

CA INTER

COST AND MANAGEMENT ACCOUNTING

FORMULA SHEET

Material Cost

Re-order Stock Level (ROL)

$$\text{ROL} = \text{Max. Con.} \times \text{Max. Lead time}$$

or

$$= \text{Min. Stock} + (\text{Avg Consumption.} \times \text{Avg Lead time})$$

Economic Order Quantity (EOQ)

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

A = Annual Requirement
 O = Cost per order
 C = Carrying cost p.u. p.a.

Minimum Stock Level

$$= \text{ROL} - (\text{Avg Con.} \times \text{Avg. Lt})$$

Maximum Stock Level

$$= \text{ROL} + \text{ROQ} - (\text{Min Consumption} \times \text{Min Lead time})$$

Average Inventory Level

$$= \text{Min. stock} + \frac{1}{2} \text{ROL}$$

(or)

$$= \frac{1}{2} (\text{Max. Stock} + \text{Min. Stock})$$

Danger Level

= Avg Consumption x Lead time for emergency

Where, Lt = lead time or Re-order period

Inventory Turnover Ratio

$$= \frac{\text{Cost of Materials Consumed}}{\text{Cost of Average Stock held}}$$

$$\text{Avg stock} = \frac{1}{2} (\text{Opening} + \text{Closing})$$

Average no. of days of Inventory holding

$$= \frac{365 \text{ days} / 12 \text{ months}}{\text{Inventory Turnover Ratio}}$$

Employee Cost

Wage Payment methods

Straight Time Rate System

$$= \text{Time Worked} \times \text{Rate for the time}$$

Straight Piece Rate System

$$= \text{No. of units} \times \text{Rate per unit}$$

Halsey Premium Plan

$$= \text{Time Taken} \times \text{Time rate} + (50\% \text{ of time saved} \times \text{time rate})$$

Rowan Premium Plan

$$= \text{Time Taken} \times \text{Time rate} + \frac{\text{Time Saved}}{\text{Time Allowed}} \times \text{Time taken} \times \text{Rate}$$

Efficiency Rating

Efficiency in %

$$= \frac{\text{Time allowed as per standard}}{\text{Time Taken}} \times 100$$

Employee Productivity

$$= \frac{\text{Standard time for doing actual work}}{\text{Actual time taken}}$$

Employee Turnover

Replacement Method

$$= \frac{\text{No. of Employees Replaced}}{\text{Average no. of employees}} \times 100$$

Separation Method

$$= \frac{\text{No. of Employees Separated}}{\text{Average no. of employees}} \times 100$$

Flux Method

$$= \frac{\text{No. of Separations} + \text{Accessions}}{\text{Average no. of employees}} \times 100$$

Equivalent Employee TO Rate

$$= \frac{\text{No. of Employees Replaced}}{\text{Average no. of employees}} \times 365$$

Overheads: Absorption Costing Method

Overheads Absorption Methods

% of Direct Material

$$= \frac{\text{Total Production Overheads}}{\text{Budgeted Direct Material Cost}}$$

% of Prime Cost

$$= \frac{\text{Total Production Overheads}}{\text{Prime Cost}}$$

% of Direct Labour Cost

$$= \frac{\text{Total Production Overheads}}{\text{Direct Labour Cost}}$$

Labour Hour Rate

$$= \frac{\text{Total Production Overheads}}{\text{Direct Labour Hour}}$$

Rate per unit of output

$$= \frac{\text{Amount of Overheads}}{\text{Number of units}}$$

Types of Overhead Rates

Normal OH Rate

$$= \frac{\text{Actual amount of Overheads}}{\text{Actual base}}$$

Pre-determined Rate

$$= \frac{\text{Budgeted amount of Overheads}}{\text{Budgeted base}}$$

Blanked Rate

$$= \frac{\text{Total Overheads for the factory}}{\text{Total units of base for the factory}}$$

Departmental OH Rate

$$= \frac{\text{OH of department or cost centre}}{\text{Corresponding base}}$$

Supplementary Rate

$$= \frac{\text{Under / Over absorbed Overheads}}{\text{Units produced}}$$

Activity Based Costing

Activity cost driver rate

$$= \frac{\text{Total cost of activity}}{\text{Activity driver}}$$

Unit & Batch Costing

Cost per unit

$$= \frac{\text{Total cost of Production}}{\text{No. of units produced}}$$

Economic Batch Quantity

$$EQB = \sqrt{\frac{2DS}{C}}$$

D = Annual demand for product

S = Setting up cost per batch

C = Carrying cost per unit

Process & Operation Costing

Value of units transferred

$$= \frac{TC - RV \text{ of normal loss}}{\text{input units} - \text{normal loss units} \times \text{units transferred}}$$

Value of Normal loss

= Scrap RV - cost to sales

Value of Abnormal loss

$$= \frac{TC - RV \text{ of normal loss}}{\text{input units} - \text{normal loss units} \times \text{Abnormal loss units}}$$

where, TC = total cost

RV = realizable value

Equivalent completed units

= Actual units in process
x % of work completed

Standard Costing

Material Cost Variance

= (SQ x SP) - (AQ x AP)

Material Price Variance

= (SP - AP) x AQ

Material Usage Variance

= (SQ - AQ) x SP

Material Mix Variance

= (RSQ - AQ) x SP

Material Yield Variance

= (SQ - RSQ) x SP

Labour Cost Variance

= (SH x SR) - (AH x AR)

Labour Rate Variance

= (SR - AR) x AH

Labour Efficiency Variance

= (SH - AH) x SR

Labour Mix Variance

= (RSH - AH) x SR

Labour Yield Variance

= (SH - RSH) x SR

Idle Time Variance

= SR x Actual Idle Hours

Variable OH Cost Variance

= Std OH for actual prod.
- Actual OH

V OH Expenditure Variance

= (SR - AR) x AH

V OH Efficiency Variance

= (SH - AH) x SR

Fixed OH Cost Variance

= Absorbed - Actual

Fixed OH Expenditure Variance

= Budgeted - Actual

Fixed OH Volume Variance

= Absorbed - Budgeted

Fixed OH Efficiency Variance

= Absorbed - Standard

Fixed OH Capacity Variance

= Standard - Budgeted

Fixed OH Calendar Variance

= SR x (Actual working days -
Std Working days)

Marginal Costing

Contribution

= Sales - Variable cost
(Or)

= Fixed cost + profit

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

Break-even point

in units = $\frac{\text{Fixed cost}}{\text{Contribution per unit}}$

in value = $\frac{\text{Fixed cost}}{\text{P/V Ratio}}$

Cash Break-even point in units

= $\frac{\text{Cash Fixed cost}}{\text{Contribution per unit}}$

Required Sales

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

Margin of Safety

= Actual Sales - BE point
(or)

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

Margin of Safety ratio

= $\frac{\text{Total sales} - \text{BE sales}}{\text{Total sales}}$

Budgets & Budgetary Controls

Efficiency Ratio

= $\frac{\text{Standard hours}}{\text{Actual hours}} \times 100$

Activity Ratio

= $\frac{\text{Standard hours}}{\text{Budgeted hours}} \times 100$

Calendar Ratio

= $\frac{\text{Available working days}}{\text{Budgeted working days}} \times 100$

Standard Capacity Usage ratio

= $\frac{\text{Budgeted hrs.}}{\text{Max. hrs. in budgeted period}} \times 100$

Actual Capacity Usage ratio

= $\frac{\text{Actual hrs worked}}{\text{Max. working hrs in a period}} \times 100$

Actual Usage of Budgeted Capacity ratio

= $\frac{\text{Actual working hours}}{\text{Budgeted hours}} \times 100$

Cost Sheet Specimen Format

	Particulars	Total Cost (Rs.)	Cost per Unit (Rs.)
1.	Direct Materials Consumed:		
	Opening Stock of Raw Material	XXX	
	Add: Additions/Purchases	XXX	
	Less: Closing Stock of Raw Material	(XXX)	
		XXX	XXX
2.	Direct employee (labour) cost	XXX	
3.	Direct Expenses	XXX	
4.	Prime Cost (1+2+3)	XXX	XXX
5.	Add: Works/Factory Overheads	XXX	
6.	Gross Works Cost (4+5)	XXX	
7.	Add: Opening Work In Process	XXX	
8.	Less: Closing Work in Process	(XXX)	
9.	Works/Factory Cost (6+7-8)	XXX	XXX
10.	Add: Quality Control Cost	XXX	
11.	Add: Research and Development Cost	XXX	
12.	Add: Administrative Overheads (relating to production activity)	XXX	
13.	Less: Credit for recoveries/Scrap/By-product/misc. income	(XXX)	
14.	Add: Packing Cost	XXX	
15.	Cost of Production (9+10+11+12-13+14)	XXX	XXX
16.	Add: Opening Stock of Finished Goods	XXX	
17.	Less: Closing Stock of Finished Goods	(XXX)	
18.	Cost of Goods Sold (15+16-17)	XXX	XXX
19.	Add: Administrative Overheads (General)	XXX	
20.	Add: Marketing Overheads:		
	Selling Overheads	XXX	
	Distribution Overheads	XXX	
21.	Cost of Sales (18+19+20)	XXX	XXX