

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

$$= (SQ \times SP) - (AQ \times AP)$$

Material Price Variance

$$= (SP - AP) \times AQ$$

Material Usage Variance

$$= (SQ - AQ) \times SP$$

Material Mix Variance

$$= (RSQ - AQ) \times SP$$

Material Yield Variance

$$= (SQ - RSQ) \times SP$$

Labour Cost Variance

$$= (SH \times SR) - (AH \times AR)$$

Labour Rate Variance

$$= (SR - AR) \times AH$$

Labour Efficiency Variance

$$= (SH - AH) \times SR$$

Labour Mix Variance

$$= (RSH - AH) \times SR$$

Labour Yield Variance

$$= (SH - RSH) \times SR$$

Idle Time Variance

$$= SR \times \text{Actual Idle Hours}$$

Variable OH Cost Variance

$$= \text{Std OH for actual prod.} - \text{Actual OH}$$

V OH Expenditure Variance

$$= (SR - AR) \times AH$$

V OH Efficiency Variance

$$= (SH - AH) \times SR$$

Fixed OH Cost Variance

$$= \text{Absorbed} - \text{Actual}$$

Fixed OH Expenditure Variance

$$= \text{Budgeted} - \text{Actual}$$

Fixed OH Volume Variance

$$= \text{Absorbed} - \text{Budgeted}$$

Fixed OH Efficiency Variance

$$= \text{Absorbed} - \text{Standard}$$

Fixed OH Capacity Variance

$$= \text{Standard} - \text{Budgeted}$$

Fixed OH Calendar Variance

$$= SR \times (\text{Actual working days} - \text{Std Working days})$$

Marginal Costing

Contribution

$$= \text{Sales} - \text{Variable cost}$$

(Or)

$$= \text{Fixed cost} + \text{profit}$$

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

Break-even point

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

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

Cash Break-even point in units

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

Required Sales

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

Margin of Safety

$$= \text{Actual Sales} - \text{BE point}$$

(or)

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

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

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