work in progress = work certified + work uncertified - {cash received + profit reserve} i.e. Unrealised profit.

MARGINAL COSTING AND COST VOLUME PROFIT ANALYSIS

1. Variable Overhead per unit = $\frac{\text{change in amount of expense}}{\text{change in activity or quantity.}}$
2. Contribution = Sales - Variable cost.
3. Contribution = Fixed cost + profit.
4. Contribution = Sales x P/V Ratio.
5. Profit = Contribution - Fixed cost.
6. Sales - Variable cost = Fixed cost + Profit.
7. P/V Ratio = Contribution/Sales x 100.
8. P/V Ratio = change in contribution / change in Sales.
9. P/V Ratio = change in profit / change in Sales.
10. Sales = Contribution / P/V Ratio.

11. Variable cost ratio / Marginal cost ratio = 1- P/V Ratio.
12. Breakeven point in (value) = Fixed cost / P/V Ratio.
13. Breakeven point in (volume) = Fixed cost / contribution per unit.
14. Sales to earn a desired profit in (value) =

$$\frac{\text{Fixed cost + Desired profit}}{\text{P/V Ratio.}}$$

15. Sales to earn a desired profit in (volume) =

$$\frac{\text{Fixed cost + Desired profit}}{\text{Contribution per unit.}}$$

16. Margin of safety in value = Actual Sales - Breakeven point sales.
17. Margin of Safety (in value) = Profit /P/V ratio.
18. Margin of safety (in volume) = Profit / contribution per unit.
19. Margin of safety (in %) = $\frac{\text{Margin of safety}}{\text{Actual sales}}$ x 100
20. Sales at a point of loss = Fixed cost – Loss/ P/V ratio
21. Profit = (Sales x P/V ratio) – (Fixed cost).
22. P/V ratio = Profit / Margin of safety.

Budgetory Control

1. Standard capacity usage ratio = (Budgeted No. of working hours / Maximum hours in a Budget period) x 100.
2. Actual usage of Budget capacity or standard capacity ratio = (Actual No of working hours / Budgeted No of working hours)x 100.
3. Actual capacity usage ratio = (Actual working hours / Maximum hours in a period) x 100.
4. Level of activity ratio =(Actual production in standard hours / Budgeted production in standard hours) x 100.
5. Efficiency ratio = (Actual production in standard hours /Actual hours worked) x 100.
6. Calender ratio = (Actual working days in a period / Budgeted working days in a period) x 100.
7. Flexible Budget Allowance = (Budgeted fixed Overheads - Budgeted Fixed overhead Standard capacity usage ratio Level of activity ratio)

STANDARD COSTING/VARIANCE ANALYSIS

Definition :

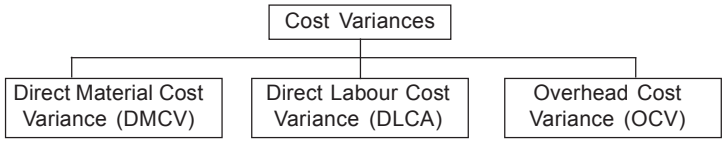
Standard Costing is the preparation of Standard Costs and applying them to measure the variations from actual costs and analyzing the causes of variation with a view to maintain maximum efficiency in production.

Variance Analysis : It is a technique which uses standards for costs and revenues for the purpose of control through variance analysis. Comparing actual performance with the standard performance and correcting the deviations is known as variance. The variance may be favourable or unfavourable depending upon the circumstances.

Unfavourable : If the actual cost is more than the standard cost it is said to be unfavourable or adverse.

Favourable : If the standard cost is more than the actual cost the variance will be termed as favourable.

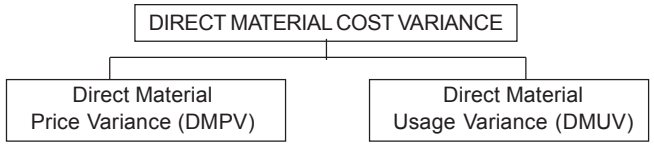
COST VARIANCES



Formulae

DIRECT MATERIAL COST VARIANCE

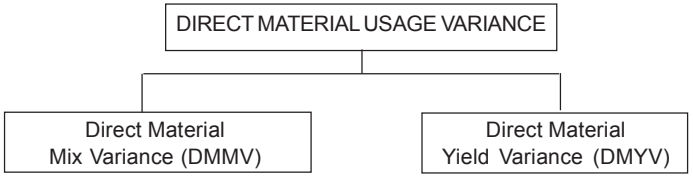
1. Direct Material Cost Variance = Total Standard Cost for actual output – Total actual cost.
   = (Standard price × Standard quantity for Actual output) – (Actual Price × Actual Quantity)



2. Direct Material Price Variance (DMPV) = Actual Quantity × (Standard Price – Actual Price)
3. Direct Material Quantity or Usage Variance = Standard Rate × (Standard Quantity for Actual Output – Actual Quantity)

Verification :

Direct Material Cost Variance = Direct Material Price Variance + Direct Material Usage Variance



4. Direct Material Mix Variance (DMMV) = Standard Price × (Revised Standard Quantity – Actual Quantity)

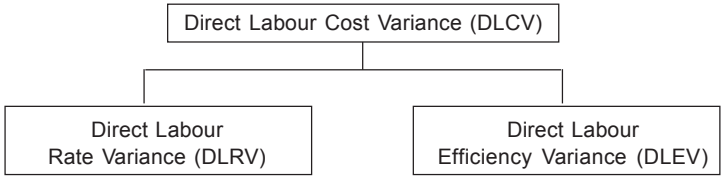
   * Revised Standard Quantity = $\frac{\text{Total Weight of Actual Mix}}{\text{Total Weight of Standard Mix}}$ × Standard Quantity

5. Direct Material Yield Variance = Standard Cost per unit × (Standard Output for Actual Mix – Actual Output)

Verification :

Direct Material Usage Variance = Direct Material Mix Variance + Direct Material Yield Variance

DIRECT LABOUR COST VARIANCE



6. Direct Labour Cost Variance = Standard Cost for Actual Output – Actual Cost.

   or

   (Standard Rate × Standard Time for Actual Output) – (Actual Rate × Actual Time)

7. Direct Labour Rate Variance = Actual Time × (Standard Rate – Actual Rate)

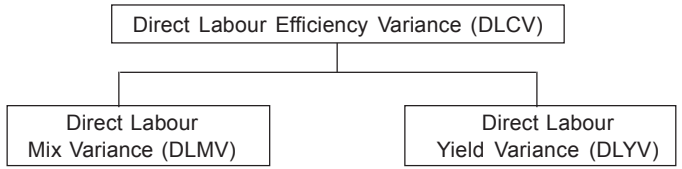
8. Direct Labour Efficiency Variance = Standard Rate × Standard Time for Actual Output – Actual Time

9. Idle Time Variance = Standard Hourly Rate × Idle Hours

Verification :

Direct Labour Cost Variance = Direct Labour Rate Variance + Labour Idle Time Variance + Labour Efficiency Variance

DIRECT LABOUR EFFICIENCY VARIANCE



10. Direct Labour Mix Variance = Standard Rate × (Revised Standard Time – Actual Time)

    * Revised Standard Time = $\frac{\text{Total Actual Time}}{\text{Total Standard Time}}$ × Standard Time

    * Revised Labour Efficiency Variance = Standard Rate × Standard Time for Actual Output – Revised Standard Time

11. Labour Yield Variance

    Direct Labour Yield Variance = Standard Cost per unit × (Standard Output for Actual Mix – Actual Output)

* Standard Cost Price Variance = Total Standard Cost ÷ Standard Output

* Standard Output for Actual Variance = Actual Mix ÷ Standard Mix

Verification :

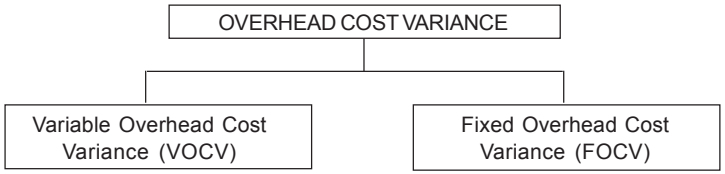
Direct Labour Efficiency Variance= Direct Labour Mix Variance + Direct Labour Yield Variance

III OVERHEAD VARIANCE

12. Overhead Cost Variance (OCV) = Recovered Overheads – Actual Overheads

* Standard Overhead Rate per unit = $\frac{\text{Budgeted Overheads}}{\text{Budgeted Output or Budgeted Hours}}$

* Recovered Overheads = Standard Rate per hour × Standard Hours for Actual Output



13. Variable Overhead Cost Variance = Recovered Variable Overheads – Actual Variable Overheads

    where

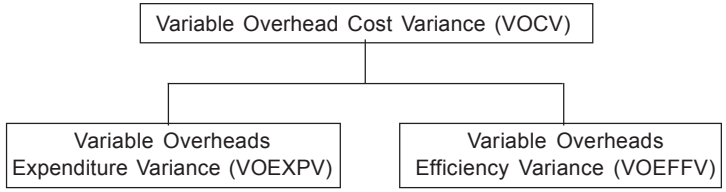
    * Recovered Variable Overheads = Actual Output × Standard Variable Overheads Rate per unit

    * Actual Variable Overheads = Actual Rate per unit × Actual Output or Actual Rate per Hour × Actual Hours

14. Fixed Overhead Cost Variance (FOCV) = Recovered Fixed Overheads – Actual Fixed Overheads

    Where

    * Recovered Fixed Overheads = Actual Output × Standard Fixed Overheads Rate per unit



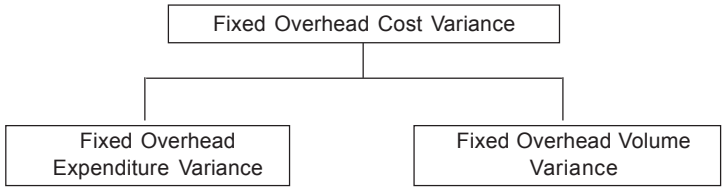
15. Variable Overhead Expenditure Variance = Actual Time × (Standard Variable Overheads Rate per hour – Actual Variable Overheads Rate per hour

    or

    Standard Variable Overheads – Actual Variable Overheads

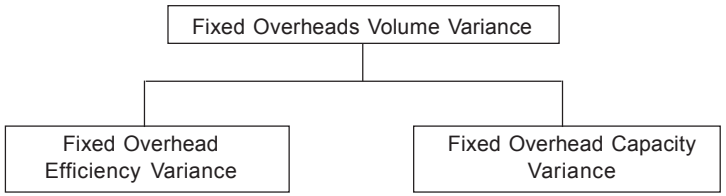
16. Variable Overheads Efficiency Variance = Standard Variable Overheads Rate per hour × (Standard Hours for Actual Production – Actual Hours)

FIXED OVERHEAD VARIANCE



17. Fixed Overhead Expenditure Variance = Budgeted Fixed Overheads – Actual Fixed Overheads

18. Fixed Overheads Volume Variance = Recovered Fixed Overheads – Budgeted Fixed Overheads



19. Fixed Overhead Efficiency Variance = Standard Fixed Overhead Rate per hour × (Standard Hour for Actual Production – Actual Hours)

20. Fixed Overhead Capacity Variance = Standard Fixed Overhead Rate per hour × (Actual Hours Worked – Budgeted Hours)

21. Capacity Variance = Standard Overheads – Budgeted Overheads

22. Calendar Variance = Standard Rate per hour (or) per day × Excess or Deficit Hours (or) Days worked

23. Revised Capacity Variance = Capacity Variance – Calendar Variance

Note :

1. Standard Overhead Rate per unit = $\frac{\text{Budgeted Overheads}}{\text{Budgeted Output}}$

2. Standard Overhead Rate per hour = $\frac{\text{Budgeted Overheads}}{\text{Budgeted Hours}}$

3. Standard Hours for Actual Output = $\frac{\text{Budgeted Hours}}{\text{Budgeted Output}}$ × Actual Output

4. Standard Output for Actual Time = $\frac{\text{Budgeted Output}}{\text{Budgeted Hours}}$ × Actual Hours

5. Recovered or Absorbed Overheads = Standard Rate per unit × Actual Output
   or
   Standard Rate per unit × Standard Hours for Actual Output

6. Budgeted Overheads = Standard Rate per unit × Budgeted Output
   or
   Standard Rate per hour × Budgeted Hours

7. Standard Overheads = Standard Rate per unit × Standard Output for Actual Time
   Or
   Standard Rate per hour × Actual Hours

8. Actual Overheads = Actual Rate per unit × Actual Output
   Or
   Actual Rate per Hour × Actual Hours

IV. SALES VARIANCES

With reference to Turnover

25. Value Variance = Budgeted Sales – Actual Sales
26. Price Variance = Standard Sales – Actual Sales
    or
    Actual Quantity sold × (Standard Price – Actual Price)
27. Volume Variance = Standard Price × (Budgeted Quantity – Actual Quantity)
    or
    Budgeted Sales – Standard Sales
28. Mix Variance = Standard Price × (Revised Standard Quantity – Actual Quantity)

* Revised Standard Quantity = $\frac{\text{Total Quantity of Actual Mix}}{\text{Total Quantity of Standard Mix}}$ × Standard Quantity

29. Quantity Variance = Budgeted Sales – Revised Standard Sales

With Reference to Profit

30. Price Variance = Standard Profit – Actual Profit
    or
    Actual Quantity × (Standard Profit per unit – Actual Profit per unit)
31. Volume Variance = Budgeted Profit – Standard Profit
    or
    Standard Rate of Profit × (Budgeted Quantity – Actual Quantity)
32. Mix Variance = Revised Standard Profit – Standard Profit
33. Quantity Variance = Budgeted Profit – Revised Standard Profit

4 Management Accounting

RATIO ANALYSIS

Profitability Ratios :

1. Return on Capital Employed (ROCE) or Return on Investment (ROI)

$$ROI = \frac{\text{Profit}}{\text{Capital Invested}}$$

$$\text{or} = \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Invested}} \times 100$$

2. Earnings per Share (EPS) $= \dfrac{\text{Profit after tax \& Dividend}}{\text{No. of equity shares}}$

Or

$$\frac{\text{Profit available for equity sharehholders}}{\text{No. of equity share}}$$

3. Gross Profit Margin $= \dfrac{\text{Sales - cost of goods sold}}{\text{Sales}} \times 100$

Or

$$= \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

4. Net Profit Margin $= \dfrac{\text{Net Profit before interest and tax}}{\text{Net Sales}} \times 100$

5. Cash Profit Ratio $= \dfrac{\text{Cash profit}}{\text{Sales}} \times 100$

6. Cash Profit = Net Profit + Depreciation

7. Return on assets $= \dfrac{\text{Net Profit after Tax}}{\text{Total assets}} \times 100$

8) Return on Shareholders funds or Return on net worth = $\frac{\text{Net Profit after interest and tax}}{\text{Net worth}} \times 100$

9) Net worth = Equity Capital + Reserves and Surplus

Solvency ratios

Long-term Solvency ratios

1) Debt-Equity ratio = $\frac{\text{Long-term debt}}{\text{Shareholders funds}}$

2) Shareholders Equity ratio = $\frac{\text{Shareholders Equity}}{\text{Total assets (Tangible)}}$

3) Debt to Net worth ratio = $\frac{\text{Long-term debt}}{\text{Net worth}}$

4) Capital Gearing ratio = $\frac{\text{Fixed interest bearing funds}}{\text{Equity Shareholder's funds}}$

5) Fixed assets to Long-term = $\frac{\text{Fixed assets}}{\text{Long-term funds}}$

6) Dividend Coverage ratio = $\frac{\text{Net Profit after tax}}{\text{Dividend}}$

7) Interest Cover = $\frac{\text{Profit before interest, depreciation and tax}}{\text{Interest charges}}$

Short-term Solvency Ratios :

1) Current ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

2) Quick or Liquid ratio = $\frac{\text{Current Assets - Inventories Prepaid expenses}}{\text{Current Liabilities}}$

Activity or Turnover Ratios

1) Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average Inventory}}$

or $\frac{\text{Cost of Sales}}{\text{Average Inventory}}$

where

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

2) Inventory ratio = $\frac{\text{Inventory}}{\text{Current assets}} \times 100$

3) Debtors turnover ratio = $\frac{\text{Net Credit Sales}}{\text{Average Debtors}}$

4) Average Debtors collection period (in days) = $\frac{\text{Average Debtors}}{\text{Credit Sales}} \times 365$

5) Bad debts to sales ratio = $\frac{\text{Bad Debts}}{\text{Sales}}$

6) Average payment period (in days) = $\frac{\text{Average Creditors}}{\text{Purchases}} \times 365$

Or $\frac{365}{\text{Creditors turnover Ratio}}$

7) Creditors turnover ratio = $\frac{\text{Credit Purchase}}{\text{Average Creditors}} \times 100$

8) FixedAssets turnover ratio = $\frac{\text{Sales}}{\text{Fixed assets}} \times 100$

9) Total assets turnover ratio = $\frac{\text{Sales}}{\text{Total assets}} \times 100$

10) Working Capital turnover ratio = $\frac{\text{Sales}}{\text{Working Capital}} \times 100$

11) Sales to Capital employed ratio = $\frac{\text{Sales}}{\text{Capital employed}} \times 100$

Operating Ratios

1) Material Cost ratio = $\frac{\text{Material consumed}}{\text{Sales}} \times 100$

2) Labour Cost ratio = $\frac{\text{Labour Cost}}{\text{Sales}} \times 100$

3) Factory overhead ratio = $\frac{\text{Factory expenses}}{\text{Sales}} \times 100$

4) Administrative expenses ratio = $\frac{\text{Administrative expenses}}{\text{Sales}} \times 100$

5) Selling and Distribution expenses ratio = $\frac{\text{Selling and Distribution expenses}}{\text{Sales}} \times 100$

Market test Ratios

1) Dividend Payout ratio = $\frac{\text{Dividend per Share}}{\text{Earnings per Share}}$

2) Dividend Yield Ratio = $\frac{\text{Dividend per Share}}{\text{Market Price}} \times 100$

3) Price Earnings ratio = $\frac{\text{Current market price}}{\text{Earnings per Share}}$

Working Capital Management

1) Gross Operating Cycle = Raw material conversion period + Work-in-process conversion period + Finished goods conversion Period + Book debts conversion period

2) Net Operating Cycle = Gross Operating Cycle - Payment deferral period

3) Working Capital Leverage = $\frac{\text{C.A.}}{\text{T.A.} - \Delta \text{ C.A.}}$

Where, C.A. = Current assets

T.A. = Total assets (i.e. Net fixed assets + Current assets)

Δ C.A. = Change in Current assets.

Debtors and Inventory Management

Economic Order Quantity (EOQ)

$EOQ = \sqrt{2AB / CS}$

Where A - Annual demand

B - Ordering cost

C - Carrying costage

S - Price perunit

Inventory Levels

- Re-order Level = Maximum usage x Maximum reorder Period.
- Minimum Stock Level = Re-order level - (Average or Normal Usage x Average lead Time)
- Maximum Stock level
  = Re-order level + Economic Order Quantity - (Minimum usage x Minimum reorder period)

COST OF CAPITAL AND LEVERAGE

Cost of Equity (KE)

$$\text{Dividend Yield method} = \frac{\text{Dividend}}{\text{Market Price}} \times 100$$

Leverage

$$\text{1) Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}}$$

$$\text{2) Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$\text{3) Total Leverage} = \frac{\text{Contribution}}{\text{EBT}}$$

Where EBIT = Earnings Before Interest and Tax.

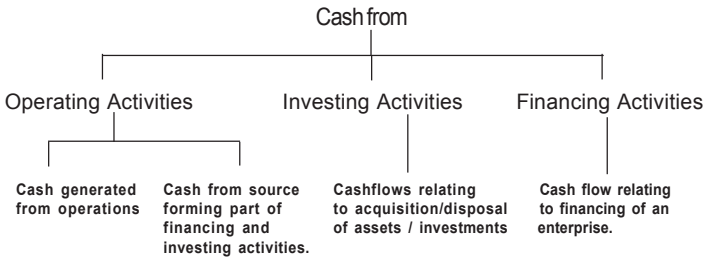
EBT = Earnings Before Tax.

Statement of Marginal Cost

Sales	xxx
Less : Variable Cost	xxx
Contribution	xxx
Less : Fixed Cost	xxx
Profit (EBIT)	xxx
Less : Interest	xxx
EBT	xxx

CASH FLOW STATEMENT

The sources and uses are summarised under 3 heads:



Form of Cash Flow Statement

A. **Cash Flows from Operating Activities**

DIRECT METHOD

1. Cash receipts from customers
2. Cash paid to Suppliers/employees/expenses
3. Cash generated from operations
4. Taxes Paid
5. Cash flow before Extra-ordinary items
6. + / - Extra - ordinary Items
7. Net Cashflow from operating activites

(or)

INDIRECT METHOD (Alternative Method)

1. PBT & Extra-ordinary items.
2. Depreciation and other non-cash items.
3. +/- Non-operating items.
4. Operating Profit before Working Capital changes.
5. Adjustments for Working Capital changes.
6. Cash generated from operations.
7. Taxes paid.
8. Cash flow before extra-ordinary items.
9. +/- Extra Ordinary Items.
10. Net Cashflow from Operating Activities.

B. Cash flow investing activities.

1.	Sale proceeds of assets	xxx	
2.	Sale proceeds of investments	xxx	
3.	Income from investments	xxx	
4.	Purchase of Assets	xxx	
5.	Purchases of Investments	xxx	
	Net Cash from investing activities		xxx

C. Cash flow from financing activities

1.	Issue of Shares	xxx	
2.	Additional borrowings	xxx	
3.	Redemption of Shares	xxx	
4.	Redemption of Borrowings	xxx	
5.	Payment of Dividend	xxx	
6.	Payment of Interest on longterm borrowings	xxx	
	Net Increase/Decrease in Cash and Cash equivalent		xxx

Notes (Forming Part of Cash Flow Statement)

1. *Definition of Cash and Cash Equivalents.*
2. *Reconciliation of Cash and Cash Equivalents.*
3. *Management statement on commitments against cash balance.*
4. *Increase in operating capability of an enterprise or cash required to maintain operating Capability.*

Funds Flow Statement

Fund generally refers to Working Capital Steps.

I Schedule of changes in Working Capital

Particulars	Previous Year	Current Year	Increase	Decrease
Current Assets				
Stock				
Debtors				
Prepaid expenses				
Bank				
Cash, etc				
Total (A)	xxxx	xxxx		

Current Liabilities			
Sundry Creditors			
Provision for Taxation *			
Proposed Dividend			
Bank overdraft			
Bills Payable etc.			
Total (B)	xxxx	xxxx	
Increase / Decrease in Working Capital (A - B)			

* Provision for Taxation and Proposed dividend can be taken as current assets provided there are no adjustments. If there is adjustments, Seperate Ledger accounts have to be opened and they have to be treated as non current assets as explained below

Dr **Provision for Taxation A/c** Cr

Particulars	Rs.	P.	Particulars	Rs.	P.
To Cash (taxpaid)	xxx		By Balance b/d	xxx	
To Balance c/d	xxx		By Profit and Loss A/c	xxx	
	xxx			xxx	

Dr **Accumulated Depreciation A/c** Cr

Particulars	Rs.	P.	Particulars	Rs.	P.
To Fixed Assets A/c	xxx		By Balance b/d	xxx	
To Balance c/d	xxx		By Profit and Loss A/c	xxx	
	xxx			xxx	

Dr **Fixed Asset A/c** Cr

Particulars	Rs.	P.	Particulars	Rs.	P.
To Balance b/d	xxx		By cash (sale)	xxx	
To Profit & Loss	xxx		By Depreciation	xxx	
(profit on sale)			By Profit for Loss	xxx	
To Cash (Purchases)	xxx		By Balance c/d	xxx	
	xxx			xxx	

Dr **Adjusted Profit and Loss Account** Cr

Particulars	**Rs.**	**P.**	**Particulars**	**Rs.**	**P.**
To General Reserve	xxx		By Balance b/d	xxx	
To Goodwill w/o	xxx		By Profit on Sale A/c	xxx	
To Provision for Taxation	xxx		By Funds from operations	xxx	
To Depreciation	xxx				
To Proposed Dividend (current year)	xxx				
To Loss on sale of asset	xxx				
To Balance c/d	xxx				
	xxx			xxx	

Funds Flow Statement

Sources	**Rs.**	**P.**	**Applications**	**Rs.**	**P.**
Increase in Share Capital	xxx		Redemption of pref. shares	xxx	
Issure of Share	xxx		Redemption of debentures	xxx	
Sale of Fixed Assets	xxx		Purchase of Fixed Assets	xxx	
Decrease in working capital	xxx		Payment of Tax	xxx	
Funds from operations	xxx		Payment of Dividend	xxx	
Receipt of Loans	xxx		Increase in working capital	xxx	
			Payment of Loans	xxx	
	xxx			xxx	

5 Statistics

MEASURES OF CENTRAL TENDANCY

Arithmetic Mean :

(i) Raw Data :

Direct Method

$$\bar{x} = \frac{\Sigma x}{N}$$

Format :

X	N
Σx	N

Short Cut Method :

$$\bar{x} = A + \frac{\Sigma d}{N}$$

Format :

X	N	d = x – A
	N	Σd

where A = Assumed Mean

(ii) Discrete Series :

Direct Method

$$\bar{x} = \frac{\Sigma fx}{N}$$

where

f = frequency

x = Variable in question

N = Total No. of observations (ie) Σf

Format :

X	f	fx
	N	Σfx

Shortcut Method :

$$\bar{x} = A + \frac{\Sigma fd}{N}$$

where

A = Assumed Mean

d = (x – A)

N = Σf

Format :

X	f	d = X – A	fd
	N		Σfd

(iii) Continuous Series :

Direct Method :

$$\bar{x} = \frac{\Sigma fm}{N}$$

where

m = mid point = $\frac{\text{lower limit} + \text{upper limit}}{2}$

N = Σf

Format :

Class	Midpoint (m)	f	fm
		N	Σfm

Short Cut Method :

$$\bar{x} = A + \frac{\Sigma fd}{N}$$

where

A = Assumed Mean

format

Class	m	f	d = $\frac{m-A}{i}$	fd
		N		Σfd

where

A = Assumed Mean

i = width of the class interval

Median

(i) Raw Data

Size of $\left(\frac{N+1}{2}\right)^{th}$ item

Format :

S.No.	Data in ascending order

(ii) Discrete Data

Size of $\left(\frac{N+1}{2}\right)^{th}$ item.

Format :

Data in ascending order	f	cf
	N	

Where cf = cumulative frequency

(iii) Continuous Data :

Median = $L + \frac{N/2 - c.f.}{F} \times i$

where

L = lowest limit, in class interval

c.f. = cumulative frequency

F = frequency of the median class

i = Class interval

Format :

Class	f	cf

Mode :

(i) Raw Data :
The number occurs more number of times.

(ii) Discrete Series :
Number with higher frequency

(iii) Continuous Series :

$$\text{Mode} = L + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \times i$$

where

f_1 = Frequency previous to modal class
f_0 = Frequency of the modal class
f_2 = Frequency next to modal class
L = Lowest class limit of the modal class

Format

Class	f

Geometric Mean :

(i) Raw Data

$$\text{G.M.} = \text{Antilog}\left[\frac{\Sigma \log x}{N}\right]$$

Format :

x	log x
	Σlog x

(ii) Discrete Data :

$$\text{G.M.} = \text{Antilog}\left[\frac{\Sigma f \log x}{\Sigma f}\right]$$

Format :

x	f	log x	f log x
	N		Σflogx

(iii) Continuous Data :

$$\text{G.M.} = \text{Antilog}\left[\frac{\Sigma f \log m}{\Sigma f}\right]$$

Format :

Class	m	f	log m	f log m
				Σf log m

Harmonic Mean :

(i) Raw Data

$$\text{H.M.} = \frac{N}{\sqrt{1/x}}$$

Format :

x	1/x
	Σ1/x

(ii) Discrete

$$\text{H.M.} = \frac{N}{\sqrt{f/x}}$$

Format :

x	f	f/x
	N	Σf/x

(iii) Continuous

$$\text{H.M.} = \frac{N}{\sqrt{f/m}}$$

Format :

Class	m	f	f/m
			Σf/m

MEASURES OF DISPERSION

Mean Deviation :

(i) Raw Data

$$M.D = \frac{\Sigma\left(x - \bar{x}\right)}{N}$$

or

$$M.D. = \frac{\Sigma|D|}{N}$$

Where, |D| = Deviation from median ignoring sign.

Format :

X	|D|
N	ΣD

(ii) Discrete

$$M.D = \frac{\Sigma f\left(x - \bar{x}\right)}{\Sigma f}$$

or

$$M.D = \frac{\Sigma f|D|}{N}$$

Format :

X	f	C.F.	|D|	f|D|
	N			Σf|D|

(iii) Continuous

$$M.D = \frac{\Sigma f\left(m - \bar{x}\right)}{\Sigma f}$$

Format :

Class	f	cf	m	|D|	f|D|
					Σf|D|

Standard Deviation :

(i) Raw :

$$\sigma = \sqrt{\frac{\Sigma x^2}{N}}$$,where $X = x - \bar{x}$

Format :

x	$\left(x - \bar{x}\right)X$	x^2
N		Σx^2

(ii) Discrete Series :

(a) Actual Mean

$$\sigma = \sqrt{\frac{\Sigma fX^2}{N}}$$

where $x = x - \bar{x}$

Format :

x	$\left(x - \bar{x}\right)X$	f	fX	fX^2
		N		ΣfX^2

(b) Assumed Mean

$$\sigma = \sqrt{\frac{\Sigma fd^2}{N} - \left(\frac{\Sigma fd}{N}\right)^2}$$

where d = (x – A)

Format :

x	f	(x – A)d	fd	fd^2
	N		Σfd	Σfd^2

(c) Step Deviation

$$\sigma = \sqrt{\frac{\Sigma fd^2}{N} - \left(\frac{\Sigma fd}{N}\right)^2} \times i$$

Format :

x	f	$\left(\frac{x-a}{i}\right)=d$	fd	fd^2
	N		Σfd	Σfd^2

(iii) Continuous Series :

$$\sigma = \sqrt{\frac{\Sigma fd^2}{N} - \left(\frac{\Sigma fd}{N}\right)^2} \times i$$

Where

$$d = \frac{(m-A)}{i}$$

i = Class Interval

Format :

Class	m	f	$\left(\frac{m-A}{i}\right)=d$	fd	fd^2
		N		Σfd	Σfd^2

Quartile Deviation :

(i) Quartile deviation = $\frac{Q_3 - Q_1}{2}$

(ii) Co-efficient of Quartile deviation = $\frac{Q_3 - Q_1}{Q_3 + Q_1}$

(iii) Deviation taken from assumed mean (σ) = $\sqrt{\frac{\Sigma fd^2}{N} - \left(\frac{\Sigma fd}{N}\right)^2}$

where d = X – A
f = frequency

(iv) Co-efficient of variation = $\frac{\sigma}{x} \times 100$

CORRELATION

(i) Direct Method

$$r = \frac{N\ \Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{N\Sigma x^2 - (\Sigma x)^2}\ \sqrt{N(\Sigma y^2) - (\Sigma y)^2}}$$

Format :

x	x^2	y	y^2	xy
Σx	Σx^2	Σy	Σy^2	Σxy

(ii) Simple Method

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 . \Sigma y^2}}$$

where

X = $\left(x - \bar{x}\right)$; Y = $\left(y - \bar{y}\right)$

Format :

$1 - \frac{6\Sigma D^2}{N^3 - N}$

x	$X = \left(x - \bar{x}\right)$	X^2	y	$Y = \left(y - \bar{y}\right)$	Y^2	XY
Σx	$\Sigma X = 0$	ΣX^2	Σy	$\Sigma Y = 0$	ΣY^2	ΣXY

Assumed Mean :

$$r = \frac{N\ \Sigma dxdy - \Sigma dx \Sigma dy}{\sqrt{N\Sigma dx^2 - (\Sigma dx)^2}\ \sqrt{N\Sigma dy^2 - (\Sigma dy)^2}}$$

Format :

x	dx = x – A	dx^2	y	dy = y – A	dy^2	dxdy
N	Σdx	Σdx^2		Σdy	Σdy^2	$\Sigma dxdy$

Rank Correlation

(i) When ranks are given :

R =

Format :

R_1	R_2	$D = R_1 - R_2$	D^2
			ΣD^2

(ii) When ranks are not given :

$$R = 1 - \frac{6\Sigma D^2}{N^3 - N}$$

Format :

x	Rx	y	Ry	D = Rx – Ry	D^2
					Σd^2

(iii) Equal Ranks :

$$R = 1 - \frac{6\Sigma D^2 + \frac{1}{12}(m^3 - m) + \frac{1}{12}(m^3 - m) + ...}{N^3 - N}$$

Format :

x	R_1	y	R_2	$D = R_1 - R_2$	D^2
					ΣD^2

REGRESSION

1. *Equation x on y*

$x = a + by$

$\Sigma x = Na + b\Sigma xy$

$\Sigma xy = a\Sigma y + b\Sigma y^2$

Equation y on x

$y = a + bx$

$\Sigma y = Na + b\Sigma x$

$\Sigma xy = a\Sigma x + b\Sigma x^2$

Format :

x	y	xy	x^2	y^2
Σx	Σy	Σxy	Σx^2	Σy^2

2. Deviations taken

x on y

$$x - \bar{x} = r\frac{\sigma x}{\sigma y}\left(y - \bar{y}\right)$$

$$r\frac{\sigma x}{\sigma y} = \frac{\Sigma xy}{\Sigma y^2}$$

$$\bar{x} = \frac{\Sigma x}{N}; \quad \bar{y} = \frac{\Sigma y}{N}$$

y on x

$$y - \bar{y} = r\frac{\sigma x}{\sigma y}\left(x - \bar{x}\right)$$

$$r\frac{\sigma y}{\sigma x} = \frac{\Sigma xy}{\Sigma x^2}$$

Format :

x	$x = x - \bar{x}$	x^2	y	$y = y - \bar{y}$	y^2	xy
Σx	$\Sigma x = 0$	Σx^2	Σy	$\Sigma y = 0$	Σy^2	Σxy

3. Wrong observatioin in Regressioin equations

$$\text{y on x, } b_{yx} = \frac{n(\Sigma xy) - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$$

$$\text{x on y, } b_{xy} = \frac{n(\Sigma xy) - \Sigma x \Sigma y}{n\Sigma y^2 - (\Sigma y)^2}$$

4. To find mean values ($\bar{x}, \bar{y}$) of two regression equations.

$a_1 x + b_1 y + c_1 = 0$

$a_2 x + b_2 y + c_2 = 0$

DEMAND ANALYSIS

1. $e_p = \frac{dx/dp}{x/p} = \frac{dx}{dp}\,\frac{p}{x}$ (elasticity of demand)

   Where 'x' is quantity and 'p' is price

   Marginal quantity dx/dp

   Average quantity x/p

2. $MR = AR\left[\frac{e_p - 1}{e_p}\right]$

3. Advertisement Elasticity of Sales :

$$e_A = \frac{ds}{dA} \Big/ s/A$$

Population and Samples

1. $z = \frac{\text{Observed value - expected value}}{\text{Standard Error}}$

Sign of alternative hypothesis	Type of Test
#	Two - sided
>	One - sided to right
<	One - sided to left

Sign	1%	5%
#	2.58	1.96
>	2.33	1.645
<	-2.33	- 1.645

2. Sampling of Attributes.

   S.E. of $p = \sqrt{pq/n}$

   Confidence limits $P \pm 1.96$ (SE of P)

   Difference or Equality of two proportions.

   S.E. of $(p_1 - p_2) = \sqrt{PQ\,(1/n_1 + 1/n_2)}$

   $P = \frac{n_1p_1 + n_2p_2}{n_1 + n_2}$, $Q = 1 - P$

$z = \frac{P_1 - P_2}{S.E.}$

Confidence limits:

95% $= p_1 - p_2 \pm 1.96$ S.E of $(p_1 - p_2)$

99% $= p_1 - p_2 \pm 2.58$ S.E of $(p_1 - p_2)$

4. Sampling of Variables :

   a. For large samples (n > 30).

      i) Test of specified population mean (s.d.known)

$$Z = \frac{x - \mu_0}{\sigma/\sqrt{n}} \qquad (S.E = \sigma/\sqrt{n})$$

      ii) Difference or equality of two means (s.d.known)

$$Z = \frac{\bar{x}_1 - \bar{x}_2}{S.E}$$

$$S.E.\,(x_1 - x_2) = \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}$$

(or) $\sqrt{\sigma^2\,(1/n_1 + 1/n_2)}$

      iii) S.E. of the difference between two s.d.

$$S.E\,(\sigma_1 - \sigma_2) = \sqrt{\frac{\sigma_1^2}{2n_1} + \frac{\sigma_2^2}{2n_2}}$$

      iv) S.E. (correlation coefficient) $= \frac{1 - \gamma^2}{\sqrt{n}}$

   b. For small samples (n < 30)

      i) Test of specified population mean (sd known)

$$z = \frac{x - \mu_0}{\sigma/\sqrt{n}}$$

      ii) Difference of means (s.d known)

$$z = \frac{\bar{x}_1 - \bar{x}_2}{S.E}$$

S.E $= \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}$

iii) To test a specified mean (s.d is not known)

$$t = \frac{\bar{x} - \mu_0}{s} \sqrt{n - 1}$$

d.f = n - 1.

Condfidence limits = $\bar{x} + t_{.025}\ (s_1 / \sqrt{n - 1}$

iv) Difference or Equality of two sample means (s.d unknown)

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S} \sqrt{\frac{n_1 n_2}{n_1 + n_2}}$$

$$S = \sqrt{\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}}$$

v) In case of correlation coefficient :

$$t = \frac{\gamma}{\sqrt{1 - \gamma^2}} . \sqrt{n-2}$$

d.f = n - 2

vi) For F test equality of two S.d. (for unknown means)

$$\bar{s}_1^2 = \frac{n_1}{n_1 - 1} s_1^2$$

$$\bar{s}_2^2 = \left(\frac{n_2}{n_2 - 1}\right) s_2^2$$

$$F = \frac{\bar{S}_1^2}{\bar{S}^2_2} \quad \text{d.f.} = (n_1 - 1)\ (n_2 - 1)$$

C.][² test

(i) Test of goodness of fit $= \frac{\Sigma(f_o - f_e)^2}{f_e}$

Where f_0 = observed frequency; f_e = expected frequency

(ii) Test of independence of attributes

$$f_e = \frac{\text{row total x column total}}{\text{Total frequency}}$$

d.f. (rows - 1) x (column - 1)

PROBABILITY

1. P(A) = r/ n P(B) = r/ n
2. P (A¹) = 1 - P(A)
3. P(AUB) = P(A) + P(B) - P(AnB) (Not Mutually Exclusive)

   P(A) + P(B) + 0 (Mutually Exclusive)
4. P(AUBUC) = P(A) + P(B) + P(C)

   P(A) + P(B) + P(C) - P(AnB) - P(BnC) - P(CnA) + P(AnBnC)
5. P(AnB) = P(A) . P(B) (Independent)

   P(A) . P(B/A) (Dependent)
6. P(AnBnC) = P(A). P(B). P(C) (Independent)
7. P(A) = P(AnB) + P(AnB)

   P(B) = P(AnB) + P(AnB)
8. P(AUB) = 1 - P(AnB)

   P(AnB) = 1 - P(AUB)

9. Mutually exclusive - P(AnB) = 0
   Mutually exhaustive - P(AUB) = 1
   Equally likely if P(A) = P(B).

10. Variance = $E(x^2) - m^2$ where $m = E(x) = \Sigma x_i p_i$
    s.d. = $\sqrt{E(x^2) - m^2}$

11. Bayee Theorem - $P(Ai / B) = \dfrac{P(A_1) \cdot P(B/A_1)}{\Sigma P(A_i)\, P(B/A_i)}$

12. Binomial Distribution

    $f(x) = {}^nC_r\, p^r q^{n-r}$ Mean = np, Variance = npq, $\sigma = \sqrt{npq}$

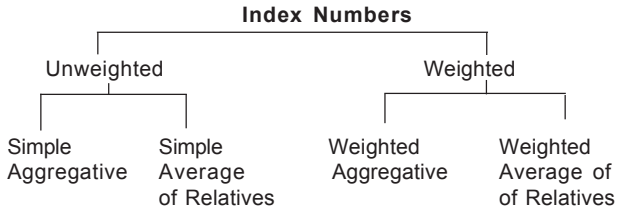
13. Poisson Distribution

    $f(x) = \dfrac{e^{-m} m^x}{x!}$ where $m = np$, $\sigma = \sqrt{m}$

14. Normal Distribution

    $z = \dfrac{x - \mu}{\sigma}$

    Where μ = mean
    σ = Standard deviation



I. Simple Aggregative Method.

$$P_{01} = \frac{\Sigma p_1}{\Sigma p_0} \times 100.$$

II. Simple Average of Relatives

$$P_{01} = \text{antilog}\left(\frac{\Sigma \log P}{N}\right) \quad \text{Where } P = \frac{p_1}{p_0} \times 100$$

III. Weighted Index Number. (Aggregative)

1) Laspeyeres Method

$$P_{01} = \frac{\Sigma p_1 q_0}{\Sigma p_0 q_0} \times 100.$$

2) Paasche's Method

$$P_{01} = \frac{\Sigma p_1 q_1}{\Sigma p_0 q_1} \times 100.$$

3) Dorbish and Bowley's Method

$$P_{01} = \frac{\dfrac{\Sigma p_1 q_0}{\Sigma p_0 q_0} + \dfrac{\Sigma p_1 q_1}{\Sigma p_0 q_1}}{2} \times 100.$$

4) Fisher's Ideal Index

$$P_{01} = \sqrt{\frac{\Sigma p_1 q_0}{\Sigma p_0 q_0} \times \frac{\Sigma p_1 q_1}{\Sigma p_0 q_1}} \times 100$$

5) Marshall - Edgeworth Method

$$P_{01} = \frac{\Sigma p_1 q_0 + \Sigma p_1 q_1}{\Sigma p_0 q_0 + \Sigma p_0 q_1} \times 100$$

6) Kelly's Method

$$P_{01} = \frac{\Sigma p_1 q}{\Sigma p_o q} \times 100$$

Where $q = \dfrac{q_0 + q_1}{2}$

IV. Weighted average of Relative

$$P_{01} = \frac{\Sigma PV}{\Sigma V}$$ Where P = Price relative, V = Value Weights, $V = p_0q_0$

$$P_{01} = \frac{p_1}{p_0} \times 100$$

V. Quantity or Volume index Numbers.

$$P_{01} = \frac{\Sigma p_1 q}{\Sigma p_0 q} \times 100$$

VI. Value index numbers

$$V = \frac{\Sigma p_1 q_1}{\Sigma p_0 q_0} \times 100$$

———————

6 Operations Research

1. TRANSPORTATION

VOGEL'S Approximation Method (VAM)

Step 1 : Verify whether the given problem is maximisation or minimisation. If it is maximisation, convert it into minimisation by selecting largest element and subtract the element from the other element.

Step 2 : Verify whether availability = requirement. If availability < requirement, introduce a dummy row with zero if no other information is available. If requirement < availability, introduce a dummy column if no other detail are given.

Step 3 : Find out the penality for each Row and each Column where the penalty is difference between the smallest and next smallest element.

Note : If there is a tie, then Penality = 0

Step 4 : Enter through the largest penalty and select the lowest cost cell.

Step 5 : Check the availability with requirement corresponding to the lowest cost cell and whichever is minimum, allocate that quantity.

Step 6 : Write down the balance after allocation and if the balance quantity is '0'. Delete that row or column or both.

Step 7 : Recompute the penalty after omitting the deleted numbers for each row and each column and repeat the procedure from step 4 till the requirements are met.

Note : 1. If there is a tie in the largest penalty enter through each one of them and mark the lowest cost cell. Compare these lowest cost cells and whichever is minimum select that cell.

2. If there is a tie in the lowest cost cell also, select the cell where maximum quantity is allocated.

3. If there is a tie in the maximum quantity, select the cell where it is maximum.

Step 8 : Multiply each allocation with corresponding cost and find out the total cost.

Step 9 : Test for optimality using Modi's method.

Note : 1. In the case of maximisation problem after allocating by Vogel's Approximation method transfer all the allocation to the maximisation matrix for finding out initial total value.

2. Optimality test for maximisation problem is carried out only on minimisation matrix.

2. QUEUING THEORY :

λ = Average arrival rate μ = Average service rate

1. P(0) = Probability of zero units in the queue = $1 - \lambda/\mu$ (This is also defined as the expected portion of time a facility will be idle)
2. Probability of having a queue : Pn > 1 = $\left(\frac{\lambda}{\mu}\right)$
3. Pn = Prob. of no 'n' units in the system. (This is also the prpb. of exactly (n – 1) units waiting in the queue = $\left(1-\frac{\lambda}{\mu}\right)\left(\frac{\lambda}{\mu}\right)^n$
4. Average Queue Length (units waiting in line for service) = $\frac{\lambda^2}{\mu(\mu-\lambda)}$
5. Average length of Non-empty queues = $\frac{\mu}{(\mu-\lambda)}$
6. Average no. of units in the system = $\frac{\lambda}{(\mu-\lambda)}$
7. Average waiting time of an arrival in the queue = $\frac{\lambda}{\mu(\mu-\lambda)}$
8. Average time an arrival spends in the system = $\frac{1}{\mu-\lambda}$

3. ASSIGNMENT

Step 1 : Verify whether the given problem is maximisation or minimisation. If it is maximisation, convert it into minimisation by selecting the largest element in the matrix & subtract other element from the largest element.

Step 2 : Verify whether no. of rows is equal to no. of columns. If not, introduce a dummy row or column with zero elements.

Step 3 : Subtract row minimum

Step 4 : Subtract column minimum

Step 5 : Draw minimum no. of lines to cover all zeros.

Step 6 : If no. of lines is equal to no. of rows, optional solution is reached. If not proceed further.

Step 7 : Select the smallest uncovered element from other uncovered elements.

Step 8 : Subtract the smallest uncovered element from other uncovered elements.

Step 9 : Add the smallest element to the element of intersection of two lines.

Step 10 : If the element is covered by a single line write as it is

Step 11 : Repeat the above procedure from step 5 till the optimal solution is reached.

Step 12 : Allocate if there is only one zero in a row. The corresponding column zeros to be deleted. After allocation row-wise go through columnwise.

Step 13 : If there is only one zero in the column allocate the zero, the corresponding row zeros to be deleted.

Note : If you find more than one zero in a row/column, skip that row/column.

4. LINEAR PROGRAMMING

SIMPLEX ALGORITHM

Steps :

1. Verify whether the given problem is maximisation or minimisation. If it is minimisation convert into maximisation by multiplying the objective function by –1
2. Verify whether the right hand side value of the constraint is positive, if not multiply that constraint alone with –1 while doing so $\geq$ will become $\leq$ or vice versa.
3. Convert all the inequalities into equalities. If it is $\leq$ add stack variable and if it is $\geq$ subtract surplus variable and add artificial variable.
4. Write down the modified objective function by assigning O cost for the slack variable and surplus variable and a very high Negative Cost of value. M to the artificial variable.
5. Open a simplex table as given below :

Cost	Programme Variable	Qty	X1.....Xn	S1.....Sn	A1.....An	Fixed Ratio

6. Write down the Coefficient of the variables of the objective function on the top of the variable in the Simplex table.
7. Write down the coefficient of the variable of the constraints in the respective column.
8. Write down the Right hand side values of the Constraints under the Qty. Column.
9. Identify the unit matrix and write down the corresponding variable under the programme variable column.

10. Write down the Cost of the Programme Variable under the Cost Column.
11. Find out the values of Zj – Cj for all the variable columns, where Zj – Cj is the summation (total) of jth column element when multiplied with corresponding Cost and Cj is the Cost of the Z column (Table No.1)

    Note : Always Zj – Cj = 0 for programme Variable. Do not calculate Zj – Cj for programme variable.
12. If all the values of Zj – Cj are ≥ 0, Then solution is optimal, if not proceed further.
13. Enter through the most negative value of Zj – Cj and this column is known as "Key Column" (Kc)

Note : In the "Key column" (Kc) if all the values are Zj – Cj = 0 and that, there is an unbounded solution for the problem, do not Continue further.

14. Find out the Fixed Ratio (F.R) where

    FR = Qty./The respective key column element.

Note : Do not calculate F.R in the Negative and 0 elements in the key column.

15. Enter through the Lowest Positive F.R. and this Row is known as "Key Row" (KR).

Note : If there is a tie in the F.R. then if it is called Degeneracy. In the Case of Degeneracy, Key Row (KR) is selected arbitrarily.

16. Identify the Key element (K.E) (Intersection point of "Key Row" and Key column)
17. Divide all the elements in the K.R by the K.E. and write down these values in the next hyderation table at the appropriate places.
18. Copy the programme variable in the next hyderation table from the (P.Y table) Previous table and replace the "Key Row" Variable with "Key Column" Variable.
19. Write down the Cost of the programme variable under the Cost Column. (Refer Cost on the top of the variable.)
20. Apply the following Rules :

    Rule 1:

    Where every 0 in the K.R. the Corresponding Column elements can be copied as it is in the next hyderation table including Zj – Cj.

    Rule 2 :

    In the K.C. Other than the KE assign the value 0 including Zj – Cj in the next hyderation table.

Rule 3 :

In the case of Degeneracy, if one row is selected as the K.R. the other row qty. will become 0 in the next hyderation table.

Rule 4 :

If artificial variable happens to be the K.R. Variable in the Subsequent table, the Corresponding Column can be deleted.

Rule 5 :

Apply the following formula for finding the other values.

New Number (Old Number × KE – Corresponding Number in the KR × Corresponding No in KC) × 1/KE

Note :

1. If Zj – Cj = 0 for a non programme variable then the given problem has got more than one solution (Multiple Optimal Solution).
2. Though Zj – Cj $\geq$ Condition is satisfied, if any 'A' variable is present under thr programme variable. Then there is no feasible solution for the given problem.
3. Repeat the above procedures till the optimal Conditions reached i.e., Zj – Cj ≥ 0.

5. NETWORK ANALYSIS

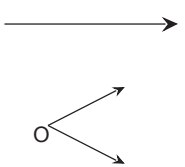
A Network is a graphical representation of a Project as well the sequence of well defined activity and events.

Project

A Project can be defined as a set of activities that are performed at a certain sequence determined logically and technologically.

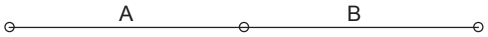
Activity

An Activity is any portion of a project which consumes time or resources and has a definite beginning and ending. An activity is represented by an arrow (=>). If two activities A & B are started simultaneously then these two activities are called concurrent activities.



Activity

A & B are called Concurrent Activity



B is called sequential activity.

 Dummy Activity.

Dummy activity is mainly used to represent the logic. There is no duration for dummy activity.

Event :

The beginning and ending points of an activity is called Event. An Event is represented by Circle.

Techniques Used

1. Critical Path Method (CPM)
2. Programme Evaluation Review Technique (PERT)

Differences between PERT and CPM.

	CPM	PERT
1.	It is activity Oriented	It is event Oriented
2.	It is based on Single time estimate	It is based on Three time estimate.
3.	It is a deterministic model	It is a Prob. Model.
4.	It is primarily Concerned with Time & Cost	It is Primarily Concerned with time.
5.	It is mainly used where the duration of an Activity is Known.	Where the duration of the activity not known eg. R & D Project.

Glossary

Abnormal loss: The loss arising from manufacturing process through unusual wastage, or spoilage in excess of the normal loss.

Absorption Costing: The cost accounting system in which the overheads of an organization are charged to the production by means of the process of absorption

Accounting: The process of recording, classifying, summarizing and reporting business transactions.

Accounting period: The period of 12 months starting from 1st April ending with 31st March of subsequent year.

Accounts payable (trade creditors): The amounts owned by the business from customers for invoiced amounts.

Accounts receivable (trade debtors): The amounts owing to a business from customers for invoiced amounts.

Accounts receivable collection period: The time given to customers for repaying their debts.

Accumulated depreciation (aggregate depreciation): The total amount of the depreciation written off from the cost price or valuation of a fixed asset since it was brought in to the balance sheet of an organization.

Administration overheads: Expenses towards day-to-day administration of a business.

Adverse variance (unfavourable variance): In standard costing and budgetary control, this is a situation where the Actual Expenditure is more than Budgeted.

Allotment: A method of distributing previously unissued shares in a limited company in exchange for a contribution of capital.

Amalgamation: The combination of two or more companies. The combination may be effected by one company acquiring others, by the merging of two or more companies, or by existing companies being dissolved and a new company formed to take over the combined business.

Applications software: Computer programs that are designed for a particular purpose or applications. e.g. Tally

Apportionment (cost apportionment): Charging a proportion of a cost to a cost centre or cost unit because the cost centers or cost units are not directly incurring those costs although they share in incurring them.

Appreciation: An increase in the value of an asset usually as a result of inflation. This usually occurs with land and buildings.

Arithmetic Mean (arithmetic average)**:** An average in which individual numbers or quantities are added together and divided by their total number.

Asset: Any Expenditure which will give benefits for more than a year.

Authorized share capital (Nominal share capital; Nominal capital; Registered capital): The maximum amount of share capital that a company may raise as per its memorandum of association.

Bad debt: An amount owed by a debtor that is unlikely to be paid; for example, due to a company going into liquidation.

Bad debts recovered: Debts originally classed as bad debts and written off to the profit and loss account (or to a provision for bad and doubtful debts) but subsequently recovered either in part or in full.

Balance sheet: A statement of the Assets and Liabilities of an Enterprise as on a particular date.

Bank charge: The amount charged to a customer by bank, usually for a specific transaction, such as paying in a sum of money by means of a cheque or withdrawing a sum by means of an automated teller machine.

Bank reconciliation statement: A statement that reconciles the bank balance in the books of an organization with the bank statement. Bank reconciliation is usually performed weekly or monthly and are a form of internal control check.

Batch costing: A form of costing in which the unit cost is expressed on the basis of a batch produced.

Bill of exchange: A bill drawn by the seller of goods and accepted by the buyer with the promise to pay the certain sum of money with in the stipulated period of time.

Bills Payable: The Document evidencing the amounts owed by a business to Creditors, such as suppliers.

Bills Receivable: The Document for the amounts owed to a business by Customers.

Book-keeping: Maintaining record of day-to-day business transactions.

Break Even Point: No profit and No loss position level. This level normally represents the production capacity or Sales volume.

Budget: A plan of how money will be spent over a period of time in relation to the money available.

Business entity Concept: The concept which differentiates the owner and the business in Financial Accounting.

Capital: The amount of initial contribution by the promoter of a business.

Capital redemption reserve: Apportionment from the Profit / Loss and Reserves to the extent of shares redeemed.

Carriage Inwards: Loading / Unloading costs incurred on purchases

Carriage outwards: Loading / Unloading costs incurred on Sales. This is

transferred to Profit & Loss Account.

Carrying cost: The cost of holding stock from the date of receipt to the date of disposal, or for any other specified period. These costs include warehousing, insurance, and security.

Cash Discount: A discount receivable or allowable for setting an invoice for cash, or within a specified period. In the profit and loss account, discounts receivable are classed as revenue; discounts allowable as expenditure.

Cash-flow Budget: A Budget that summarizes the expected cash inflows and the expected cash outflows of an organization over a budget period, usually prepared on monthly basis.

Cash-flow Statement: A statement showing the inflows and outflows of cash and cash equivalents for a business over a financial period.

Closing Balance: The debit or credit balance on a ledger at the end of an accounting period, which will be carried forward to the next accounting period.

Closing Stock: The stock remaining within an organization at the end of an accounting period as raw materials, work in progress, or finished goods.

Company Doctor: The person having professional exposure in Accounts and Commerce.

Compensating Error: An error that is not revealed in a trial balance because one error is cancelled out by another error or errors.

Consolidated balance sheet : The balance sheet of a group providing the financial information contained in the individual financial statements of the parent company of the group and its subsidiary undertakings, combined subject to any necessary consolidation adjustments.

Contingent liability : An Information placed as a footnote to the Balance Sheet. It is the quantum of future liability that may or maynot arise in Connection with occurence of future uncertain.

Contribution (Contribution margin): The unit production is the difference between the unit selling price of a product and its marginal cost of production.

Contribution margin ratio: (contribution- to sales ratio;production-volume ratio;profit-volume ratio)The ratio of the contribution per product to the sales value,often expressed as a percentage.

COSA: Abbreviation for cost of sales adjustment cost. The expenditure on goods and services required to carry out the operations of an organization.

Cost of Capital: It is the amount that an organization needs to pay on its equity or debt. It is usually represented by percentage.

Cost of Goods sold: Opening stock at the beginning of an accounting period plus the purchases for the period, less the closing stock at the end of the period.

Cost sheet: The statement showing the cost classification such as Prime Cost, Works Cost, Cost of Production.

Credit: The reputation and financial standing of a person or organization.

Credit Note: A document evidencing the payables or liability. payables may arise dueto goods returned from customers.

Creditor-days ratio: A ratio that gives an estimate of the average number of days credit taken by an organization before the creditors are paid.

Creditors: Businesses or individuals to whom an organization owes money, for example unpaid suppliers of raw materials.

Cumulative preference share: Cumulative preference shares guarantee the eventual payment of these dividends in arears before the payment of dividends on ordinary shares, provided that the company returns to profit in subsequent years.

Current liabilities: Amounts owed by a business to other organizations and individuals that should be paid within one year from the balance-sheet date.

Current ratio: The ratio of the current assets of a business to the current liabilities.

Day book: It is the book initial entries in Financial Accounting.

Debenture: The most common form of long-term loan taken by a company.

Debenture redemption reserve: A capital reserve into which amounts are transferred from the profit and loss account for debentures that are redeemable at a future date.

Debit: An entry on the left-hand side of an account in double-entry book - keeping that increases either the assets or the recorded expenditure of the organization keeping the book

Debit Note: A document sent by an organiazation to a person showing that the recipient is indebted to the organization for the amount shown in the debit note.

Debt-equity ratio: The ratio showing the portion of debts (i.e. the outside liability) on the capital employed.

Debtors collection period: The average days that a debtors have taken to pay their dues. More days will lead fund stagnation.

Debtors: Those who owe money to an organization, for example for sales of goods.

Depreciation: It is the physical wear and tear of a fixed asset. It is usually denoted by percentages on the cost of such asset.

Differential analysis: An assessment of the impact on costs and revenues of specific management decisions.

Direct expense: Expenditure that would not be incurred unless a particular cost unit were produced. Direct expenses are included in the direct cost

Direct labour: Workers who are directly involved in the production.

Direct materials: The Cost / Expenses towards core materials used in the production.

Dispersion: Dispersion is the degree of variation of the variable from the central value.

Dividend: The distribution to the shareholders at a percentage on their share capital.

Double-entry book-keeping: A method of recording the transactions of a business in a set of accounts, such that every transaction has a dual aspect and therefore needs to be recorded in at least two accounts.

Drawee: The person on whom a bill of exchange is drawn.

Drawer: A person who signs a bill of exchange ordering the drawee to pay the specifed sum at the specified time.

Economic Order Quantity: Determines the optimum order size for purchasing or manufacturing an item of stock. The optimum order quantity is that which equates the total ordering costs and total holding costs.

Equity Share Capital: The owners capital in the company.

Factory Cost: It is a collection of Materials cost, Labour cost, Factory overheads. It is also known as works cost.

Financial Statements: Statements showing the performance of the company during the financial year. They cosists profit and loss account, balance sheet, and if required, the cash-flow statement, together with supporting notes.

Fixed Asset: An asset which is to remain in the business and giving benefit for years.

Fixed Overhead Cost: The elements of costs that, remains unchanged irrespective of changes in the levels of production or sales.

Funds Flow Statement: Source and Application of Funds, where funds stands for working capital.

Goodwill: It is the value of reputation.

Gross Margin Ratio: The percentage of gross profit on sales.

Imputed Cost: A cost that is not actually incurred by an organization but is introduced into the management accounting records in order to ensure that the costs incurred by dissimilar operation are comparable.

Income and Expenditure Account: It is a nominal account showing the net result of operations Either surplus (i.e., Excess of Income over Expenditure) or Deficit (i.e., Excess of Expenditure over Income) is arrived.

Incremental Cost: The additional cost incurred as the result of a particular decision or activity.

Independent Events: Two or more events are said to be independent when the outcome of one does not affect and is not affected by the other.

Index Numbers: Index Numbers are devices for measuring differences in the magnitude of a group of related variables.

Indirect Costs: Expenses that cannot be traced directly to a product or cost unit and are therefore overheads.

Insolvency: The inability to pay one's debts when they fall due.

Intangible Property: A property that cannot be possessed physically but that confers on its owner a legally enforceable right to receive a benefit, for example money.

Inventory: The stock of products / materials in the business.

Issued Share Capital: The amount of the share capital issued for public subscription.

Job Costing: A Costing process to assess the individual costs of performing each job.

Last-in-first-out Cost: A method of valuing units of raw material or finished goods issued from stock by using the latest unit value for pricing the issues until all the quantity of stock received at that price is used up.

Ledger Account: It is a record of transactions classified across different heads of Accounts.

Liquid Assets: Assets held in cash or in something that can be readily turned into cash.

Liquidation (Winding up): The distribution of a company's assets among its creditors and members prior to its dissolution.

Liquid Instrument: A negotiable instrument that the purchaser is able to sell before maturity.

Liquid Ratio: A ratio of Quick Assets to Quick Liabilities where "Quick" denotes 'Readily available by cash'

Long-term Liability: A sum owed that does not have to be repaid within the next accounting period of a business.

Marginal Cost: The variable costs per unit of production. Marginal cost represents the additional cost incurred as a result of the production of one additional unit of production.

Margin of Safety: The difference between the level of activity at which an organization breaks even and a given level of activity greater than the breakeven point.

Maximum Stock Level: The highest level of stock planned to be held; any amounts above the maximum would be considered excess stock.

Mean deviation: It is the average difference between the items in a distribution and the median or mean of that series.

Median: Median refers to the middle value in a distribution.

Mode: The Mode or the modal value is that value in a series of observations which occur with the greatest frequency.

Mutually Exclusive Events : Two events are said to be mutually exclusive or incompatible when both cannot happen simultaneously in a single trial.

Net Asset Value (NAV): The value of a share in a company calculated by dividing the amount for the net assets of the company by the number of shares in issue.

Net Worth: The value of an organization when its liabilities have been deducted from the value of its assets.

Process Costing: A method of cost accounting applied to production carried out by a series of chemical or operational stages or process.

Production Budget: A budget set for the production function of an organization under a system of budgetary control, which includes, inter alia, the production volumes and the production cost to be incurred in a budget period.

Profit and Loss Account: An account in the books of an organization showing the profits (or losses) made on its business activities with the deduction of the appropriate expenses.

Provision for bad debts: A provision calculated to cover the debts during an accounting period that are not expected to be paid.

Quartile deviation: It gives the average amount by which the two quartiles

Normal Loss: The loss arising from a manufacturing or chemical process through waste, or spoilage that can be expected, on the basis of historical studies, to be part of that process.

Obsolescence: A fall in the value of an asset as a result of its age or decline in its usefulness.

Operating Costing: The form of costing applied both to the provision of services within an organization and to the costing of continuous operating processes, such as electricity generation.

Operating Cycle: The average time between buying goods and receiving cash from their sale. The operating cycle (in days) will be arrived combining Inventory holding period and Debtors Collection period and excluding creditors payment period.

Operating Profit (or Loss): The profit (or loss) made by a company as a result of its principal trading activity. This is arrived at by deducting its operating expenses from its trading profit, or adding its operating expenses to its trading loss; in either case this is before taking into account any extraordinary items.

Opportunity Cost: The income or benefit foregone as the result of carrying out a particular decision, when resources are limited or when mutually exclusive projects are involved. Cost of Opportunity lost (or) Opportunity foregone.

Paid-up Share Capital: The total amount of money that the shareholders have paid to the company for their fully paid shares.

Partnership Accounts: The accounts kept by a partnership. They include an appropriation account in which the profit of a partnership is shared between the partners in accordance with the partnership agreement.

Personal Accounts: Heads of Accounts representing personality. Debit the Receiver and Credit the giver.

Petty Cash: The amount of cash that an organization keeps in notes or coins on its premises to pay small items of expense.

Petty Cash Book: A book used to record petty cash transactions. It is usually kept in an imprest account.

Preferential Creditor: A creditor whose debt will be met in preference to those of other creditors and who thus has the best chance of being paid in full on the bankruptcy on an individual or the winding-up of a company.

Premium: An amount in excess of the nominal value of a share or other security.

Price-earnings Ratio: The current market price of a company share divided by the earnings per share.

Probability: The Proabability of a given event is an expression of likelihood or chance of occurance of an event.

Regression: Regression is the measure of the average relationship between two or more variables in terms of the original units of the data.

Reorder Level: It is a level of indication to the inventories. It indicates further orders to be made otherwise it will lead to shortage of stock during the lead time.

Return on Capital Employed: An accounting ratio expressing the profit of an organization for a financial period as a percentage of the capital employed.

Revaluation Account: In a partnership to which a new partner is admitted or if an existing partner dies or retires, assets and liabilities must be revalued to their current market value.

Revenue Expenditure: Expenditures which are recurring in nature. These Expenditures usually forms part of Profit and Loss Account.

Safety Stock: A level of stock that provides a safety buffer in the event of increased demand or reduced receipt of stocks.

Sales Budget: A budget set for the sales function of an organization under a system of budgetary control.

Semi-variable Cost: An item of expenditure that contains both a fixed cost element and a variable-cost element.

Share Capital: That part of the finance of a company received from its owners (I.e. its members or shareholders) in exchange for shares.

Share issued at a discount: A share issued at a price below its par value. The discount is the differnce between the par value and the issue price.

Share issued at a premium: A share issued at a price above its par value. The premium is the difference between the issue price and the par value.

Statement of affairs: A statement showing the assets and liabilities.

Trading account: The part of a profit and loss account in which the cost of goods sold is compared with the money raised by their sale in order to arrive at the gross profit.

Variable cost: An item of expenditure that, varies directly with the level of activity achieved.

Working Capital: The capital of a business that can be used in its day-to-day trading.

Written-down value (WDV) **:** The value of an asset for tax purpose after taking account of its reduction in value below the initial cost, as a result of its use in the business.

———————