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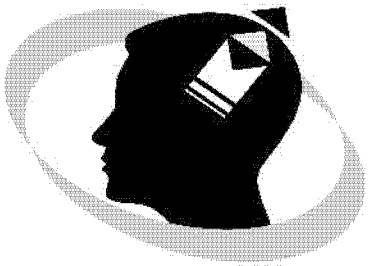
SUBJECT CODE: 3A, MATERIAL NO: 33

FAST TRACK MATERIAL ON COST AND MANAGEMENT ACCOUNTING_ 41e

(NEW EDITION THOROUGHLY REVISED & UPDATED UPTO NOV 2018. APPLICABLE FOR MAY / NOV 2019 EXAMINATIONS UNDER NEW SYLLABUS OF CA INTER. THIS MATERIAL IS SYNCHRONISED WITH JULY 2017 EDITION OF ICAI SM. THIS MATERIAL IS ISSUED ON 15.04.19)



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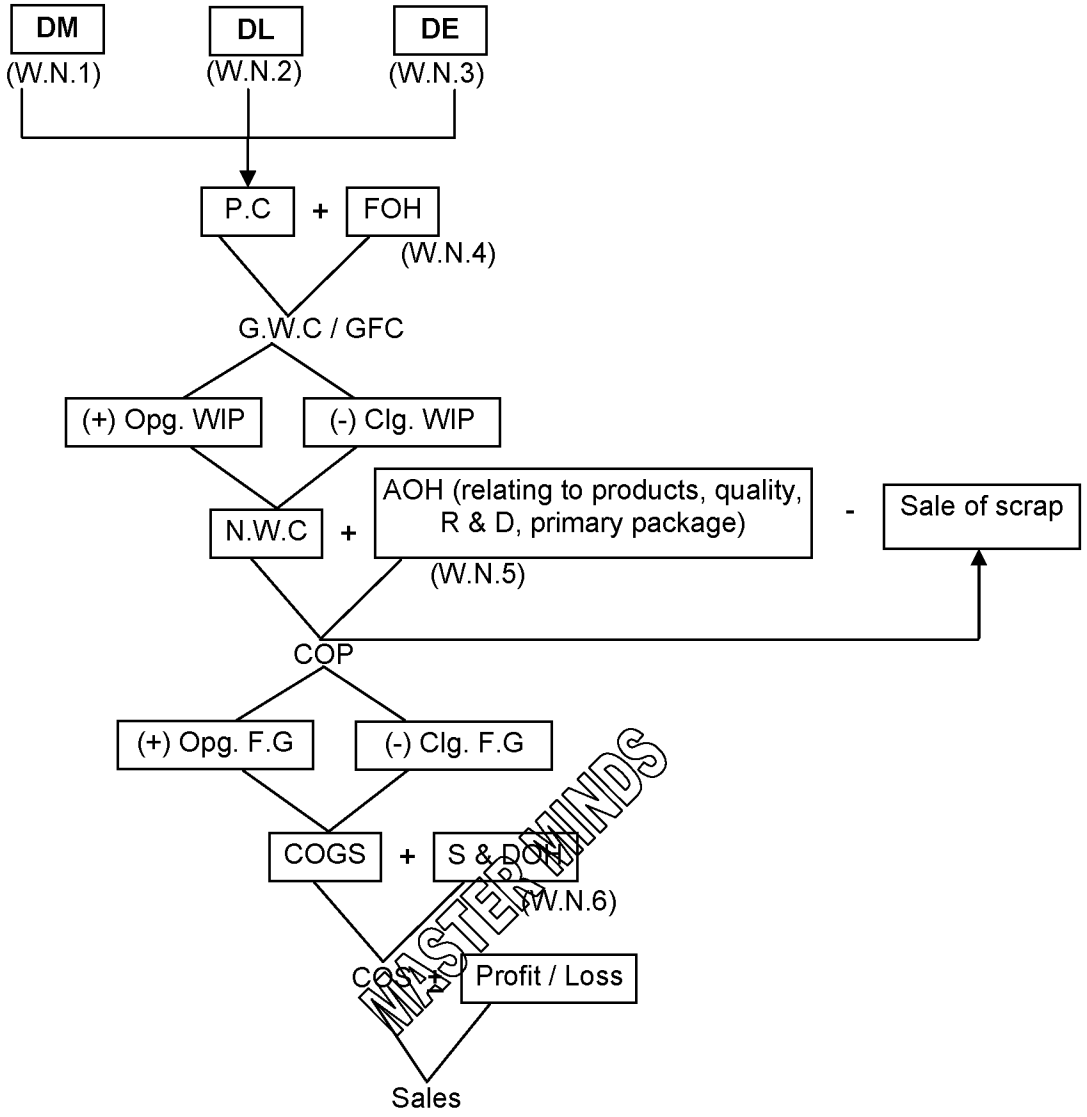
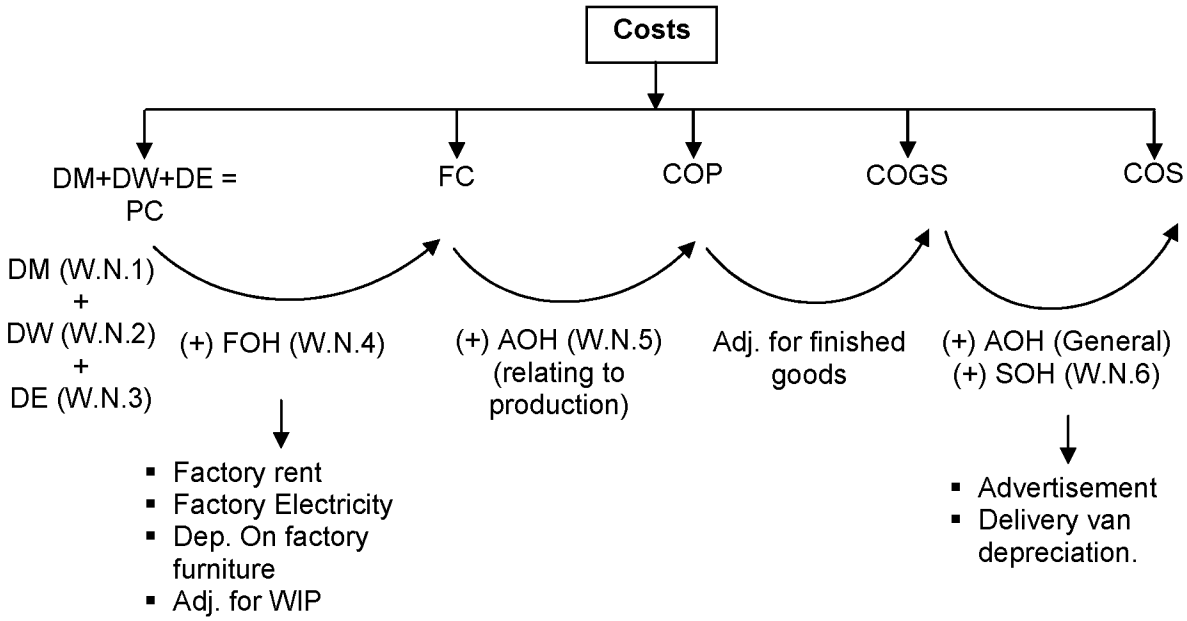
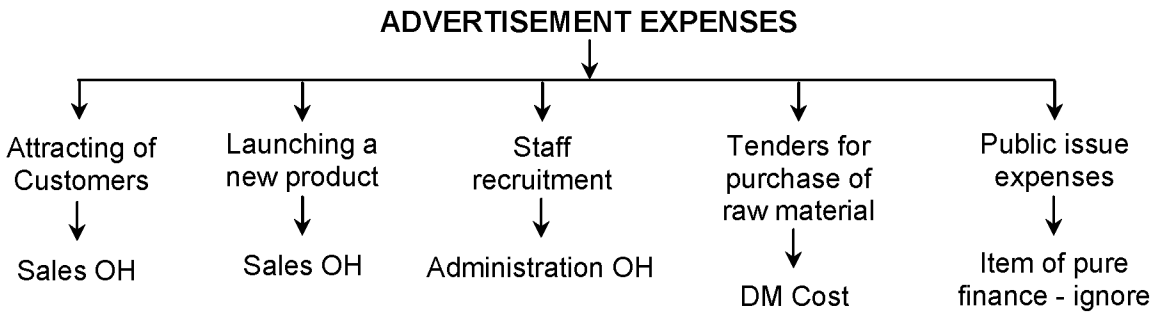
1. COST SHEET

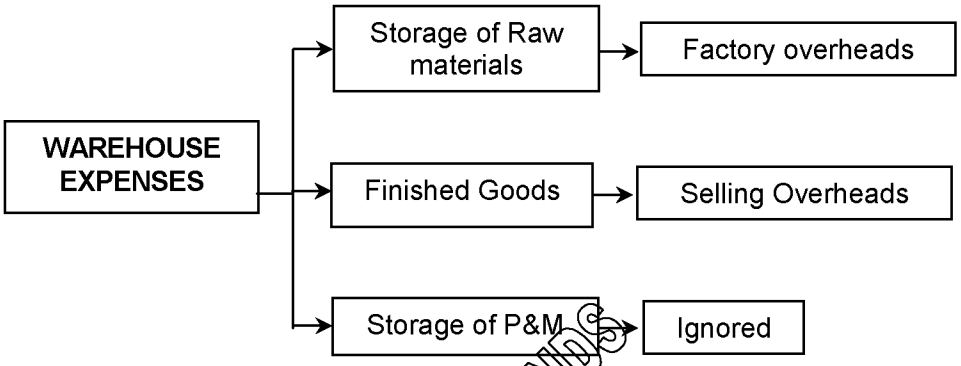


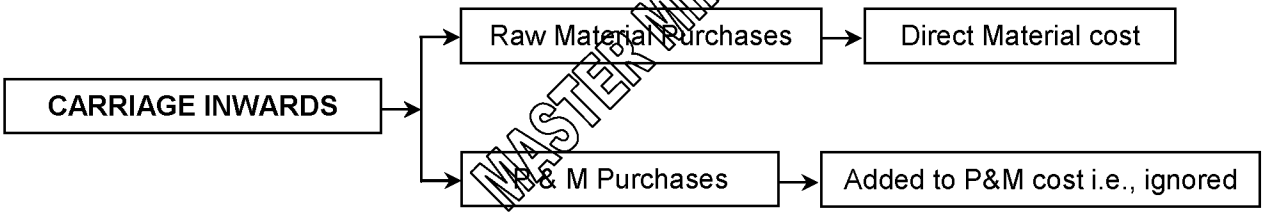


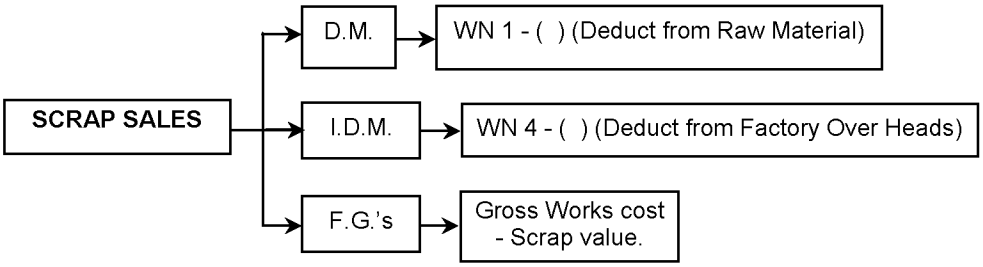
AOH may or may not be added to cost of production.

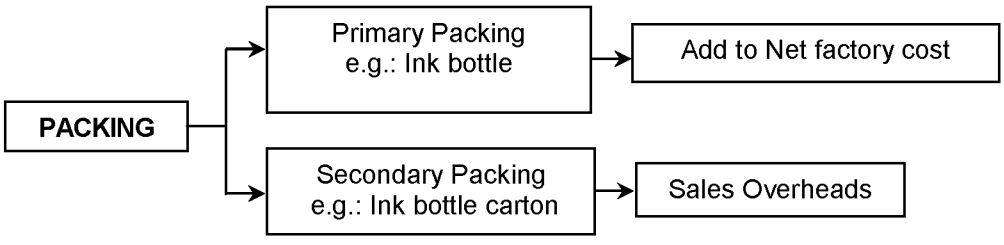
TREATMENT OF VARIOUS EXPENSES

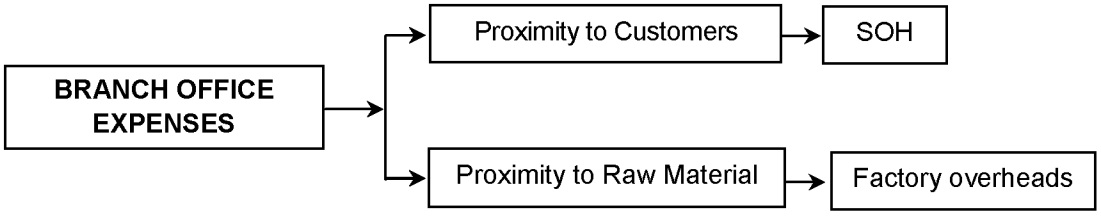


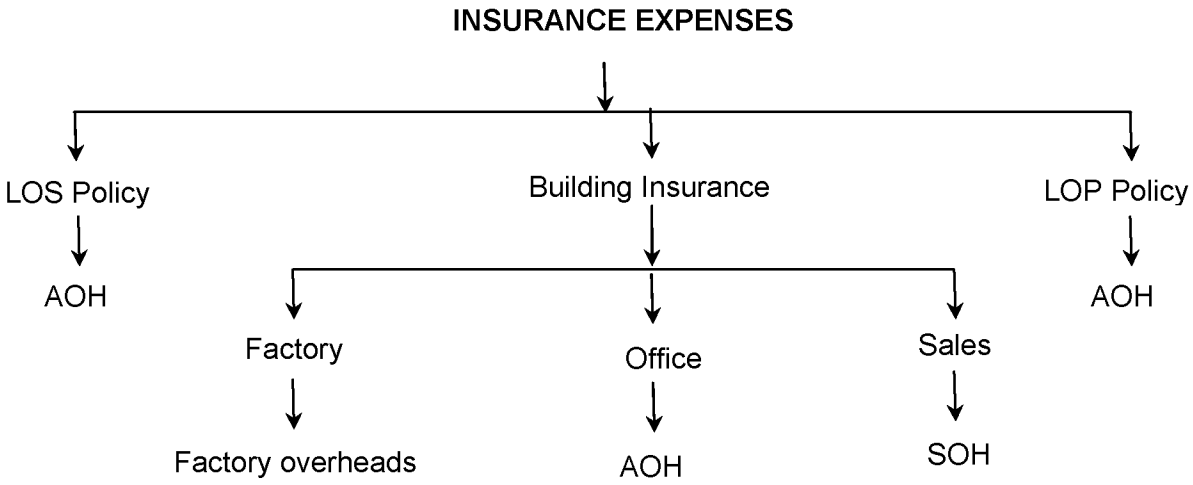


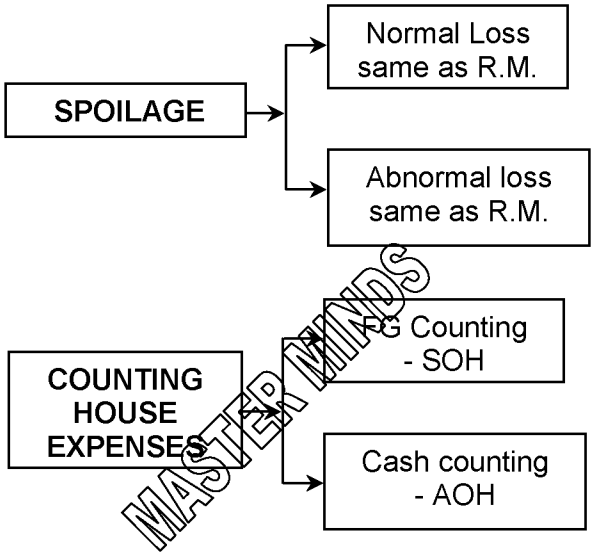


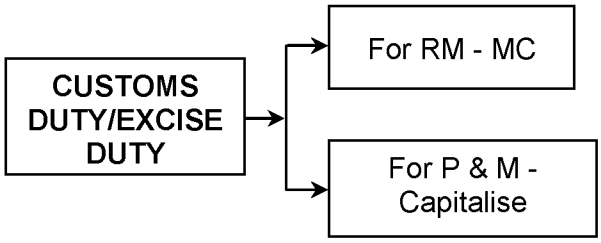


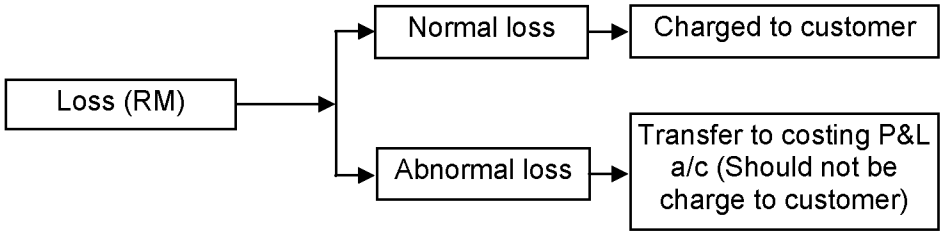


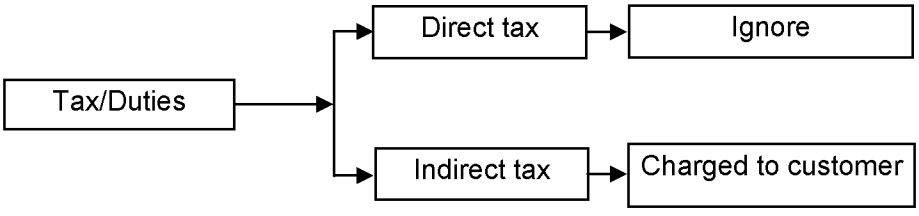


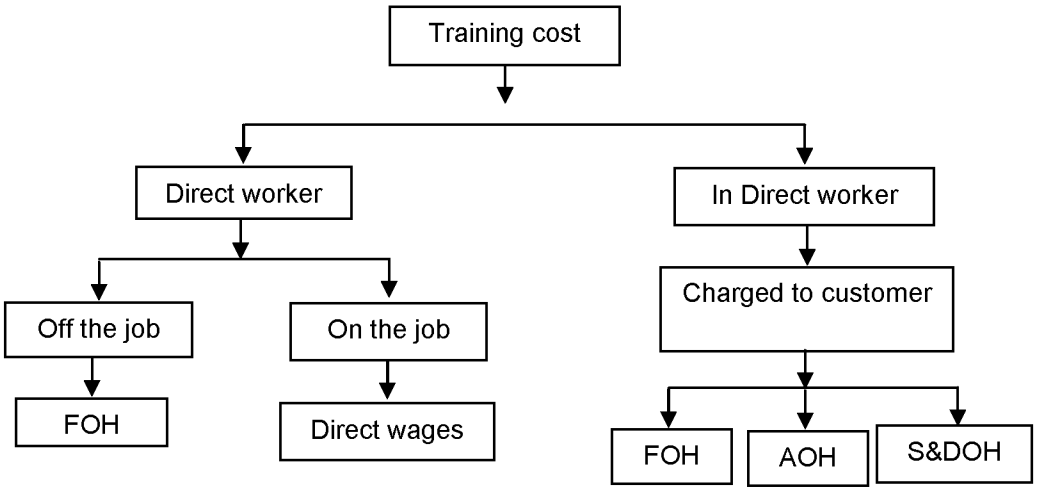






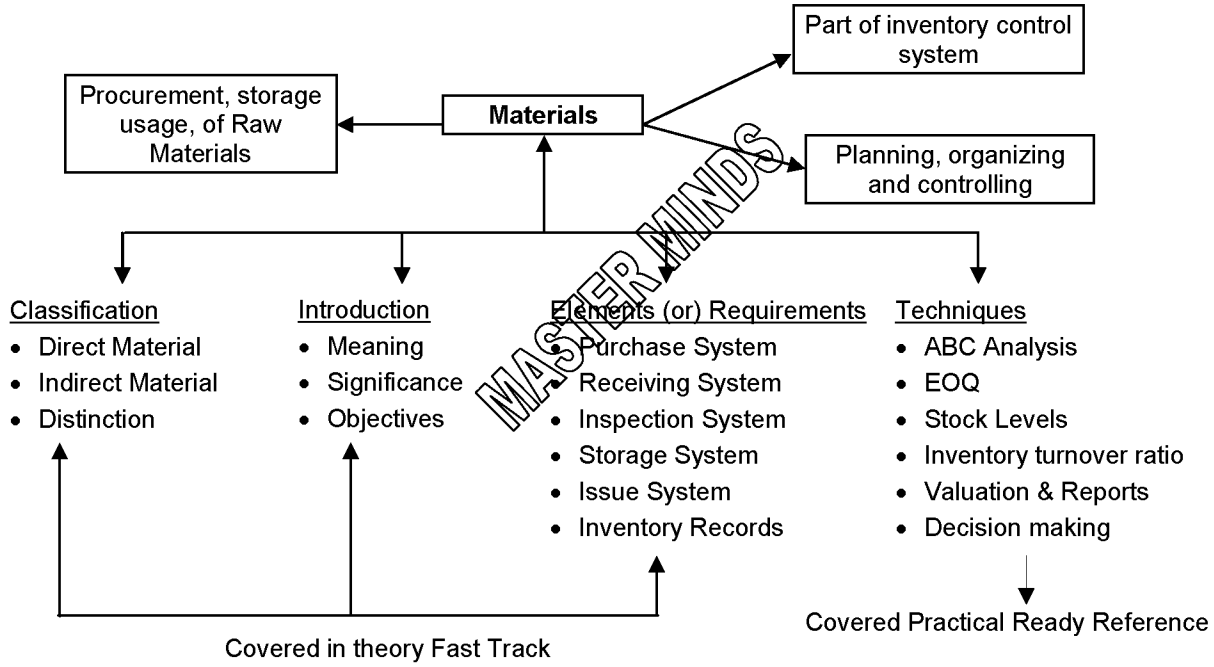




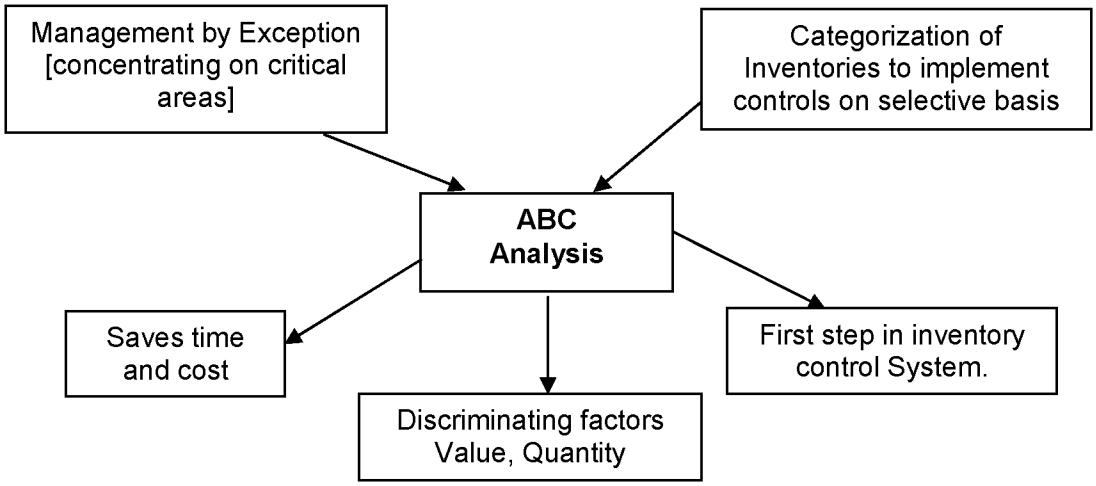


2. MATERIAL COST

INTRODUCTION:



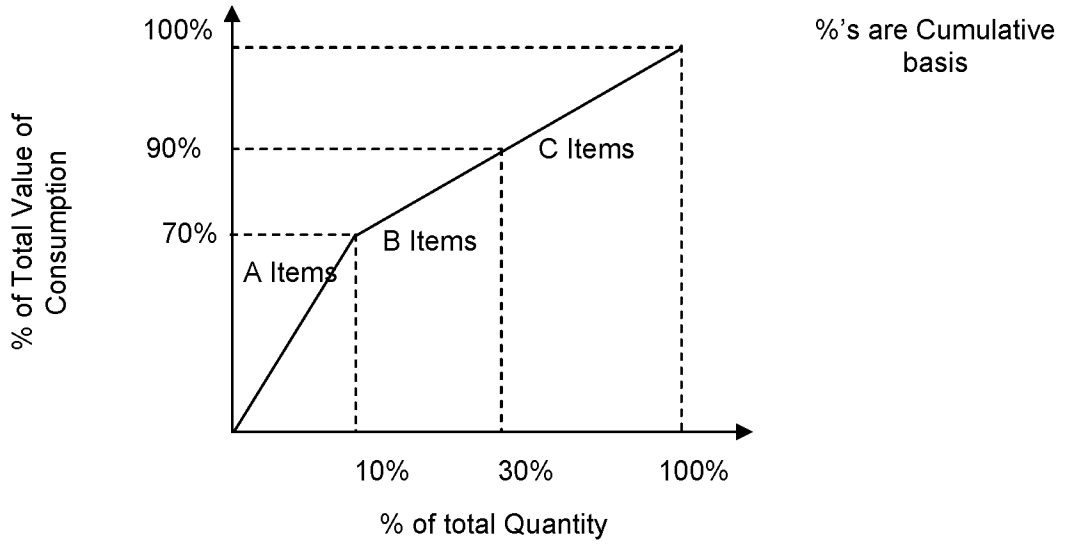
ABC ANALYSIS:



Category	% of Total Value	% of Total Items	Control
A	70 %	10%	Perpetual inventory Control System

B	20 %	20 %	Periodical inventory Control System
C	10 %	70 %	No inventory Control System

GRAPHICAL PRESENTATION:



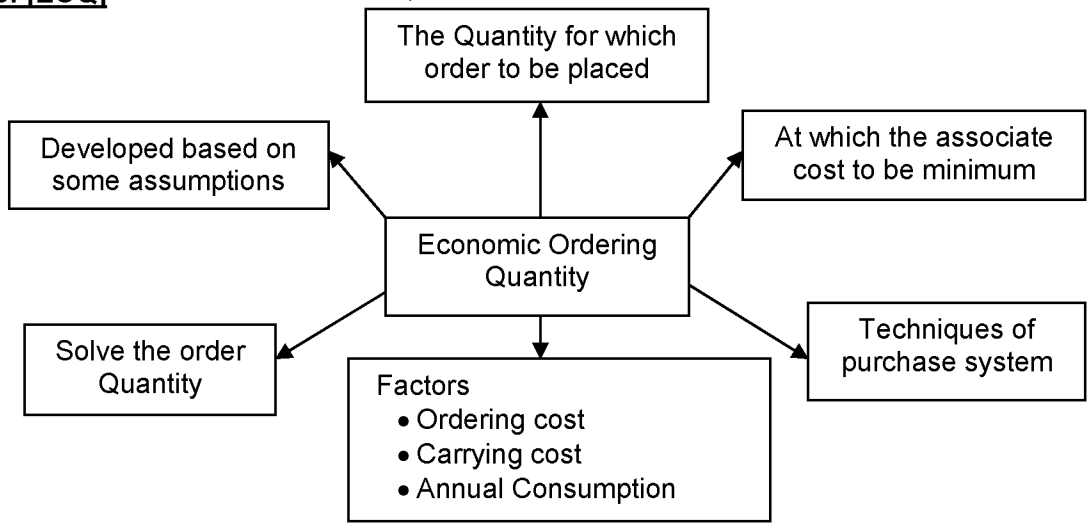
Practical Steps:

1. Arrange the items in descending order based on cost per unit.
2. Calculate the percentage of consumption of each item in relation to total consumption.
3. Categories based on cumulative percentage of consumption up to 70% [category - A], 70-90% [category - B], 90-100% [category - C].
4. Calculate the percentage - upto 10% [category A], 10-30% [category - B], 30-100% [category - C].

Notes:

1. Categories either of one basis [consumption or Quantity], fist & then apply second basis subsequently.
2. Categorization as merely as possible.

Materials: [EOQ]



Calculations of EOQ:

Trail & Error Method (or) Tabular Method:

EOQ: Where total cost is minimum

	Particulars	Different Order Sizes	
		Order Size - I	Order Size - II
A.	Annual Consumption (Units)	-	-

B.	Order Size	-	-
C.	No. of Orders (A/B)	-	-
D.	Cost per order	-	-
E.	Total ordering Cost (CxD)	-	-
F.	Average Inventory (Units) (Order Size / 2)	-	
G.	Carrying cost per unit	-	-
H.	Total carrying cost (F X G)	-	-
I.	Total Cost (E + H)	-	-

Formulae:

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where OC = CC

$$\text{Total ordering cost (OC)} = \frac{A}{Q} X O$$

$$\text{Total Carrying Cost (CC)} = \frac{Q}{2} X C$$

A = Annual Consumption;

O = Ordering Cost per order;

C = Carrying cost per unit per annum.

Assumptions:

a) No Safety Stock.

b) No lead time

c) No Quantity Discounts.

d) Consumption evenly accrued through out the year.

e) All factors known in Advance.

Other Important Formulae:

Total Associated Cost at EOQ = $\sqrt{2AOC}$ (or) Ordering Cost + Carrying Cost.

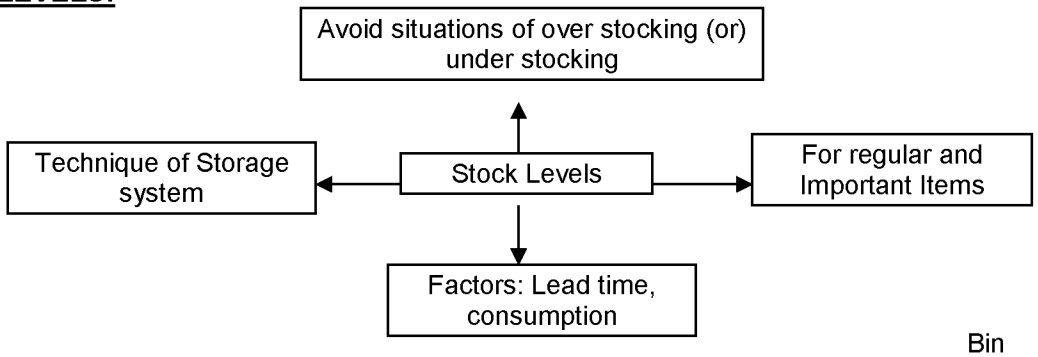
No. of orders per year = $\frac{A}{Q}$, Average Stock = $\frac{Q}{2}$

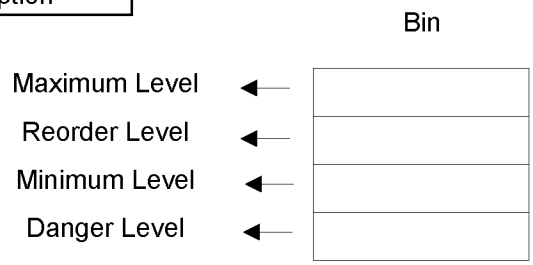
$$\text{Frequency of order} = \frac{365}{\text{No.of orders per year}}$$

Notes:

1. Carrying cost tends proportionately with order size, where as ordering cost doesn't (tends invariably or disproportionately).
2. If Quantity Discounts offered decision to be taken after considering total cost for each alternative (raw material cost + ordering cost + carrying cost).
3. Consumption of raw material to be considered but not production or demand of finished goods.
4. Consider input output ratio where ever required.
5. Carrying cost may be expressed as a percentage of Raw material cost. Which includes warehouse rent, cost of working capital, insurance. Etc.,
6. Ordering cost per order is fixed & includes cost of making order, receiving, inspection charges, time devoted, transportation etc.,

STOCK LEVELS:





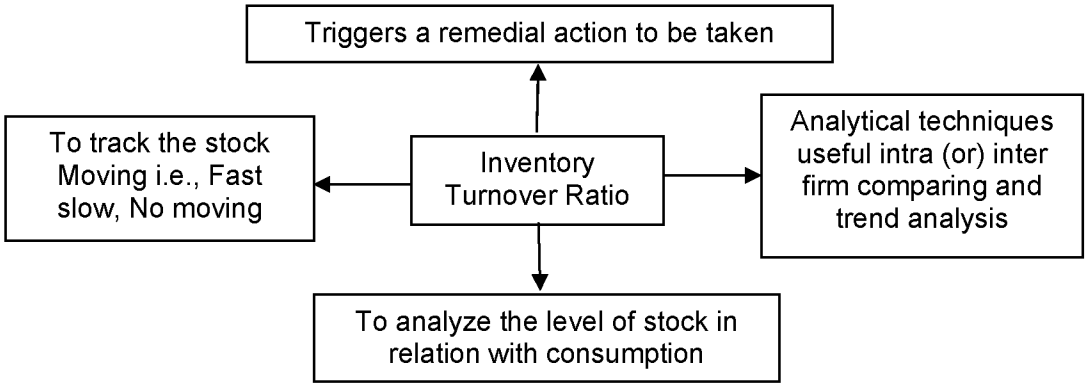
Formulae:

Level	With Safety Stock	Without Safety Stock
Re Order Level (ROL)	Safety Stock (or) Minimum Stock + Lead time consumption	Maximum Consumption x Maximum Lead time
Maximum Stock	ROL+ROQ - Minimum consumption x Minimum Lead time	EOQ + Safety Stock
Minimum Stock	Safety Stock (or) (Maximum Lead time - Normal Lead time) x $\frac{\text{Annual consumption}}{365 \text{ days}}$	ROL - Normal Lead time x Normal Consumption
Average Level	$\frac{\text{Minimum} + \text{Maximum}}{2}$ (or)	Safety stock+ $\frac{1}{2}$ ROQ
Danger Level	Emergency Delivery period x Minimum usage	Emergency Delivery period x Normal

Notes:

1. Usage and lead time must be taken for the same period.
2. The selection of Approach depend upon information provided in the problem
3. The Formulas are objectively determined but not subjectively.
4. The approach followed zero stock risk approach i.e., at any point of time production cannot be interrupted.

Inventory Turnover Ratio



Formulae:

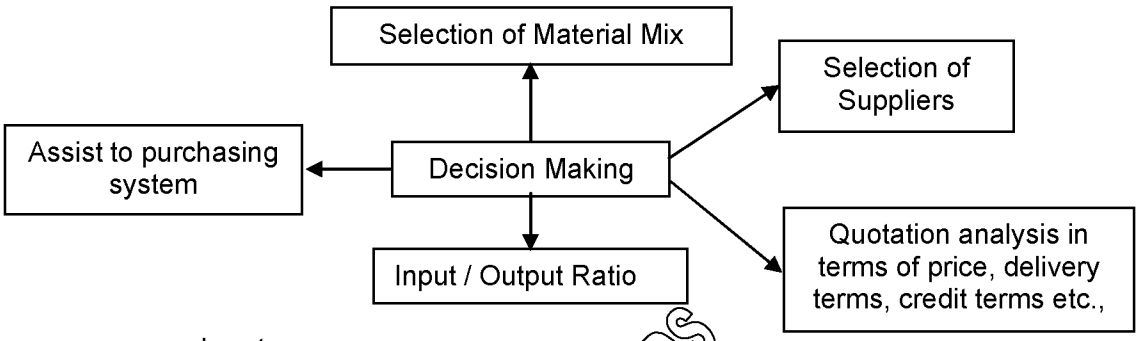
$$\text{Days} = \frac{365}{\text{Inventory turnover ratio (Intimes)}}$$

$$\text{Time} = \frac{\text{Cost of Material consumption}}{\text{Cost of Average Stock}}$$

Consumption = Opening Stock + Purchases - Closing Stock

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

Decision Making



$$\text{Input / Output Ratio} = \frac{\text{Input}}{\text{Output}} \times 100$$ (i.e., input required for every unit of output)

$$\text{Yield Ratio} = \frac{\text{Output}}{\text{Input}} \times 100$$ (i.e., output can be achieve for every unit of input)

While Selecting Suppliers: Quantitative as well as Qualitative factors to be considered. Such as delivery terms, Relation, defectives, assistance after sales service quality of material etc.

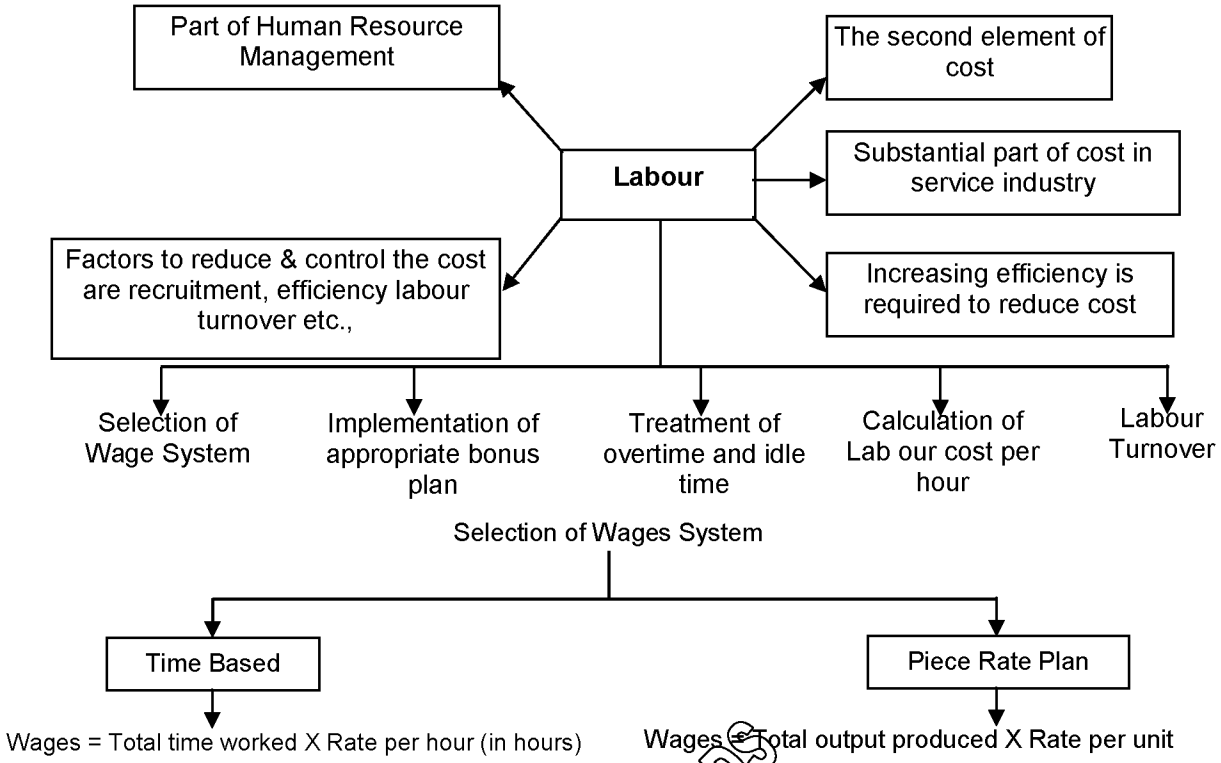
Cost of Purchases of Raw Material:

1. Whatever the costs incurred upto stores.
2. Trade discounts, Quantity discounts, Considered, but not cash discount.
3. Excise duty, Customs duty, Sales tax, VAT, Packing (Non Returnable) to be added.
4. Duties not be added if CENVAT credit availed.
5. Normal loss during transportation, handling has to be deducted from quantity but not from cost.
6. However abnormal loss to be transferred to costing P & L A/c. after deducting from quantity as well as cost.
7. Customs duty to be levied on landed cost [Cost, insurance, freight]

Stores Ledger, Bin Card, Stock Control Card etc.,:

1. Records to be maintained for each item of stores. [Stores ledger] depend upon inventory control system i.e., perpetual (or) periodical.
2. Opening stock, purchases, issues and closing stock to be recorded.
3. Verify closing stock physically with books and treatment of shortage [Normal (or) Abnormal] if any.
4. Purchases to be recorded at cost per unit.
5. Issues to be recorded based on pricing method selected by Cost Accounting Department.
6. Inter departmental transfers not to be recorded.
7. Transfer to suppliers, returns from departments to be recorded at their respective prices, irrespective of pricing method followed.

3. EMPLOYEE COST AND DIRECT EXPENSES



Points to be considered to select plan:

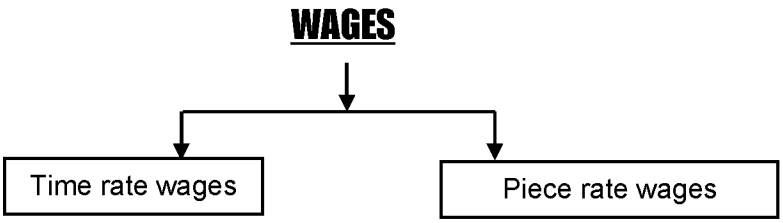
a) Supervision Facility

b) Quantity or Quality which is important

c) Measurement of Output

d) Standardized Product

e) Production Process i.e., mechanized (or)manual



Time rate wages: Under this method wages are paid on the basis of no. of hours worked.

Wages = Rate per hour X No. of hours worked

Advantages: Easy to calculate, Guaranteed wages.

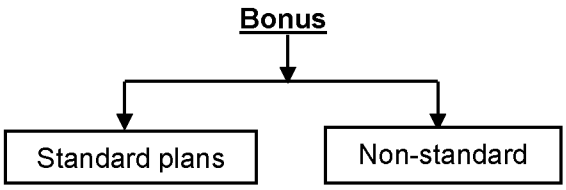
Disadvantages: Efficiency may be on low side, No respect for hard work.

Piece rate wages/ Straight work basis / Payment by results: Under this method, wages are paid on the basis of units produced by the workers.

Wages = Production in Units X Piece rate

Advantages: Respect for efficiency, Less wages for less efficient workers.

Disadvantages: Quality may suffer, No guaranteed wages.



STANDARD PLANS:

Halsey System: Under this system remuneration = Wages + Bonus.

Remuneration = T X R + ½ [T.S. X R]

Where T = Time taken, R = Rate per hour, T.S. = Time saved (Standard time - Actual time)

Standard Time (S.T.) = Standard Time for Actual Production & Actual Time (A.T.) = Actual Time for Actual Production.

E.g.: Time given for each unit - 2 hours. Actual production is 700 units. Standard time for 700 units = 2 hours × 700 = 1,400 hours. Actual time for 700 units = 1,200 hours. Time saved = 200 hours.

Rowan System: Under this system remuneration = Wages + Bonus.

$$\text{Remuneration} = T \times R + \frac{T.S.}{S.T.} \times (T \times R)$$

Taylor Differential Piece rate system: Basically, it is of 2 types, Low piece rate & High piece rate.

High piece rate includes an implicit rate of bonus.

Efficiency %	Piece Rate
At (or) Above 100% (A.T. ≤ S.T.)	High piece rate i.e. [125% × Ordinary Piece rate]
Below 100% (A.T. > S.T.)	Low piece rate i.e. [83% × Ordinary Piece rate]

"SOME AUTHORS ALSO USE 80% AND 120% OF THE PIECE RATES IN PLACE OF 83% AND 125% RESPECTIVELY."

Merrick Differential Piece rate system:

Efficiency %	Piece Rate
Up to 83%	Ordinary Piece rate
Above 83% to 100%	110% of Ordinary Piece rate
> 100%	120% of Ordinary Piece rate

Gantt's task Bonus System: This system is a combination of time and piece work system.

Output	Payment
i) Output below standard	Guaranteed time rate.
ii) Output at standard	Time rate plus bonus of 20% (usually) of time rate.
iii) Output above standard	High piece rate on worker's whole output. It is so fixed, so as to include a bonus of 20% of the time rate.

Barth Premium System: **Wages =** $\left(\sqrt{ST \times AT}\right) \times$ Rate per hour

Beadux Point System:

Remuneration = T X R + Beadux points saved x 75% x Rate per minute

Here, the word Beadux point represents one minute.

Emersion Efficiency Bonus System:

Efficiency level	Payment level
< 66.67%	Only time wages
66.67% to 100%	Time wages + 20% Bonus (Bonus varies between 0.01% and 20%)
> 100%	Time wages + 20% Bonus + 1% Bonus for every 1% increase of efficiency over 100%

NON-STANDARD PLANS: Under these cases the formula for bonus payment will be designed keeping in mind the specific conditions of each organization. The formula may differ from one organization to another organization.

Points to be noted:

a) Efficiency Ratio.

$$\text{Based on time} = \frac{\text{ST (for actual out put)}}{\text{AT (for actual out put)}} \times 100$$

$$\text{Based on Output} = \frac{\text{AO (for actual time)}}{\text{SO (for actual time)}} \times 100$$

$$\text{Activity Ratio} = \frac{\text{ST}}{\text{BT}} \times 100$$

$$\text{Capacity Ratio} = \frac{\text{AT}}{\text{BT}} \times 100$$

Standard time = Standard time for actual production.

Standard Production = Standard production for Actual time.

Points to be noted for Bonus calculation:

i) Find out whether plan is standard (or) Non standard.

ii) Whether it is time based (or) Piece rate based (or) fixed.

iii) Calculate efficiency (or) Time saved depend upon plan.

Time Saved = Standard time for Actual Output - Actual time taken.

$$\text{Efficiency} = \frac{\text{S.T for Actual Output}}{\text{AT}} \quad \text{(or)} \quad \frac{\text{Actual Output}}{\text{S.O for Actual Time}}$$

iv) Apply the formulas if the plan is standard.

v) Calculate Basic Wages based on time (or) Output and add the Bonus as per plan.

b) Over Time:

- If any worker works
- Per day more than 9 hours (or)
- Per week more than 48 hours

} Whichever is higher

It is considered as over time.

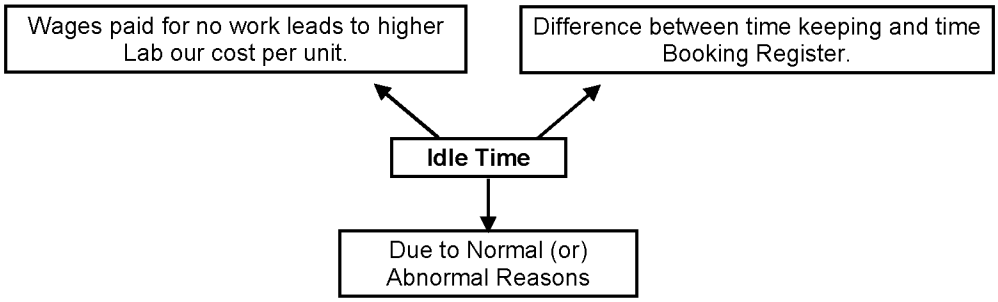
i) Unless & Other wise specified as per Factories Act for over time hour over time premium is to be paid which is equal to normal wages.

ii) It is extra cost to be incurred by the organization.

Treatment of over time Premium:

Reason	Treatment
1. At the request of customer.	**1.** Added to direct labour cost for that job.
2. To cope with demand.	**2.** Add to factory overhead.
3. Due to abnormal conditions (or) Inefficiency of management	**3.** Charged to costing Profit & Loss A/c.
4. It is regular in nature.	**4.** Charged to Direct Lab our cost by calculating inflated wages.

c) Idle Time:



Treatment of Idle time wages:

Reason	Treatment
1. Due to normal reasons such as rest period, Lunch, Switching over jobs, Teas, Snacks break etc.	**1.** Hours has to be deducted but not cost. i.e., normal idle time to be absorbed by good hours worked
2. Due to abnormal reasons such as Power failure, Raw material shortage, Strikes & lock outs etc.	**2.** The wage paid for the idle time has to be borne by the management i.e., charged to costing P&L A/c Hours & Cost has to be deducted.

Calculation of comprehensive Labour Cost per Hour:

i) To charge Labour costs to job it is required to calculate cost pr hour for each type of labour worker and no. of hours worked for each job.

ii) Which calculating cost per hour these points are worth noted.

a) Add dearness allowance to basic wages.

b) Add employee's contribution to P.F & ESI if any to calculate total wages.

c) Calculate No. of actual hours worked by the worker.

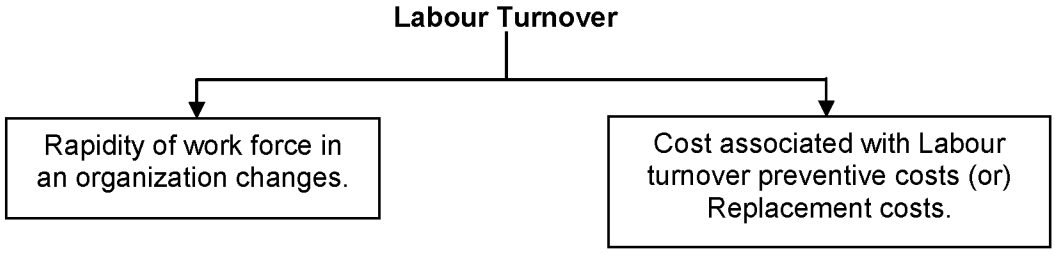
i.e., Total hours - normal idle time - Abnormal idle time if any.

d) Comprehensive Rate per hour = $\frac{\text{Total cost to employer}}{\text{Actual hours worked}}$

iii) While changing labour cost to jobs

First determine total hours worked for each job which will be calculate from job cards (or) time cards

No. of Hour charged to Job = Total Hour - Abnormal idle time.



Calculation of Labour Turnover:

1. Separation Method = $\frac{\text{No. of Separations}}{\text{Average No. of workers}}$

2. Replacement Method = $\frac{\text{No. of Replacements}}{\text{Average No. of workers}}$

3. Recruitment Method = $\frac{\text{Recruitments other than Replacements}}{\text{Average No. of workers}}$

4. Accessions Method = $\frac{\text{Total recruitments}}{\text{Average No. of workers}}$

5. Flux Method:

$$\text{Alternative - I} = \frac{\text{Seperations} + \text{Replacements}}{\text{Average No. of workers}}$$

$$\text{Alternative - II} = \frac{\text{Seperations} + \text{Replacements} + \text{New Recruitments}}{\text{Average No. of workers}}$$

$$\text{Average No. of workers} = \frac{\text{Opening} + \text{Closing}}{2}$$

Notes:

1. To take decision whether to avoid Labour turnover (or) not is depend upon cost of preventing Labour turnover (or) cost of Replacing Labour left.
2. For calculation of cost of Replacing Labour i.e., Training & Recruitment, loss of contribution due to delay in recruitment etc.,
3. The Profit with out Labour turnover & the profit with Labour turnover has to be compared for calculation or cost of Labour turnover.

Direct Expenses:

Expenses other than direct material cost and direct employee cost, which are incurred to manufacture a product or for provision of service and can be directly traced in an economically feasible manner to a cost object. The following costs are examples for direct expenses:

i) Royalty paid/ payable for production or provision of service;

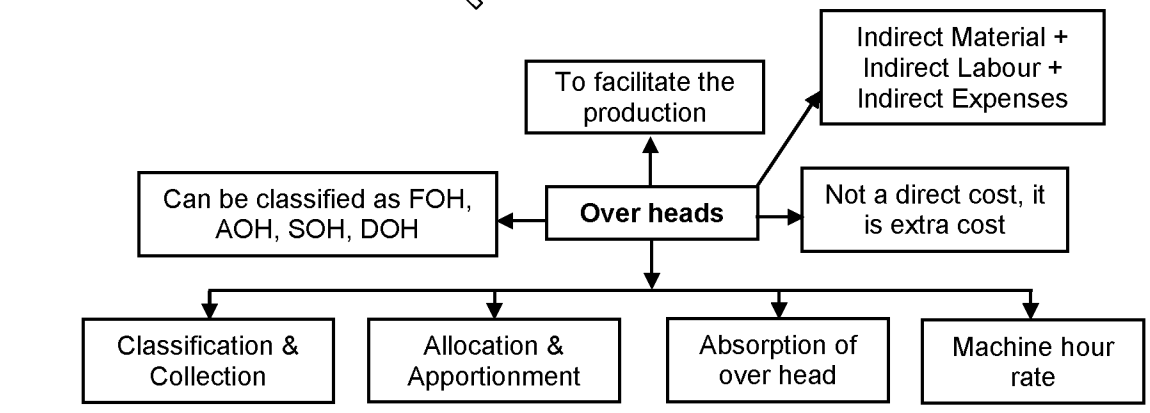
ii) Hire charges paid for hiring specific equipment;

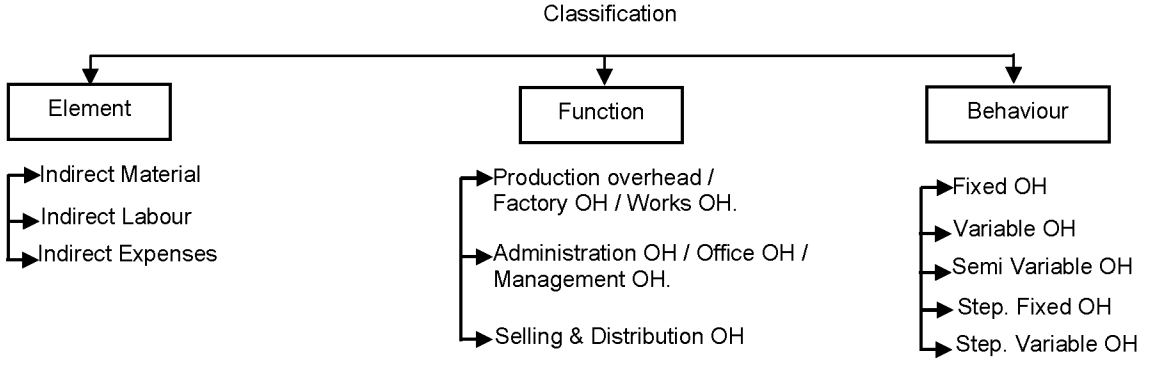
iii) Cost for product/ service specific design or drawing;

iv) Cost of product/ service specific software;

v) Other expenses which are directly related with the production of goods or provision of service.

4. OVERHEADS - ABSORPTION COSTING METHOD

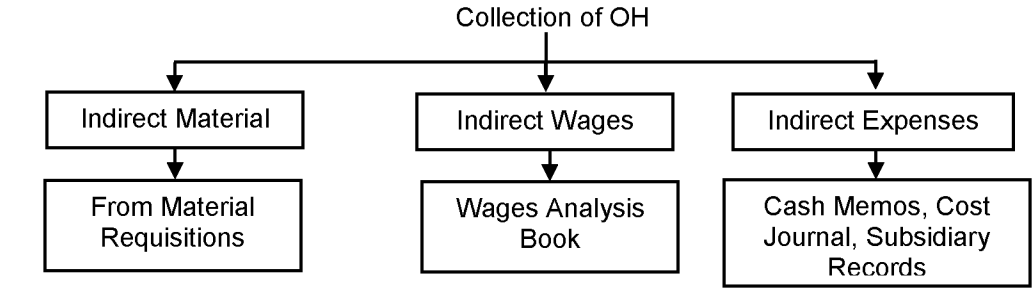


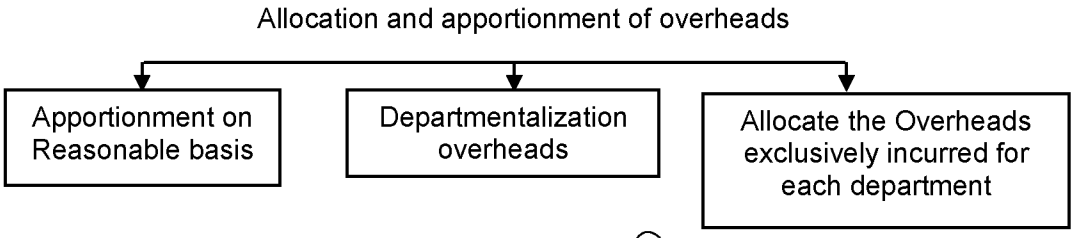


Segregation of Semi Variable OH in to fixed & variable.

$$\text{Variable OH. Rate} = \frac{\text{Difference in total OH}}{\text{Difference in Activity}}$$

Fixed Cost = Total Semi Variable Cost - Variable element.





1. If expenses incurred for each department known separately we can allocate the overheads to the respective department.
2. In case Expenses incurred are not known for each department, we have to apportion the overheads in between the departments on Reasonable basis as follows.

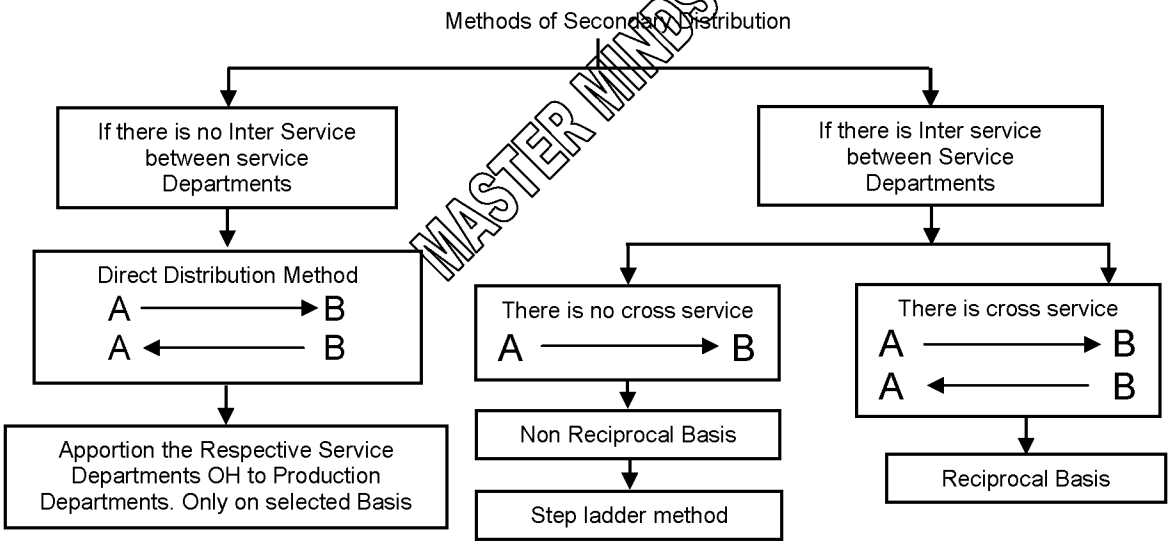
Item	Basis
1. Common Items of Production Overheads	
a) Factory Rent, Rates & Taxes	Floor area Occupied
b) Repairs & Maintenance of Factory Building	Floor area Occupied
c) Insurance of factory building	Floor area Occupied
d) Depreciation of factory building	Floor area Occupied
2.	
a) Repairs & Maintenance of plant & Machinery	Capital cost of plant & machinery
b) Insurance of plant & machinery	Capital cost of plant & machinery
c) Depreciation of plant & machinery	Capital cost of plant & machinery
3. Insurance of Stock	Insured Value of Stock
4.	
a) Supervision	No. of Workers
b) Canteen, Staff welfare expenses	No. of Workers
c) Time keeping & Personnel office expenses	No. of Workers
5.	
a) Compensation to workers	Wages
b) Employees State Insurance Contribution	Wages
c) Provident Fund Contribution	Wages
6. Stores overhead / Stores keeping Expenses	Value of direct materials
7. Material handling charges	Weight of direct material
8. Lighting & Heating	No. of light points / area
9. Power / Steam consumption	Horse Power of machines (or) machine hours

1. Departmentalization of overheads i.e., apportionment & Allocation of overheads can be presented as primary distribution table.
2. After completion of primary distribution the service department overhead has to be reapportioned to production department is called secondary overhead distribution table.

3. Finally we have to charge whatever the overhead incurred to the production for that first we have to identify the cost centers such as departments either production (or) service departments & apportion and allocate the overhead to find out the overheads for each department.

4. However output produced only at production departments, service departments provides assistance to production departments so that service department overheads has to be Reapportioned to production departments on some reasonable basis as follows.

Service Department	Basis
1. Purchase Department	Number of purchase orders or Number of purchase Requisitions or Value of materials purchased.
2. Stores Department	Number of material Requisitions or value of materials issued.
3. Time-keeping Department, Pay-roll Department	No. of employees or Total Labour Hours or machine hours.
4. Personnel Department, Canteen, Welfare, Medical, Recreation Department	No. of Employees or Total wages
5. Repairs and Maintenance	No. of Hours worked in each department
6. Power House	Meter reading (or) H.P Hour for powers, meter reading or floor space of lighting, heat consumed.
7. Inspection	Inspection Hours or value of Items inspected
8. Drawing Office	No. of drawings made or man-hours worked.
9. Accounts Department	No. of workers in each department or time devoted.
10. Tool Room	Direct Labour Hours or machine hours or Wages



Step Ladder Method:

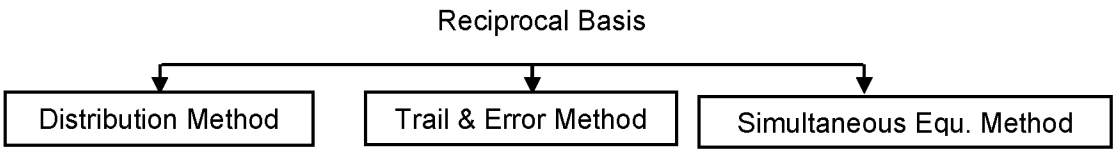
1. First identify the Service Department which provides service to maximum no. of Departments (Production + Service) and apportion that department over head to the rest of Departments.

2. Next the Second Service Department which provides service to maximum no. of departments after first one & apportion that Department OH to rest of departments (But not to the First Service Department).

3. Continue the procedure for all Departments.

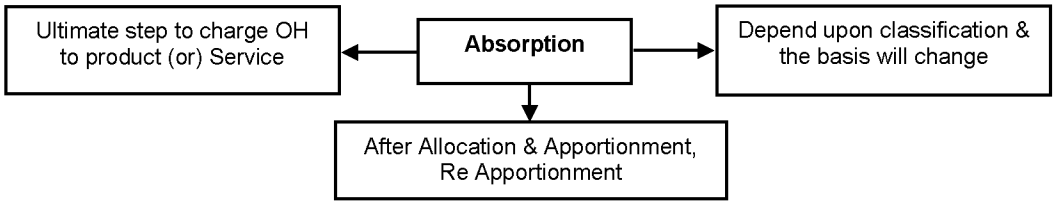
   a) Selection of Sequence of Service Departments to be apportioned is important in case of Step Ladder Method.

   b) If it is given in the problem follow the given sequence.

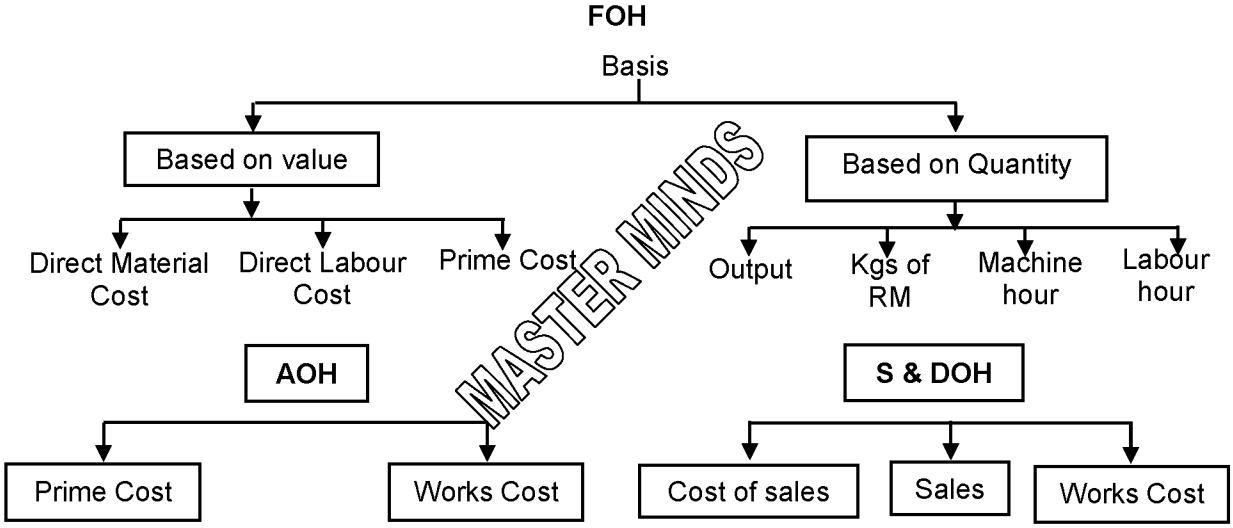


1. Any one of the three methods above can be selected to apportion the Service Departments OH to other Departments [Production + Service]
2. Distribution is cyclic in nature until all Service department OH is exhausted.
3. In case of two Service Departments having large amount of OH then select. Simultaneous equation method, otherwise other methods are suitable.
4. What ever the cost incurred at Service Departments treated as OH even though the costs are termed as Direct cost in relation to Service Departments.

   For Ex: In a Cement manufacturing company, the Diesel cost incurred to produce power in power house (Service Department) can be termed as direct material cost for power house. But with respect to production (cement). It is Indirect material treated as OH to be reappointed to production Departments.



Different OH's Can be absorbed on Different basis as follows:



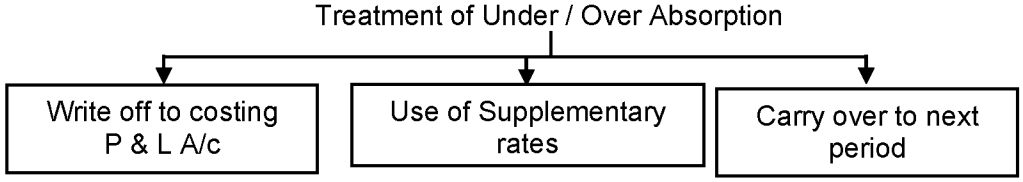
1. While selecting basis we have to consider Various Factors such as the dominant element of cost, production procedure, availability of information, Industrial Norms, connection with overheads etc.

$$\text{Overhead Recovery Rate} = \frac{\text{Estimated OH}}{\text{Estimated basis}}$$

Under / Over Absorption:

a) If Actual OH > Absorbed OH => Under Absorption

Actual OH < Absorbed OH => Over Absorption.



b) Depend upon cause for difference, the treatment is different.

Blanket V/S Departmental:

a) If a single O.H.R.R, is calculated for all Departments it is known as Blanket Recovery Rate.

b) A Separate OHRR is calculated for each department Separately on distinct basis it is known as Departmental Recovery Rate.

c) In case Department wise information is available it is better to, calculate Departmental Recovery Rate, rather than applying Blanket Recovery Rate.

Machine Hour Rate:

1. **In case of mechanized Production:** To calculate the cost of production. We have to calculate the number of hours the machine is used for each type of job (or) product and the Rate per hour for machine.

   Cost to be charged = No. of hours machine used X Rate per hour

   To calculate rate per hour for each type of machine the following points has to be considered

2. Estimate the capacity of machine either it is practical capacity (or) operating capacity, Normal capacity (or) Capacity based on sales expectances.
3. Estimate the cost to be incurred to operate the machine for a given period

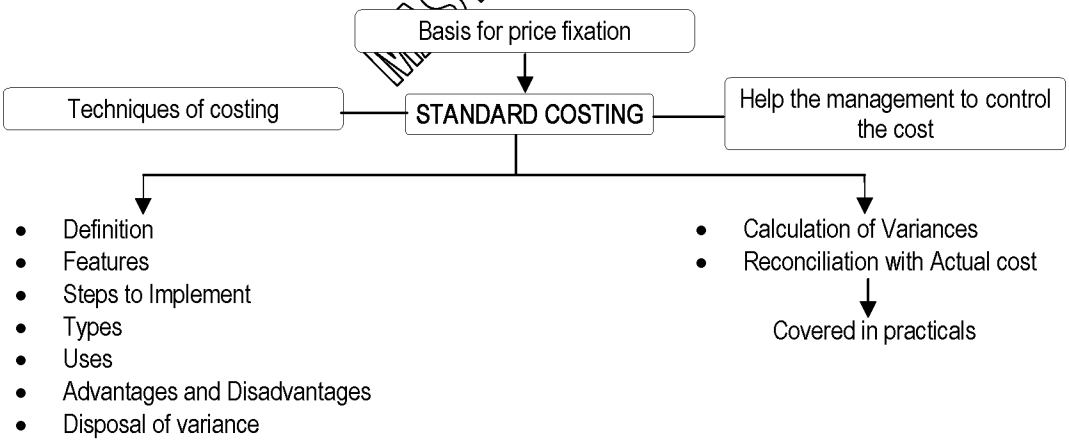
$$\text{Machine Hour Rate} = \frac{\text{Estimated Cost}}{\text{No. of hours worked}}$$

While calculating No. of hours due regard to be given for Normal Idle time and Abnormal Idle time.

Comprehensive View of Overheads Chapter:

1. Overheads = Indirect material + Indirect Lab our + Indirect expenses
2. The costs cannot be identified with cost object.
3. Some of them incurred periodically irrespective of production.
4. Ultimately we have to establish correlation in between overheads incurred & output produced.
5. For that we have to identify the place where Expenses incurred, How it can be collected & grouped as per the requirement and Departmentalize by that charging the overheads to production finally.
6. After Absorbing overheads to products. At the end of the period we can compare it with actual overhead's incurred to calculate under or over absorption of overheads.
7. Depends upon the reason for under / over absorption we can dispose off.

5. STANDARD COSTING



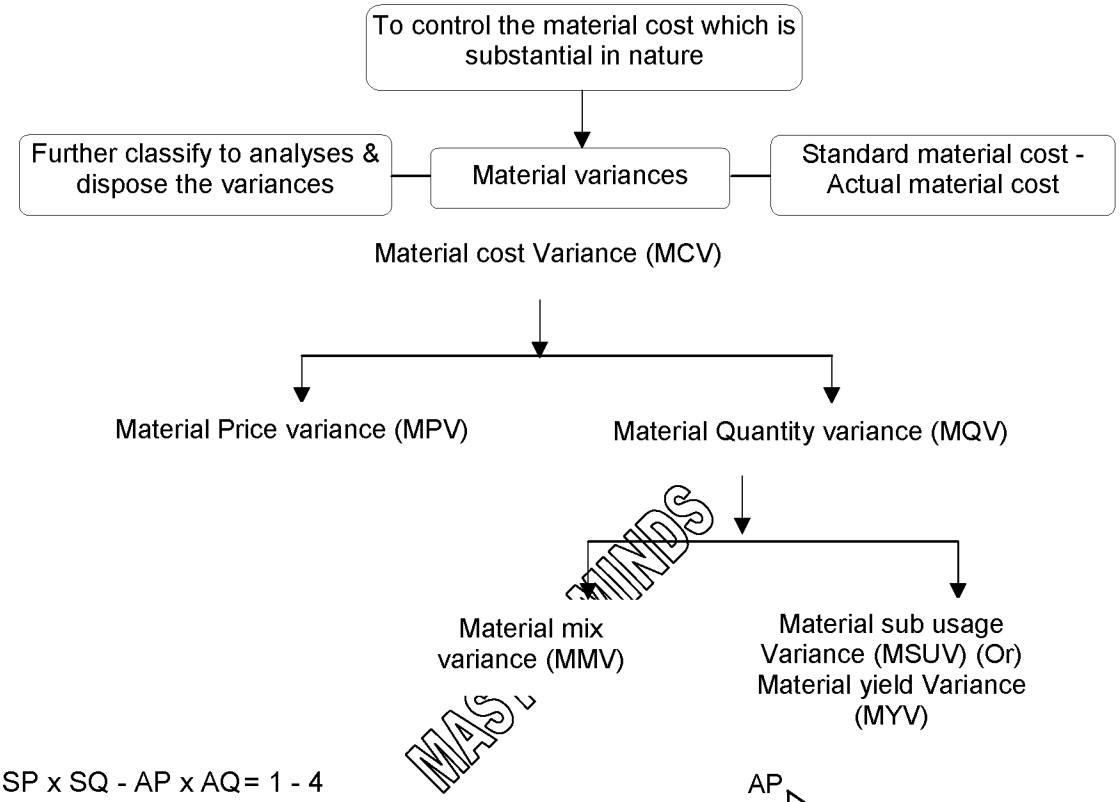
Steps of Standard Costing:

- Setting up standards (in consultation Experts for each Element of cost need to control.
- Record the Actuals
- Find Standard Cost for Actuals
- Compare the Standards with Actuals
- Variance Analysis
- Disposal of variance & Revision of standards if necessary

Variance = Standard Cost - Actual Cost

Types of Variances:

1. Material Variance
2. Labor variance
3. Over variance.
   a) Fixed overhead Variance
   b) Variable overhead Variance



MCV = SP x SQ - AP x AQ= 1 - 4

MPV = (SP - AP) x AQ = SP x AQ - AP x AQ = 3 - 4

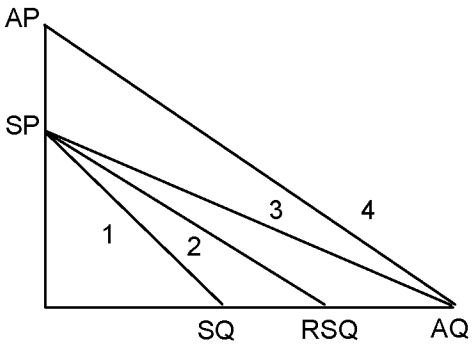
MQV = (SQ - AQ) x SP = SP x SQ - SP x AQ = 1 - 3

MMV = (RSQ - AQ) x SP = SP x RSQ - SP x AQ = 2 - 3

MSUV = (SQ-RSQ) X SP = SP x SQ - SP x RSQ = 1 - 2

(or)

MYV = (AY - RSY) x A.S.C.P.U



Where SP = Standard Price

SQ = standard quantity for Actual output

AP = Actual Price

AQ = Actual quantity of material consumed

RSQ = Revised standard quantity

AY = Actual out put

RSY = standard output for Actual input

A.S.C.P.U = Average standard cost per unit of out put

Note:

- Standard can be expressed either for one unit of out put (or) on any basis. But standard Quantity has to be calculated for actual out put only.
- Always Assure that total input of RSQ & AQ are same.
- Material mix variance & material subs usage variance is required to calculate only when more than one type of material is used.

To control labor cost

Further classified to analyses and dispose the variance — **LABOUR VARIANCE** — Standard labor cost - Actual labor cost

LABOUR COST VARIANCE (LCV)

- Labour Efficiency variance [LEV]
  - Labour Mix variance [LMV]
  - Labour sub Efficiency variance [LSEV] (or) Labour yield variance [LYV]
- Labor Idle time Variance [LITV]
- Labour Rate Variance [LRV]

LCV = SR+SH -AR x $AH_{(P)}$ = 1 - 5

LRV = (SR -AR) x $AH_{(P)}$ = SR x $AH_{(P)}$ - AR x $AH_{(P)}$ = 4 - 5

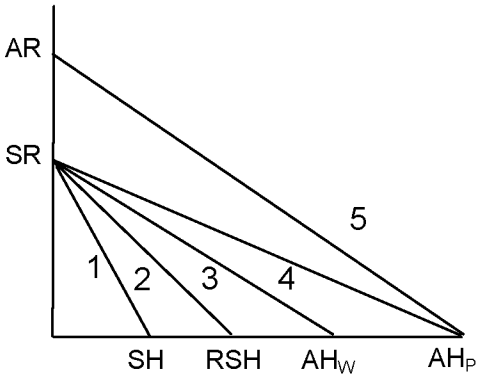
LEV = (SH-$AH_{(W)}$) x SR = SR x SH - SR x $AH_{(W)}$ = 1 - 3

LITV = ($AH_{(W)}$ -$AH_{(P)}$) x SR - SR X RSH -SR x $AH_{(W)}$ = 3 - 4

LMV = (RSH-$AH_{(W)}$) x SR = SR x RSH - SR x $AH_{(W)}$ = 2 - 3

LSEV = (SH - RSH) x SR = SR x SH - SR x RSH = 1 - 2 (or)

LYV = (AY - RSY) x A.S.C.P.U



Where SR = Standard Rate per hour

AR = Actual Rate per hour

SH = Standard hours for actual output

$AH_{(P)}$ = Actual hours paid

$AH_{(W)}$ = Actual hours worked

RSH = Revised Standard Hours [Actual hours Re-written in standard mix]

A.Y = Actual output

R.S.Y = Revised standard output for Actual Hours

A.S.C.P.C = Average standard cost per unit of output

Note: If more than one type of labour is used then mix variance and sub-usage variance to be calculated.

Recovered .O.H COST Actual V.O.H COST — **VARIABLE OVERHEAD VARIANCE** — Controls the V.O.H

V.O.H Cost variance (V.O.H.C.V)

- V.O.H Expenditure
- V.O.H Efficiency
- V.O.H Idle Time variance

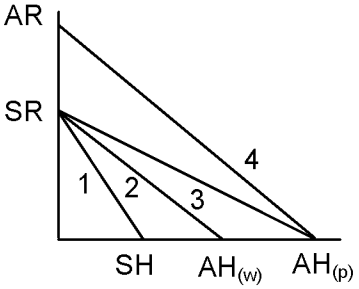
If V.O.H is recovered based on labour Hours:

V.O.H.C.V = SR + SH - AR x $AH_{(P)}$ = 1 - 4

V.O.H Expenditure variance = (SR - AR) x $AH_{(P)}$ = SR x $AH_{(P)}$ - AR x $AH_{(P)}$ = 3 - 4

V.O.H Efficiency variance = (SH - $AH_{(W)}$) x SR = SR x SH - SR x $AH_{(W)}$ = 1 - 2

V.O.H Idle time variance = ($AH_{(W)}$ = $AH_{(P)}$) x SR = SR x $AH_{(W)}$ - SR x $AH_{(P)}$ = 2 - 3



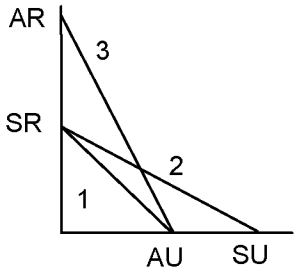
If V.O.H is recovered based on units

V.O.H COST Variance = SR x AU - AR x AU = 1 - 3

V.O.H Expenditure Variance = SR x BU - AR x AU = 2 - 3

V.O.H Efficiency variance = SR x AU - SR x BU = 1 - 2

NO Idle time variance



Where SR = Standard Rate per Hour

AR = Actual Rate per Hour

SU = Standard output for Actual Hours

AU = Actual out put

To control the fixed overhead cost — Fixed overhead variance — Recovered Fixed O.H COST - Actual fixed O.H COST

Fixed overhead cost variance (FOHCV)

- Fixed over head Expenditure variance
- Fixed over head volume variance
  - FOH Efficiency variance
  - FOH Idle time variance
  - FOH capacity variance
  - FOH calendar variance

If Fixed overhead is recovered based on Labour Hours:

F.O.H.C.V. = SR x SH - AR x $AH_{(P)}$ = 1 - 6

F.O.H Expenditure = SR x BH - AR x $AH_{(P)}$ = 5 - 6

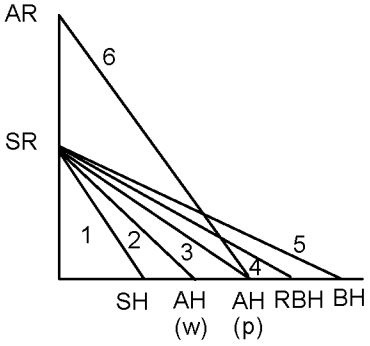
F.O.H VOL Variance = SR x SH - SR x BH = 1 - 5

F.O.H Efficiency variance = SR x SH - SR x $AH_{(W)}$ = 1 - 2

F.O.H Idle time variance = SR x $AH_{(W)}$ - SR x $AH_{(P)}$ = 2 - 3

F.O.H Capacity variance = SR x $AH_{(P)}$ - SR x RBH = 3 - 4

F.O.H Calendar variance = SR x RBH - SR x BH = 4 - 5



Where BH = Budgeted Hours

RBH = Revised Budgeted Hour for Actual days

If Fixed over Head is recovered Based on Units:

F.O.H Cost variance = SR x AU - AR x AU = 1-5

F.O.H Exp variance = SR x BU - AR x AU = 4-5

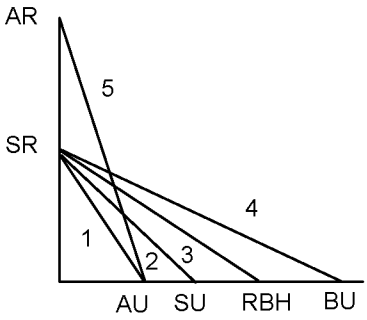
F.O.H Vol. Variance = SR x AU - SR x BU = 1-4

F.O.H Eff. variance = SR x AU - SR x SU = 1-2

F.O.H Cap Variance = SR x SU - SR x RBU = 2-3

F.O.H Calendar variance = SR x RBU - SR x BU = 3-4

NO idle time variance

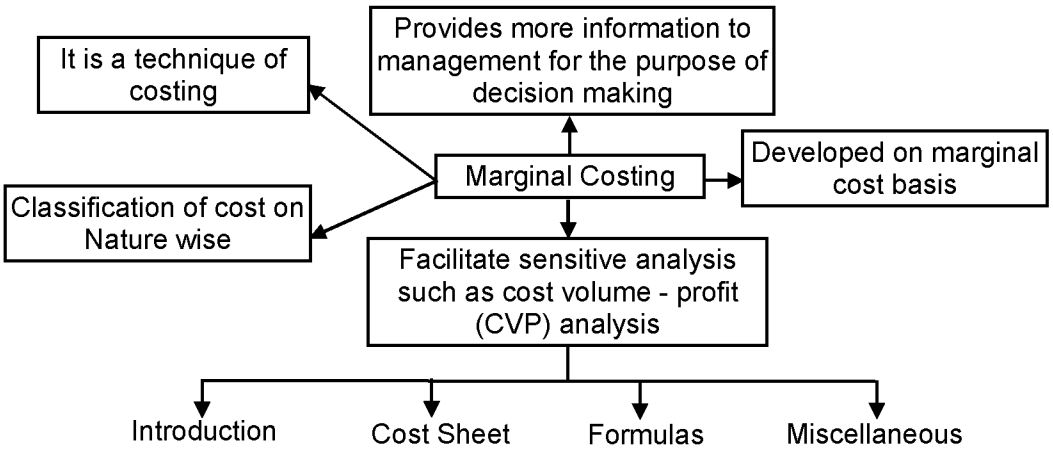


Where, AU = Actual output

BU = Budgeted output

RBU = Revised Budgeted output for actual days

6. MARGINAL COSTING



Income Statement - As per Absorption Costing

Particulars		(Rs.)
Sales		XXXX
Production Costs:		
Direct material consumed		XXXX
Direct labour cost		XXXX
Variable manufacturing overhead		XXXX
Fixed manufacturing overhead		XXXX
Fixed manufacturing overhead		XXXX
Cost of Production		XXXX
Add: Opening stock of finished goods (Value at cost of previous period's production)		XXXX
		XXXX
Less: Closing stock of finished goods (Value at production cost of current period)		XXXX
Cost of Goods Sold		XXXX
Add: (or less) Under (or over) absorption of fixed manufacturing overheads		XXXX
Add: Administration costs	XXX	
Selling and distribution costs	XXX	XXXX
Total Cost		XXXX
Profit (Sales - Total cost)		XXXX

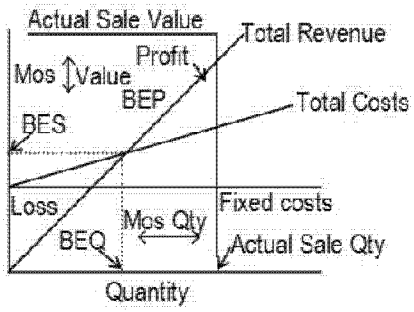
Income Statement - As per Marginal Costing

Particulars	(Rs.)
Sales	XXXX
Production Costs:	
Direct material consumed	XXXX
Direct labour cost	XXXX
Variable manufacturing overhead	XXXX
Cost of Goods Produced	XXXX
Add : Opening Stock of Finished goods (Value at cost of previous period)	XXXX
Less: Closing Stock of Finished goods (Value at current variable cost)	XXXX
Cost of Goods Sold	XXXX
Add : Variable administration, selling and distribution overheads	XXXX
Total Variable Cost	XXXX
Add : Selling and distribution costs	XXXX
Contribution Sales - Total variable costs)	XXXX
Add : Fixed Costs (Production, admin, selling and distribution)	XXXX
Net Profit	

Notes:

1. As per absorption costing costs are classified function wise, element wise, and traceability wise.
2. Where as for applying marginal costing techniques costs are further classified into Nature wise to provide more information & facilitate decision making.
3. As per absorption costing Direct material, Direct labour, Direct expenses, factory overhead treated as production cost and charged to production.
4. As per marginal costing Direct material, Direct labour, Direct expenses, variable factory overhead treated as production cost & charged to production.
5. The profit will vary as per two methods due to different inventory valuations.
6. Marginal costing is developed based on the assumption that Marginal cost = Variable cost
7. It is helpful to fix the price on variable cost basis for special circumstances.

Graphical Representation of Marginal Costing:



Marginal cost Basic equation = 'Sales' - 'Variable Cost' = 'Fixed cost' + 'Profit' = 'Contribution

Break Even Point (BEP): The point at which no Profit (or) no loss situation.

Formulae:

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$\text{BEP (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution P.U.}} = \text{Sales - Margin of Safety = Sales (1 - MOS Ratio)}$$

$$\text{Cash BEP} = \frac{\text{Cash Fixed Cost}}{\text{Contribution Per Unit}}$$

$$\text{Shut down BEP} = \frac{\text{Avoidable Fixed Cost}}{\text{Contribution Per Unit}}$$

BEP Ratio = 1 - MOS Ratio

$$\text{Variable Cost Ratio} = \frac{\text{Variable Cost}}{\text{Sales}} X100 \text{ (or) } \frac{\text{Variable Cost Per Unit}}{\text{Selling Price Per Unit}} X100$$

P/V Ratio:

$$\text{PV Ratio} = \frac{\text{Contribution}}{\text{Sales}} x100 = \frac{\text{Contribution Per Unit}}{\text{Selling Price Per Unit}} x100 = \frac{\text{Change in Profit}}{\text{Change in Sales}} x100$$

$$= \frac{\text{Profit}}{\text{MOS}} = \frac{\text{Fixed Cost}}{\text{BEP}} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}}$$

$$= \frac{\text{Selling price per unit - Variable Cost per unit}}{\text{Selling price per unit}} x100$$

= 1- Variable Cost Ratio

1. Margin of Safety = Sales - Break-even point (Rs.) = Profit / PV ratio = Sales units - BEP units
2. MOS ratio = 1 - BEP ratio
3. MOS units = $\frac{\text{Profit}}{\text{Contribution per unit}}$
4. MOS = $\frac{\text{Contribution - Fixed cost}}{\text{P/V Ratio}}$

Sales = Variable cost + Fixed Cost + Profit = BEP + MOS = $\frac{\text{Fixed cost} + \text{Profit}}{\text{P/V Ratio}}$

Sales in units = $\frac{\text{Fixed cost} + \text{Profit}}{\text{Contribution per unit}}$ = BEP Units + MOS Units = $\frac{\text{Contibution} + \text{Variable Cost}}{\text{Selling Price Per Unit}}$

= $\frac{\text{Contribution}}{\text{P/V Ratio}}$

Fixed Cost = BEP x P/V Ratio = Contribution - Profit = Sales X P/V ratio - Profit

= Total Cost - Variable Cost

Variable Cost = Total cost - Fixed cost = Sales - Contribution = (1 - P/V Ratio) X Sales

= No. of Units X Variable Cost Per Unit

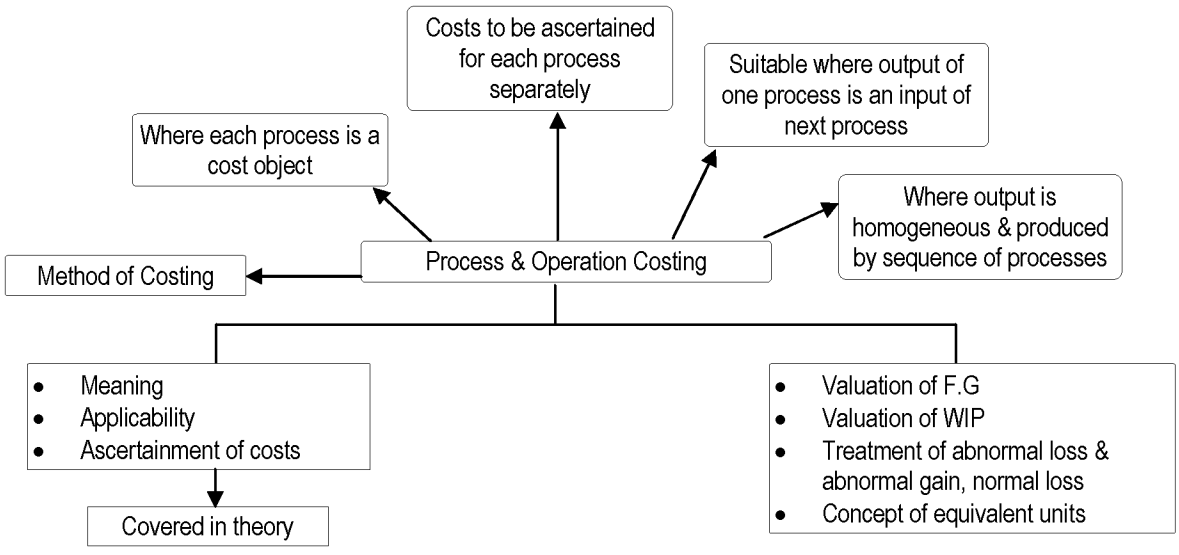
Contribution = Sales - Variable cost = Sales X P/V Ratio = Sales (1 - V.C Ratio)

= Fixed cost + Profit

Important Points:

1. For key factor based decision contribution per key factor has to calculate and Rank accordingly.
2. To maximize the profit we have to frame optimum product mix based on the ranking subject to market constraints.
3. In case of recession (or) slack period the prices can be quoted by applying marginal costing technique i.e., based on variable cost
4. For fixing price at special cases we can use differential costing technique also the difference of total cost in between two scenarios.

7. PROCESS COSTING



Process A/c & Valuation of Factory overheads

$$\text{Cost per good unit} = \frac{\text{Total cost} - \text{Scrap Value of Normal Loss}}{\text{Total input} - \text{Normal Loss Units}}$$

$$\text{Abnormal units} = \text{Total input} - \text{Normal Loss} - \text{Total Actual Output}$$

Input - Normal Loss = Expected or Normal Production

Normal Loss = Input x Percentage of Normal Loss

Abnormal Loss = Expected Production - Actual Production

Abnormal Gain Units = Total Actual Output + Normal Loss Units - Total input

Abnormal Gain = Actual Production - Expected Production

Actual production = Input - Actual Loss

Actual Loss = Input - Actual Output

Important Points:

1. If there is no opening & closing WIP then we can apply above formulas.
2. Unless & otherwise specified we can assume abnormal loss. Occurrence is at the end of process i.e. the Abnormal Loss to be calculated equal to finished goods value.
3. Abnormal gain is always 100% complete in all respects.

Value of WIP:

1. Selection of method is important to value WIP. i.e. FIFO (or) LIFO (or) weightage average.
2. Equivalent units statement to be prepare to value the WIP depend upon selected method
3. Normal Loss units not to be added to equivalent units.
4. Abnormal gain 100%, Complete with respect to all elements i.e. material, labour, overhead, etc.

Specimen format of Equivalent units statements

Input	Particular	Output	Material		Labour		Overhead	
			% of completion	Equivalent units	% of completion	Equivalent units	% of completion	Equivalent units

Treatment of Normal Loss, Abnormal Loss, Abnormal Gain

Normal Loss:

1. Expressed as a percentage of either on total input (or) output (or) throughput (or) production etc.
2. Normal loss units to be included for match the input & output
3. Cost not to be apportion to normal loss if any from cost of process.

Abnormal Loss:

1. Abnormal loss occurs when actual output is lower than expected output.
2. Unless & otherwise specified we value the abnormal loss equal to finished goods assumed 100% complete with respect to all elements
3. If completion stages are given in the problem. We have to value according to that
4. While preparing Abnormal Loss A/c

   Debit with process A/c with cost of Abnormal Loss & Credit with costing P&L Account.

Abnormal Gain:

1. Abnormal Gain arises when the actual output (Finished Goods = Closing Working Progress)
2. Always values equivalent to finished goods i.e. 100% complete irrespective of completion stages given in the problem.

3. While preparing Abnormal Gain Account

   Credit with Process A/c &

   Debit with Normal Loss A/c & costing P&L A/c

Concept of Equivalent Units:

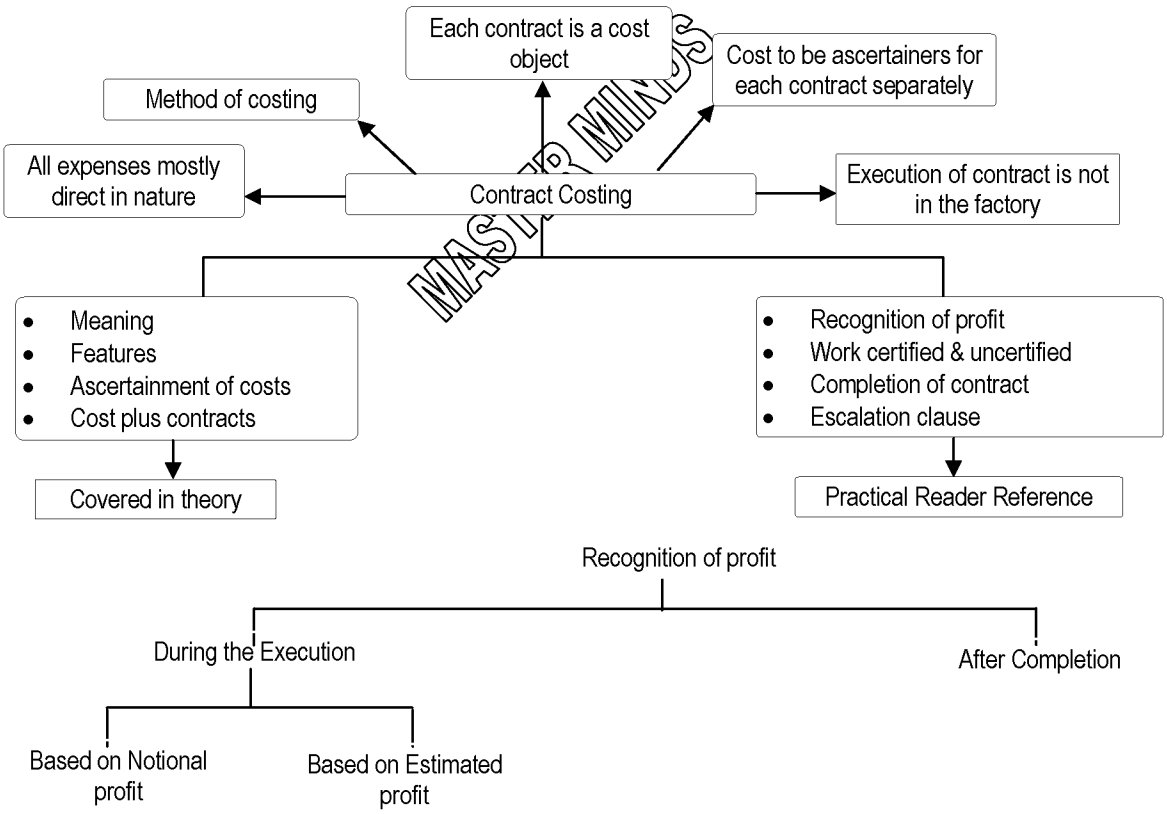
Equivalent production means converting the incomplete production units into their equivalent completed units. Under each process, an estimate is made of the percentage completion of work-in-progress with regard to different elements of costs, viz., material, labour and overheads. It is important that the estimate of percentage of completion should be as accurate as possible.

$$\text{Equivalent completed units} = \begin{pmatrix} \text{Actual number of units in} \\ \text{the process of manufacture} \end{pmatrix} x \left(\text{percentage of work completed}\right)$$

Incase of Work-In-Progress, Steps involved in relation to the preparation of Process A/c.

1. Statement of Equivalent Production units,
2. Statement of Ascertainment of Cost per unit,
3. Statement of Evaluation of Cost,
4. Process A/c.

8. CONTRACT COSTING



Based on Notional Profit we can recognize the profit out of notional profit depend upon % of completion of contract

1. If % of completion of contract is below 25% - NIL
2. If % of completion of contract is 25% to $< 50\% - 1/3$ x Notional Profit x $\frac{\text{Cash received}}{\text{Work certified}}$
3. If % of completion of contract is $\geq 50\%$ to $< 90\% - 2/3$ x Notional Profit x $\frac{\text{Cash received}}{\text{Work certified}}$

4. If % of completion of contract is ≥ 90% and above - based on estimated profit

$$\% \text{ of completion of contract} = \frac{\text{Work certified}}{\text{Contract Price}} \times 100$$

Based on Estimated Profit: If contract is completed 90% & above then

1. $\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}}$
2. *** $\text{Estimated Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$
3. $\text{Estimated Profit} \times \frac{\text{Cost to date}}{\text{Total cost of contract}}$
4. $\text{Estimated Profit} \times \frac{\text{Cost to date}}{\text{Total cost of contract}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$

When Estimated Profit is unable to calculate then, $\text{Notional Profit} \times \frac{\text{Work Certified}}{\text{Contract Price}}$.

*** It is preferably to use formula (2) in the absence of specific instructions.

Estimated Profit = Contract Price -Estimated total cost

Estimated total cost = Cost to date + Estimated Further cost to be incurred to complete the contract

Notional profit = Work Certified + Work Uncertified - Cost incurred upto date

Notional Profit = Work Certified - Cost of Work Certified

Cost work Certified = Cost incurred up-to-date - Work uncertified

Work Certified = Notional Profit + Cost of work Certified.

$$\% \text{ of Degree of completion} = \frac{\text{Work Certified}}{\text{Contract price}}$$

Work Certified & Work Uncertified

Work Certified: Total cost of contract + Notional Profit - Cost of work uncertified.

1. Work certified if the value certified by the contractee or the work done by contractor. It includes profit element & cost of work certified.
2. Work certified is treated as periodical sales to calculate the notional profit.
3. Upon completion of contract the work certified if 100% of contract price until completion of contract work certified to be shown in Balance sheet as a CWIP.

Work Uncertified: Total cost of contract - cost of work certified.

Work certified is that portion of cost which is incurred by the contractor but not certified by contractee. It should be carried at cost only.

Until completion of contract work uncertified to be carried to Balance Sheet.

Escalation Clause

To compensate the contractor from the loss occurred due to unusual increases in prices, the contract deed can contain Escalation Clause.

To calculate the escalation claim amount we have to consider only increase in prices beyond anticipated level but not increases (or) decreases in quantity.

Entry for Escalation Claim Amount:

Contractee A/c - Dr

To Contract A/c

Completion of contract

Upon completion of contract we have to pay

Contractee A/c - Dr.

To contract A/c.

9. UNIT & BATCH COSTING

Unit costing is a method of costing used where the output produced by an entity is identical and each unit of output requires identical cost.

$$\text{Cost per unit} = \frac{\text{Total Cost of Production}}{\text{No. of units produced}}$$

Cost Collection Procedure in Unit Costing:

The cost for production of output is collected element wise and posted in the cost accounting system for cost ascertainment. The element wise collection is done as below:

a) Collection of Materials Cost

b) Collection of Employees (labour) Cost

c) Collection of Overheads

Treatment of spoiled and defective work:

Circumstances	Treatment
Loss due to normal reasons	When a normal rate of defectives has already been established and actual number of defectives is within the normal limit, the cost of rectification or loss will be charged to the entire output. If, on the other hand, the number of defective units substantially exceeds the normal limits, the cost of rectification or loss are written off in Costing P&L A/c.
Loss due to abnormal reasons	In this case cost of rectification and loss is treated as abnormal cost and the cost of rectification or loss is written off as loss in Costing P&L A/c.

Batch Costing: It is a variant of job costing.

Under batch costing, a lot of similar units which comprises the batch may be used as a unit for ascertaining cost.

In batch costing, Separate cost sheets are maintained for each batch of products by assigning a batch number.

$$\text{Cost per unit in a batch} = \frac{\text{Total Cost of a batch}}{\text{No. of units produced in that batch}}$$

Such a method of costing is used in the case of pharmaceutical or drug industries, readymade garment industries, industries, manufacturing electronic parts of T.V. radio sets etc.

Economic Batch Quantity in Batch Costing:

In batch costing the most important problem is the determination of 'Economic Batch Quantity' The determination of economic batch quantity involves two types of costs viz, (i) set up cost and (ii) carrying cost. With the increase in the batch size, there is an increase in the carrying cost but the set-up cost per unit of the product is reduced.

$$EBQ = \sqrt{\frac{2AS}{C}}$$

Where, A = Annual demand for the product

S = Setting up cost per batch

C = Carrying cost per unit of production per annum

10. COST ACCOUNTING SYSTEMS

1. Usually in the business there are two types of transactions occurs, ***i.e. financial transactions & Cost transactions.***

2. **Cost Control Accounts:** These are accounts maintained for the purpose of exercising control over the costing ledgers and also to complete the double entry in cost accounts

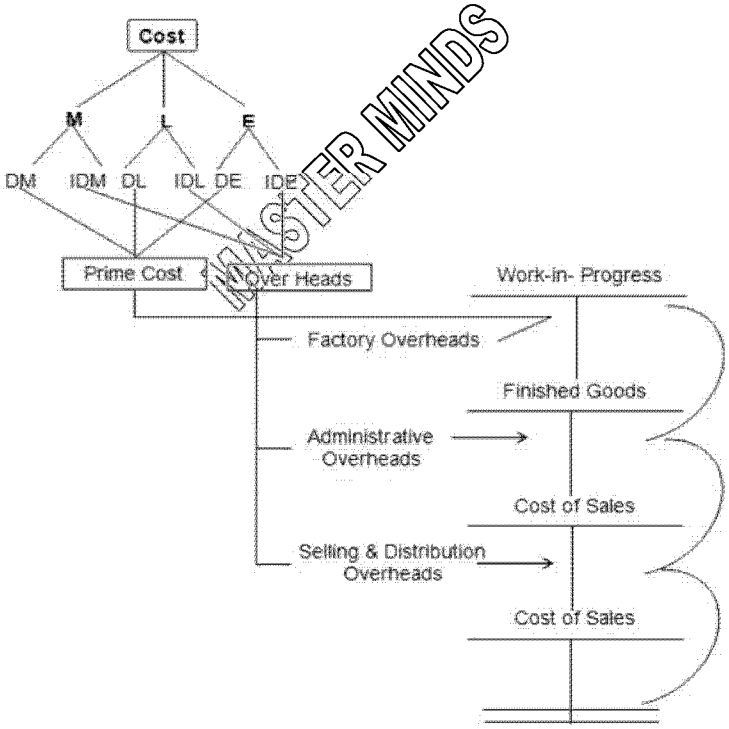
There are Two systems of maintain cost accounts as:

Non - Integral System: Financial & Cost books are maintained separately.	**Integral System:** Both financial & cost transactions are recorded in same set of books.

3. **Reconciliation:** In the Non-Integral System of Accounting, since the cost and financial accounts are kept separately, it is imperative that those should be reconciled; otherwise the cost accounts would not be reliable.

   The reason for profit differences in the cost & financial accounts can be of purely financial nature (Income and expenses ignores cost books) and notional nature (Opportunity cost etc. ignores Financial books).

Non-Integral System: A system of accounting where both costing and Financial transaction are recorded in the same set of books.



Ledgers in cost books:

1. Cost Ledger /General Ledger adjustments or control (Cr)
2. Stores Ledger (raw material components) (Dr)
3. WIP Ledger (Dr)
4. Finished Goods Ledger(Dr)

Important Control Accounts in cost system: (refer above chart):

1. Stored Ledger Control Account
2. Wage Control Account
3. Factory Overhead Account(under /over applied, Dr/Cr)
4. W-I-P Control Account

5. Finished Goods Control Accounts
6. Administration Overhead Account(under /over applied, Dr/Cr)
7. Selling and Distribution Overhead Account(under /over applied, Dr/Cr)
8. Cost of Sales Account
9. Overhead Adjustment Account
10. Costing Profit & Loss Account
11. Cost Ledger(G/L) Adjustment Account

Profit Reconciliation: Two of profits based on cost and financial records are reported. There is a need for reconciling the differences between these figures of profits.

List of items causing differences between Cost & Finance Books that affects profit:

1. Differences in Stock Valuation
2. Difference in absorption (OH)
3. Items included in the Financial but not in Cost Accounts, Vice versa.

Integral System: Is the name given to a system of accounting, whereby cost and financial accounts are kept in the same set of books. It provides relevant information which is necessary for preparing financial statements as per requirement of law.

Advantages:

1. No need for reconciliation
2. Less efforts (due to one set of books)
3. Less time consuming
4. Economical process (centralization of accounting function)

RECONCILIATION OF COST AND FINANCIAL STATEMENTS:

When the cost and financial accounts are kept separately, It is imperative that these should be reconciled, otherwise the cost accounts would not be reliable. The reconciliation of two set of accounts can be made, if both the sets contain sufficient detail as would enable the causes of differences to be located. It is therefore, important that in the financial accounts, the expenses should be analysed in the same way as in cost accounts. It is important to know the causes which generally give rise to differences in the costs & financial accounts.

Reasons for disagreement of profits as per cost and financial accounts:

1. **Items appearing only in financial accounts:** The following items of income and expenditure are normally included in financial accounts and not in cost accounts. Their inclusion in cost accounts might lead to unwise managerial decisions. These items are:
   a) **Income:**
      i) Profit on sale of assets
      ii) Interest received
      iii) Dividend received
      iv) Rent receivable
      v) Share Transfer fees
   b) **Expenditure:**
      i) Loss on sale of assets
      ii) Uninsured destruction of assets
      iii) Loss due to scrapping of plan and machinery
      iv) Preliminary expenses written off
      v) Goodwill written off
      vi) Underwriting commission and debenture discount written off
      vii) Interest on mortgage and loans
      viii) Fines and penalties

c) **Appropriation:**

i) Dividends ii) Reserves

iii) Dividend equalization fund, Sinking fund etc.

2. **Items appearing only in cost accounts:** There are some items which are included in cost accounts but not in financial account. These are:

i) Notional interest on own capital;

ii) Notional rent on premises owned.

iii) Salary to proprietor

iv) Depreciation on assets which are fully depreciated

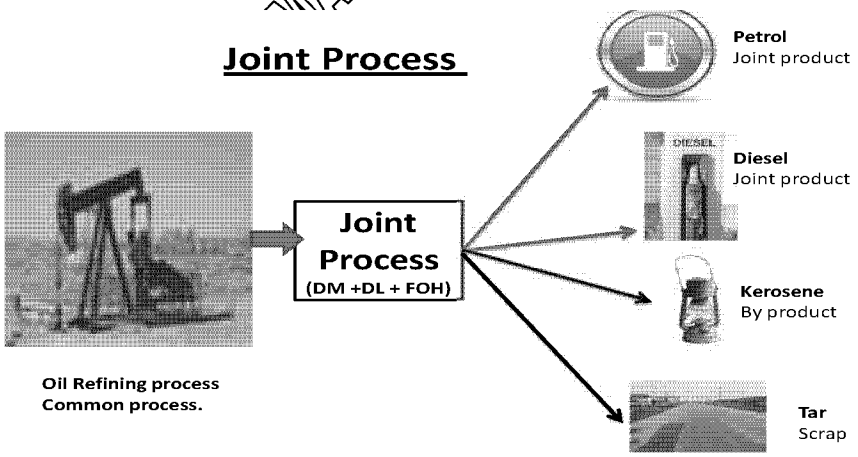
3. **Under or over-absorption of overhead:** In cost accounts overheads are charged to production at pre-determined rates where in financial accounts actual amount of overhead is charged, the difference gives rise under or over-absorption; causing a difference in profits.

4. **Different bases of stock valuation:** In financial books, stocks are valued at cost or market price, whichever is lower. In cost books, however, stock of materials may be valued on FIFO or LIFO basis and work-in-progress may be valued at prime cost or works cost. Differences in store valuation may thus cause a difference between the two profits.

5. **Depreciation:** The amount of depreciation charge may be different in the two sets of books either because of the different methods of calculating depreciation or the rates adopted. In cost accounts, for instance, the straight line method may be adopted whereas in financial accounts it may be the diminishing balance method.

11. JOINT AND BY PRODUCTS

Joint process: Single process in which one product cannot be manufactured without producing others.



A joint process produces;

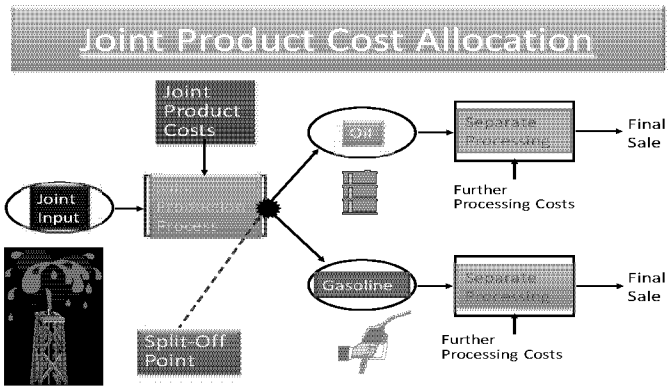
Joint products: Primary outputs of a joint process; substantial revenue-generating ability

By-products: Incidental output of a joint process with a higher sales value than scrap but less than joint products.

Scrap: Incidental output of a joint process with a low sales value

Waste: Residual output with no sales value

JOINT PRODUCT COST



- The ***split- off point*** is the stage of production process where one or more products in a joint-cost setting become separately identifiable.
- **Joint costs** - material, labor, and overhead incurred during a joint process
- ***Separable costs*** are all costs (manufacturing, marketing, distribution, etc.) incurred beyond the split off point that are assignable to one or more individual products.

Why we Allocate Joint Costs?

- To compute inventory cost &measurement of income
- To determine cost reimbursement under contracts
- For Decision making (i.e. Process further or not)

METHOD OF APPORTIONING JOINT COST:

1. **Physical-Units Method:** Allocation based on a physical measure of the joint products at the Split-off point.
2. **Average unit Method**
3. **Contribution Margin Method**
4. **Technical Evaluation Method**
5. **Market Value at split off point method**
6. **Market value after split off point Method**
7. **NRV method**

BY-PRODUCT COST

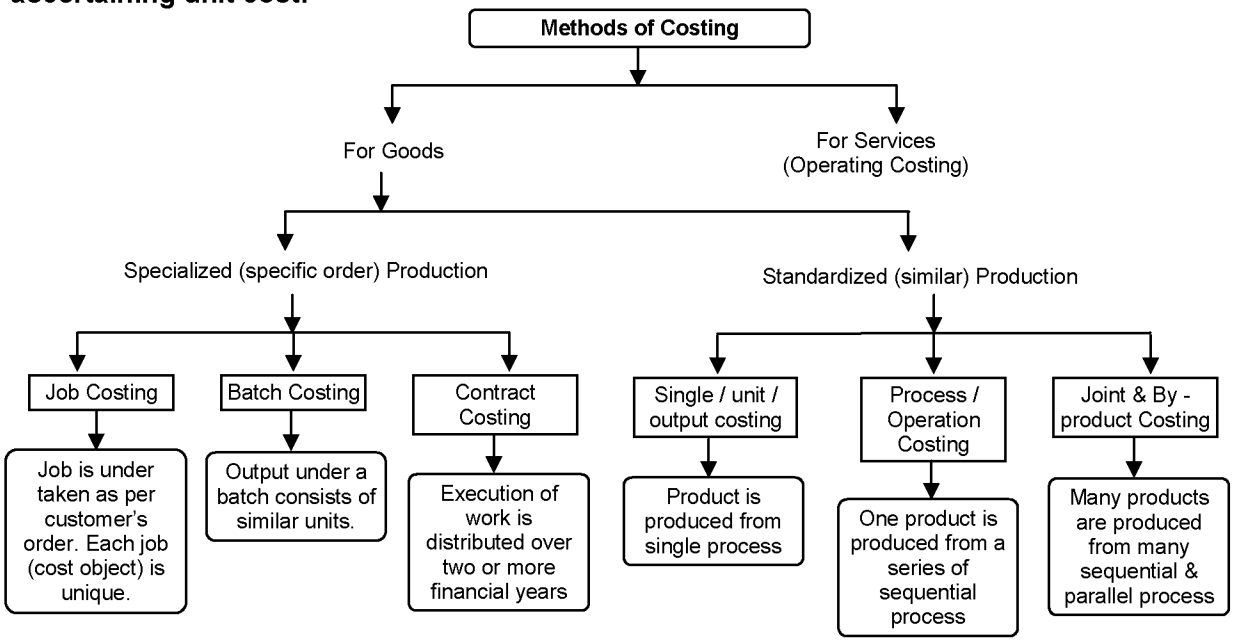
1. By-product costs are not individually identifiable until manufacturing reaches a split-off point.
2. By-product costs have a relatively insignificant sales value in comparison with other products emerging at split-off.

COST ACCOUNTING TREATMENT:

1. When By-Product are of small total value: Credited P/L A/c or Deduct from the total cost of main product.
2. When By-Product are of considerable total value: They may be regarded as Joint product rather than By-Product.
3. When the By-Product require further processing: The NRV of the By-product at the split-off point may be arrived at by subtracting the further processing cost from the realisable value of By-product.

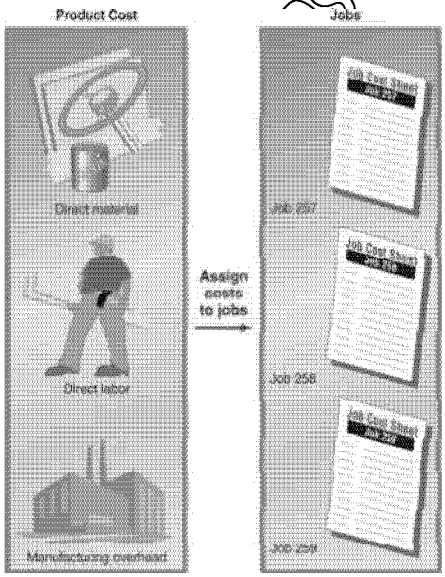
12. JOB COSTING

For ascertaining unit cost:

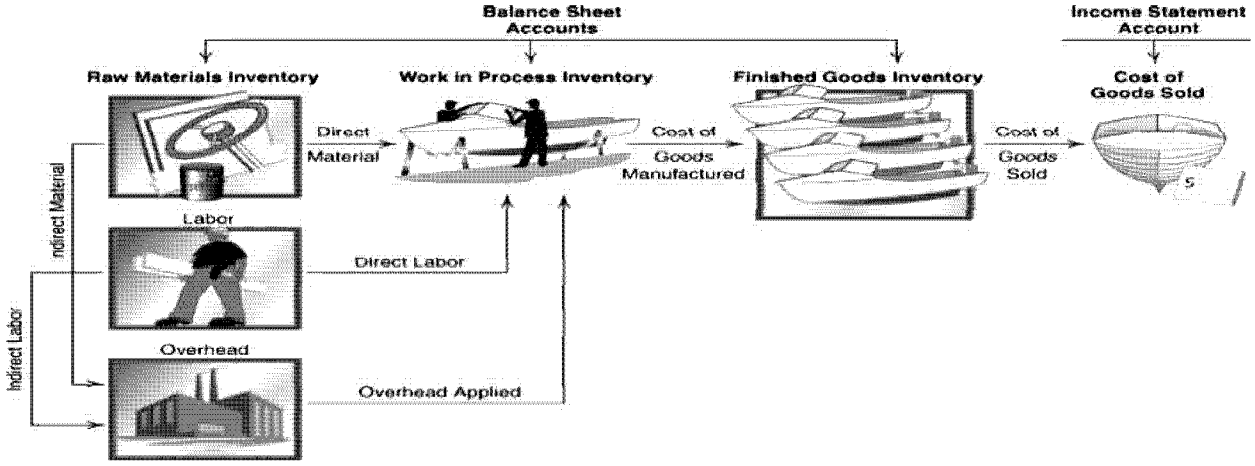


- A separate job cost sheet or Job card is used for each job or cost object.

Relating Product Costs to Jobs (Each Cost Object)



Flow of Product Costs in Job Order System

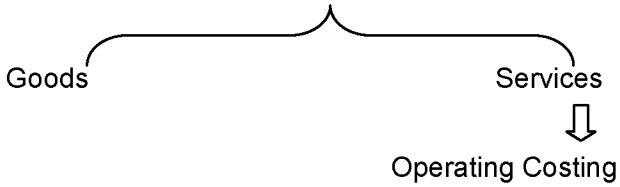


Advantages:

1. To ascertains units cost & profit or loss by each job
2. To control the cost (through efficiency)
3. To know detailed analysis of costs, I.e. Materials, Labour, Overheads etc.

13. SERVICE COSTING

METHODS OF COSTING
(For finding or ascertaining unit cost)



Basic Features:

1. Services are standardized.
2. Investment in fixed assets is high and working capital is low.
3. Major portion of the total cost is fixed. Cost per unit decrease if cost driver increases.

Applicability: to standardize services like .....***Hospitals, Hotels, Passenger Transport, Cargo transport, Canteen, Electricity supply, Cinema Houses etc.***

INDUSTRY	COST UNIT
Hospitals	Patient/bed Days
Hotels	Guest Days, Room Days.
Passenger Transport	Passenger Kilometers.
Cargo Transport	Tonne Kilometers.
Canteens	Number of Meals served, Number of tea cups sold etc.
Electricity Supply	Kilowatt Hours Or units
Boiler Houses	Quantity of Steam raised (therms)
Cinema Houses	Number of Tickets, Number of Shows.
Banks or Financial Institution	Per transaction, per services (e.g. per letter of credit, per application, per project etc.)
Educational Institutes	Per course, per student, per batch, per lecture etc.
IT & ITES	Cost per project, per module etc.
Insurance	Per policy, Per claim, Per TPA etc.

i) Accumulated operating cost or collection of Cost for the period includes:

Fixed cost	or	Standing charges
Variable cost	or	Running charges
Semi-Variable cost	or	Maintenance charges

ii) No. of units or cost driver : either

a) **Simple Cost unit (only one cost driver in use):** Per Km, Per Passenger, Per Patient

b) **Composite Cost unit (Two cost drivers in use & mixed with one):** Per Tonne Km, Per Passenger Km, Per Patient Day etc.

Composite cost driver is more accurate.

Absolute Tonne Kilometres: This is the sum total of tonne - Kilometres, arrived at by multiplying various distances by respective load quantities carried.

Commercial Tonne Kilometres: It is derived by multiplying total Distance (Kms) by average load quantity.

14. BUDGETARY CONTROL

Meaning: "A financial and/or quantitative statement prepared and approved prior to a defined Period of time of the policy to be pursued during that period for the purpose of attaining a given objective. It may include income, expenditure and employment of capital".

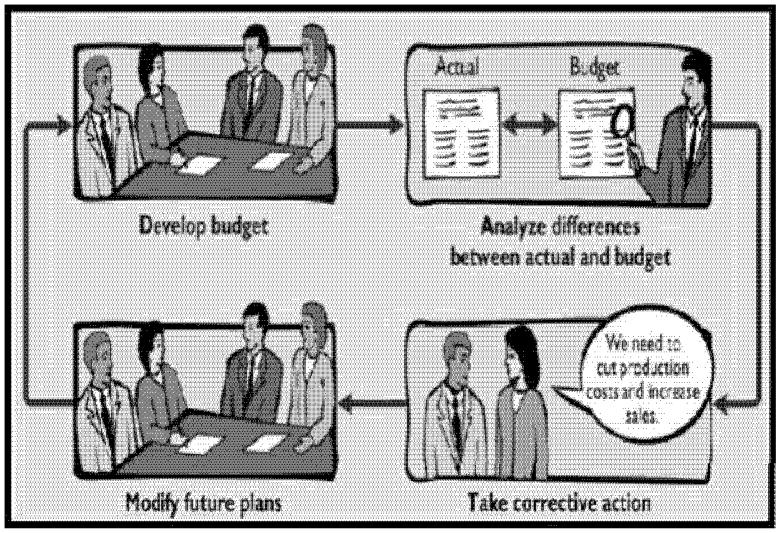
Characteristics:

- Prepared in advance
- Relates to future period
- Expressed in quantitative/ financial terms.

Objectives: To achieve firm's objectives efficiently (minimal resource) & effectively.

- Planning
- Directing and Motivating
- Controlling (Investigation, Management by Exception)

Budgetary Control



- Budgets are useful in controlling operations
- Compare actual results with planned objectives.(variance analysis)
- Management by Exception.

Benefits of Budgeting

Thinking Ahead	Communication	Motivation
Forcing managers to look ahead and state their goals for the future	Communicating management's expectations and priorities	Providing motivation for employee s to work toward organizational objectives
Providing lead time to solve potential problems	Promoting cooperation and coordination between functional area s of the organization	Providing a benchmark for evaluating performance

Disadvantages:

1. Based on estimation
2. Time factor
3. Co-operation required
4. Expensive
5. It is only managerial tool (not substitute my management)
6. Rigid document

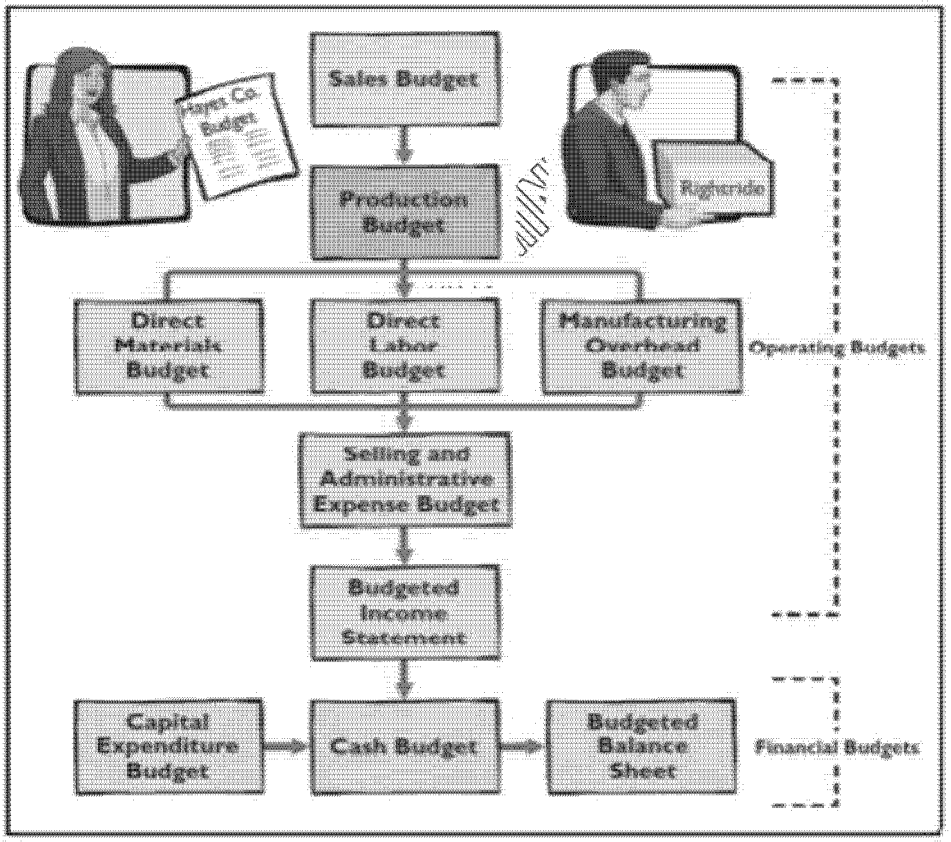
Types of Budgets

- **According to Period**
  1. Long term budget
  2. Short term budget
  3. Current budget
- **According to Function**
  1. Sales budget
  2. Production budget
  3. Cost of Production budget
  4. Purchase budget
  5. R & D budget
  6. Capital Expenditure budget
  7. Cash budget
- **Master Budget**
- **According to Capacity**
  1. Fixed budget
  2. Flexible

Fixed Budget: It is remain unchanged irrespective of the level of activity actually achieved.

Flexible Budget: It changes according the level of activity actually achieved.

Budgeting - Master Budget



i) Production (in units) = No. of units to be Sold + Closing stock of Finished goods - Opening stock of Finished goods

ii) Consumption of Raw materials (Qty.) = Production (in units) x consumption of raw material per unit

(OR)

= Opening stock + purchase of RM - Closing stock

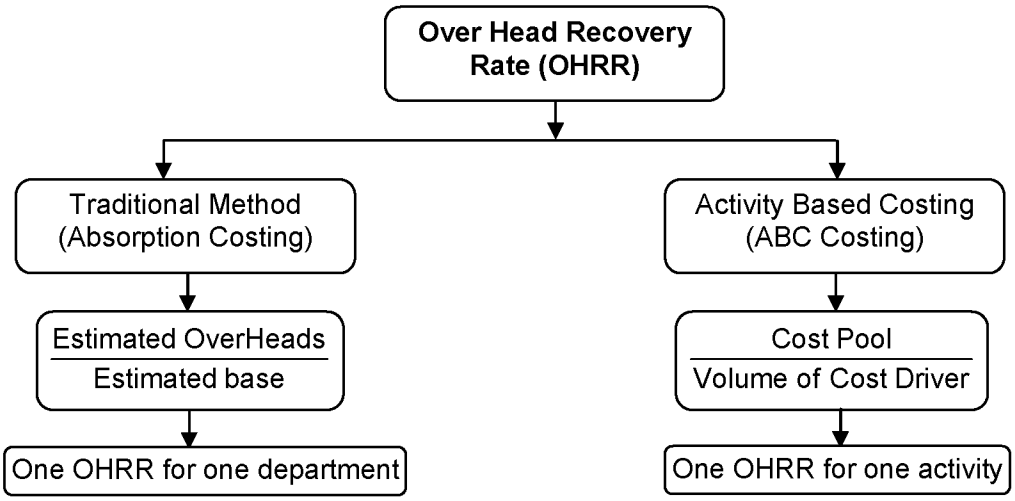
iii) Purchase of raw material (Qty.) = Consumption + Closing stock - Opening stock

iv) Purchase of raw material (Rs.) = Purchase of raw material (Qty) x purchase cost per kg

v) Labour hours required = Production (in units) x Labour hours required per unit

vi) Machine hours required = Production (in units) x Machine hours required per unit

15. ACTIVITY BASED COSTING (ABC COSTING)



Meaning of terms used in ABC Costing:

i) **Activity:** Activity, here, refers to an event that incurs cost.

ii) **A Cost Object:** It is an item for which cost measurement is required e.g. a product or a customer.

iii) **A Cost Driver:** It is a factor that causes a change in the cost of an activity. There are two categories of cost driver. Example Production runs

- **A Resource Cost Driver:** It is a measure of the quantity of resources consumed by an activity. It is used to assign the cost of a resource to an activity or cost pool.
- **An Activity Cost Driver:** It is a measure of the frequency and intensity of demand, placed on activities by cost objects. It is used to assign activity costs to cost objects.

iv) **Cost Pool:** It represents a group of various individual cost items. It consists of costs that have same cause effect relationship. Ex: Machine set-up.

Examples of Cost Drivers:

Business functions	Cost Driver
Research and Development	• Number of research projects
	• Personnel hours on a project
Design of products, services and procedures	• Number of products in design
	• Number of parts per product
	• Number of engineering hours
Customer Service	• Number of service calls
	• Number of products serviced
	• Hours spent on servicing products
Marketing	• Number of advertisements
	• Number of sales personnel
	• Sales revenue
Distribution	• Number of units distributed
	• Number of customers

THE END