Cost Accounting

[According to B.Com Part-III-Delhi University]

This is the assignment that is Based on the cost Accounts
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COST SHEET

Cost Sheet format

+	Raw Material Consumed (Opening Stock+ Purchase+ Carriage Inward+ Freight on Purchase+ Purchase Expenses- Closing Stock- Sale of wastage material)	***
+	Direct Labour/Wages	***
+	Direct Expenses	***
+	Process and General Wages	***
+	Chargeable Expenses	***
+	Material Used in packing materials	***
	⟹ **Prime Cost**	***
Add	**Works/Factory Overheads:(Also Called Manufacturing Expenses)**	***
	Gross Works/Factory Overhead	***
Add	Opening Stock of Working Progress	***
Less	Closing Stock of Working Progress	***
	⟹ **Works Cost/Factory Cost**	***
Add	**Office and Administrative Overheads**	***
	⟹ **Cost of Production**	***
Add	Opening Stock of Finished Goods (After Valuation if Value not given)	***
Add	Shortage in the Finished Goods	***
Less	Closing Stock of Finished Goods (After Valuation if Value not Given)	***
	⟹ **Cost of Production of Goods Sold**	***
Add	**Selling and Distribution Overhead**	***
	⟹ **Cost of Sales(Total Cost)**	***
(B.F)	**Profit (Balancing Figure between the Sales and Cost of Sales)**	***
	⟹ **Sales**	***

Items that are comes under the Different Overheads

Works/Factory/Manufacturing Overhead:

- Fuel, Electric Power
- Repairs of Plant, Factory Items etc
- Haulage
- Lights and Water

- Lighting and Heating in Factory
- Rent of Factory
- Rates & Insurance
- Salaries in Factory
- Depreciation: Machinery, Plant etc.
- Unproductive Labour/Wages
- Motive Power
- Directory's, Manger's Fees for working in the Factory
- Loose tools written off
- Factory cleaning
- Water Supply
- Estimating
- Experimental
- General Expenses
- Consumable Stores
- Grease, Oil, Cotton waste etc.
- Insurance of Stock of Raw-Material
- Contribution to provident fund of factory employees
- Wages of fireman, foreman etc.

Office & Administrative Overhead:

- Depreciation:- Office Items, Premises etc.
- Printing & Stationery
- Office Rent, Rates, Taxes, Insurance etc.
- Office Lighting
- Indirect Expenses-Office
- Salaries: Manager's, Director's, Office Staff etc.
- Material used in office
- Bank Charges
- Legal Expenses
- Telephone Expenses
- Postage Telegram Expenses
- Other Expenses that are related to the Office and Administration

Selling and Distribution Overhead:

- Cost of Samples

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- Advertising
- Bad Debts
- Packing Expenses
- Material used in selling the product
- Commission of travelling agents
- Sales commission
- Distribution Expenses
- Vans, Taxi others up keeping charges
- Collection Charges
- Cost of preparing tenders
- Warehouse Charges
- Packing and Holding Charges
- Carriage Outwards
- Marketing Research, Marketing Promotion charges etc.
- Other that are related to the sales and Distribution

Reconciliation of Cost and Financial Accounts

Causes of Difference

1. Estimates and Actuals
    - Direct Materials
    - Direct Labours
    - Overheads
    - Depreciation
2. Valuation of Stocks
    - Raw Materials
    - Work in Progress
    - Financial Goods

There is Negative Relation between the Opening Stocks and the Profit Means to See the Following demonstration:

Opening Stock (If Increase↑) Profit (Decrease↓)

Opening Stock (If Decrease↓) Profit (Increase ↑)

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Whereas in the Closing Stock and the Profit there is the Positive Relationship Means to See the Following Demonstration:

Closing Stock (If Increase ↑) Profit (Increase ↑)

Closing Stock (If Decrease ↓) Profit (Decrease ↓)

3. Items included in Financial Accounts only.
    - Appropriation of Profit
        - Provision for Taxation
        - Transfer to Reserves, Goodwill
        - Preliminary Expenses written off
    - Purely Financial Charges
        - Losses on Sale of Investments, Assets
        - Penalties and Fines
        - Expenses on transfer of company's office
    - Purely Financial Incomes
        - Interest Received on Bank Deposit
        - Profit made on the sale of investments
        - Profit made on the sale of Fixed Assets
        - Transfer fees Received
4. Items included in Cost Accounts only
5. Abnormal Gains and Losses (Not Included By Cost Accounts)
   There are completely be excluded from cost accounts or may be taken to costing profit and loss account. In the financial accounts such gains and losses are taken to profit and loss accounts.

Performa of Reconciliation Statement

	Particulars	**+**	**-**
	Profit As per Cost Accountant **(It can be of Financial Accountant then all treatment are reverse or inverse)**	***	
1	Expenses Only Recorded by Financial Accountant		***
2	Incomes Only Recorded by Financial Accountant	***	
3	Expenses over-recorded by Cost Accountant Or Expenses under-recorded by Financial Accountant	***	
4	Expenses under-recorded by Cost Accountant Or Expenses over-recorded by financial Accountant		***

	Profit (Balancing Figure) if in (-) Loss (Balancing Figure) if in (+)	*** Loss	*** Profit
	Total	***	***

MATERIAL

Maximum & Minimum Level

1. **Maximum Level=**

Re-Order Level+ Re-Order Quantity- (Minimum Consumption× Minimum Re-Order Period)

2. **Minimum Level=**

Re-Order Level-(Average rate of consumption× Average time required to obtain fresh delivery)

3. **Re-Order Level**= Maximum Re-Order Period × Maximum Usage
4. **Economical-Order Quantity(EOQ)**=$\sqrt{\frac{2U\times P}{S}}$ or $\sqrt{\frac{2A\times O}{H}}$

   A=U=Annual Usage/Quantity Purchased
   O=P=Ordering Cost/Cost of Placing an order
   H=S=Holding Cost/Annual Cost of Storage of one unit
5. **Average Stock Level**

   Average Stock Level (First Method) = ½(Maximum Level+ Minimum Level)
   Average Stock Level (Second Method) = Minimum Level+1/2(Re-Ordering Quantity)

   Important Remembers:
   - ✓ Cost of one procurement mean ordering Cost.
   - ✓ EOQ(Economical Order Quantity) is also Re-order quantity
   - ✓ If the question Normal Consumption is given than take it instead of Average Rate of consumption

✓ Number or order place in a year= $\frac{Annual\ Usage\ (Units)}{EOQ(Economical\ order\ quantity}$

OUTGOING MATERIAL

Following are the important methods of Valuing Material Issue:-

1. **Specific Price Method: -** Under this method material are issued at the price at which they were originally purchased. It, therefore involves identification of each lot purchased. This method is generally used when the material have been purchased for a specific job.

2. First-In, First Our Method (FIFO): - Under this method it is assumed that the material first received are the first to be issued and these units issued are priced at the oldest cost price listed on the store ledger.
3. **Last-In, Last-Out Method (LIFO): -** The method is based on the assumption that last item of material purchased is the first to be issued. Thus in this method the price of the last consignment is used for pricing material issued until it is exhausted, then the nest consignment pricing is used and so on through successive consignments.
4. **Highest-In, First-Out Method (HIFO): -** The method is based on the assumption that stock of materials should be always valued at the lowest possible price. Materials purchased at the highest price are treated as being first issued irrespective of the date of purchase. (This method has not been adapted widely).
5. **Base Stock Method: -** The method is based on the contention that each enterprise maintains at all times a minimum quantity of material in its stock, the quantity is termed as base stock. The base stock is deemed to has been created out of the first lot purchased and therefore, it is always valued at this price and is carried forward as a fixed asset. Any quantity over and above the base stock is valued in accordance with any other appropriate method.

   The LIFO Method is best suitable for valuing stock other than the base stock

6. **Average Cost Method:-**
   I. **Simple Average Price Method: -** Under this method the price is calculated by dividing total of unit purchase prices of different lots in stock by the number of prices used in the calculation. Unit price of latest consignments are taken into account for this purpose. Every time where an issue is made, a new average is working out. Normally, it is presumed that material received first will be issued first and therefore, the rate of the material not in stock is ignored whiled calculating average rate.
   II. **Weighted Average Price Method:** - Under this method the issue price is calculated by dividing the value of materials in hand by the number of units in hand. The average price to be charged to issue will continue to be the same until a new purchase is made which will necessities computation of new average.

DIRECT LABOUR AND DIRECT EXPENSES

MEASUREMENT OF LABOUR TURNOVER

I. Separation Rate Method

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Labour Turnover Rate= $\frac{Number\ of\ Separation\ in\ a\ period}{Average\ number\ of\ workers\ in\ a\ period} \times 100$

II. **Replacement Method**

Labour Turnover Rate= $\frac{Number\ of\ Replacement\ in\ a\ period}{Average\ number\ of\ workers\ in\ a\ period} \times 100$

III. Flux Rate Method= $\frac{Number\ of\ Separation + Number\ of\ Replacement}{Average\ number\ of\ workers\ in\ a\ period} \times 100$

METHODS OF WAGE PAYMENT

1. **Time Wage System:- Numbers of hour worked × Hour Rate**
2. **Piece Wage System:- Numbers of Piece Completed + Piece Rate**
3. **Specific Incentive Plans**
   - **I. Halsey/ Halsey-Weir Premium Plan:**
     Total Earning= Time Taken × Rate + Time Saved × Rate × 50% or 30%
     50% in the Halsey Plan whereas 30% in the Halsey-Weir
   - **II. Rowan Plan:**
     Total Earning= Time Taken × Hourly Rate + Bonus
     Bonus= $\frac{Time\ Saved}{Standard\ Time} \times Time\ Taken \times Hourly\ Rate$

OVERHEADS-DISTRIBUTION

Distribution of factory overheads

S.No.	Overhead	Basis of apportionment
1.	Factory Rent Depreciation of factory Building(If Owned) Insurance of Building	According to the floor area occupied or capital value of the asset.
2.	Heating and Lighting	Number of light points Or floor area occupied.
3.	Depreciation and Insurance of Machinery	Value of Machinery
4.	Electric Power	Horse Power of machine Or Machine hours.
5.	Supervision	Number of workmen Or Amount of wages paid Or Floor area.
6.	Electric Light	Number of light points Or Floor area Or Hours used Or Watts if separate meters are available

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7.	Stores overhead	Value of Direct Materials
8.	Material Handling Charges	Weight of material of each department subject to any special factor affecting handling costs.

Apportionment of service department overheads

S.No.	Service Department Costs	Basis of Apportionment
1.	**Maintenance Department**	**Actual services utilized (if records are maintained or hours worked for each department.)**
2.	**Payroll or Time-Keeping Department**	**Direct labour hours, Machine hours, Number of employees.**
3.	**Personnel Department**	**Rate of labour turnover, Number of employees.**
4.	**Store-Keeping department**	**Number of requisitions, Quantity or value of material purchased.**
5.	**Purchased department**	**Number of purchase orders, Value of materials purchased.**
6.	**Welfare department**	**Number of employees.**
7.	**Internal transport service, overhead crane service.**	**Weight or value of the products, or weights and distance covered.**

Others that generally used

S.No.	Expenses	Apportionment
1.	**Motive Power**	**Electricity Kilowatts**
2.	**Lighting Power**	**Light Points**
3.	**Stores overhead**	**Direct Material**
4.	**Amenities to staff/workers**	**No. of Staff/works**
5.	**Repairs & Maintenance**	**Value of Assets**
6.	**General Overheads**	**Direct Wages**

Percentage Methods

FACTORY OVERHEAD RATE

1. **Direct Material Cost Method=**

   Factory Overhead Rate= $\frac{\text{Amount of factory overheads}}{\text{Cost of Direct Material Issued}} \times 100$

2. **Direct Labour Cost Method=**

   Factory Overhead Rate= $\frac{\text{Amount of factory overheads}}{\text{Cost of Direct Labour}} \times 100$

3. **Prime Cost Method=**

Factory Overhead Rate= $\frac{\text{Amount of factory overheads}}{\text{Prime Cost}} \times 100$

4. **Hourly Rate Methods**

Overhead Rate= $\frac{10+6+8}{2} tonnes \times 180 kms$

To find out machine hour rate classified the expenses into fixed and variable.

For Example:-

Calculation of Machine Hour Rate if Machine Working hours are 2000

Fixed/Standing Charges		
▪ Rent and Rates	12000	
▪ Insurance	3000	
▪ Consumable Stores	1200	
▪ Production Services	1080	
	17280	
Standing Charges per hour (17280/2000)=8.64		8.64
Machine Charges		
▪ Depreciation		5.76
▪ Power		2.00
▪ Repairs & Maintenance		4.32
		20.72

Operating or Service Costing

If we have to find out (Weight-Km)

For Example: - Following are the details regarding transportation of goods by a transport company:

S.No.	Quantity in Quintals	Distance in Kms.
1.	30	50
2.	15	100
3.	10	60
4.	20	70

If the total cost is Rs. 8000, Calculate cost per quintal-Km.

Solution:

1	30×50	1500
2	15×100	1500
3	10×60	600
4	20×70	1400
		5000

Quintals-Kms=5000

Total cost is Rs. 8000, therefore, cost per quintal-km, and comes to= $\frac{8000}{5000} = Rs.1.60$

Absolute tonne-Kms and Commercial tonne-Kms

Ex. 9.2 A truck starts with a load of 10 tonnes of goods from station P. It unloads 4 tonnes at station Q and rest of the goods at station R. It reaches back directly to station P after getting reloaded with 8 tonnes of goods at station R. The distances between P to Q. Q to R and then from R to P are 40 Kms. 60 Kms. And 80 Kms. Respectively. Compute "Absolute tone-kms" and "Commercial tone-kms".

Solution:

Absolute Tonne-Kms= 10 tonne × 40 Kms + 6 tonnes × 60 kms + 8 tonnes × 80 kms=1400 tonne-kms

Commercial Tonne-Kms= Average Load × Total Kms. Travelled

= $\frac{10+6+8}{2} tonnes \times 180 kms = 1440 tonne - kms$

Monthly Cost-Sheet

Fixed Cost	***	First Method to express cost sheet
Maintenance Charges	***	
Running Charges	***	
Total	***	
Fixed Charges	***	Second Method to express cost sheet
Variable Charges	***	
Total	***	

MARGINAL OR VARIABLE COSTING AND BREAK-EVEN ANALYSIS

What is marginal Cost?

If we simply say than it is a variable cost.

Marginal Cost=Direct Material Cost + Direct Labour Cost + Other Variable Cost

Or

Marginal Cost=Total Cost-Fixed Cost

Absorption Cost and Marginal Cost

Statement of cost by absorption costing System

Sales		***
Less:- Cost of Sales		
• Direct Material	***	
• Direct Labour	***	
• Factory Overhead (Fixed + Variable)	***	
• Administrative Overhead	***	
• Selling Overhead	***	***
(+)Profit/(-)Loss		***

Statement of cost by Marginal costing system

Sales		***
Less:- Marginal Cost of Sales		
• Direct Material	***	
• Direct Labour	***	
• Variable Factory overhead	***	
• Variable administrative overhead	***	
• Variable Selling overhead	***	
	***	***
Contribution		***
Less:-Fixed Cost (Factory, Administrative, Selling)		***
(+)Profit/(-)Loss		***

Now Important Formulae

Contribution

Contribution=Selling Price-Variable Cost **OR** Contribution=Fixed Cost + Profit

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Profit/Volume Ratio (P/V Ratio)

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} = \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \text{ OR } 1 - \frac{\text{Variable Cost}}{\text{Sales}}$$

$$\text{P/V Ratio} = \frac{\text{Change in Profit}}{\text{Chang in Sales}} = \frac{\text{Change Contribution}}{\text{Chang in Sales}}$$

Find out Variable Cost if P/V Ratio is Given

Variable Cost=Sales (1-P/V Ratio)

I.e. Variable Cost=1-0.4=0.6 means 60% of Sales

Or we can say Percentage of Variable Cost on Sales

For Example: - P/V Ratio= 40%

Than **Variable Cost=**100%-40%=60% i.e. 60% of Sales is variable Cost

Key Factor

Key factor is that factor which is the most important one for taking decisions about profitability of a product. It can be a Machine Capacity, Hours, and Labour etc.

Ex:- If machine capacity is limited, contribution per machine hour is to be considered for appropriate decision making. Thus, profitability can be measured by:

$\frac{\text{Contribution}}{\text{Machine Hour}}$ I.e. Profitability can be measured by $\frac{\text{Contribution}}{\text{Key factor}}$

Break-Even Analysis (Break-Even Points)

Break-Even Point (In Units) $= \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$

Break-Even Point (In Sales) $= \frac{\text{Fixed Cost}}{\text{Contribution per unit}} \times \text{Selling Price per unit}$

Or Break-Even Point (In Sales) $= \frac{\text{Fixed Cost}}{\text{Total Contribution}} \times \text{Total Sales}$

Or Break-Even Point (In Sales) =Break-Even Point (in units) × Selling Price per Unit

Or Break-Even Point (In Sales) $= \frac{\text{Profit}}{\text{P/V Ratio}}$

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Desired Profit

At Break-Even Point desired Profit is Zero. The formula for find out Units (Output) or Sales for a desired profit is given below:

$$\text{Output (Units) for a desired profit} = \frac{\text{Fixed Cost + Desired Profit}}{\text{Contribution Per Unit}}$$

$$\text{Sales for a desired profit} = \frac{\text{Fixed Cost + Desired Profit}}{\text{P/V Ratio}}$$

In case profit at a given level of sales is required to be calculated, the same can be done by the above formulas:

Profit = Sales × P/V Ratio-Fixed Cost **OR** Total Contribution-Fixed Cost

Margin of Safety

Margin of Safety = Total Sales – Break Even Sales } 1

$$\text{As a percentage} = \frac{\text{Margin of Safety}}{\text{Total Sales}} \times 100 \quad \} \ 2$$

(Note: First find out M.S by using above formula 1 & Put it on formula 2 to find out %)

Alternate Formula:

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

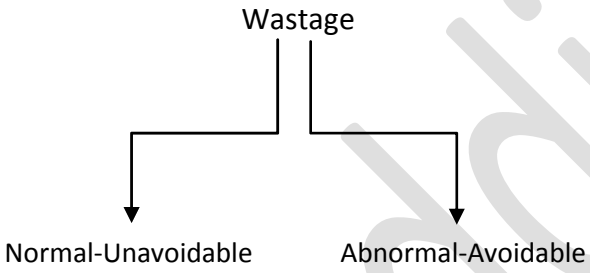
PROCESS COSTING

Performa of Process A/c

Particulars	Units	Rs.	Particulars	Units	Rs.
To Raw Material	***	***	By Normal Wastage	***	***
To Labour		***	By Normal Scrap	***	***
To Overhead		***	By Abnormal Loss	***	***
To Abnormal Effectiveness			By Transfer to Process II or F.G	***	***

Note:

- There can be only a one thing in the process account either Abnormal Loss or Effectiveness (Gain)
- If the Job or an item goes through many process the units and the amount will be transfer until the last process where we find out Finished goods units and the Amount of Finished goods and after dividing the Finished Goods Amount by Units we will be find out cost of finished goods per unit.
- If in the process account both Normal Scrap and Normal Wastage given than we take the units of both but the Amount will be consider only for that which realize value or saleable price is given.



Abnormal Gain (Effectiveness) A/c

Particulars	Units	Rs.	Particulars	Units	Rs.
To Normal Wastage	***	***	**To Process (Name) A/c**	***	***
To Costing P&L A/c		***			

Abnormal Loss (Wastage) A/c

Particulars	Units	Rs.	Particulars	Units	Rs.
To Process (Name) A/c	***	***	**By Sale Proceeds**	***	***
			By Costing P&L A/c		***

Normal Loss (Wastage) A/c

Particulars	Units	Rs.	Particulars	Units	Rs.
To Process (Name1) A/c	***	***	**By Sale Proceeds** • **Wastage Units** • **1** • **2**	*** *** ***	*** *** ***
To Process (Name2) A/c ….			**By Abnormal Effectiveness(If Yes)**		***

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CONTRACT COSTING

Performa of Contract Accounts

Particulars	Rs.	Particulars	Rs.
To Material	***	By Material at Site (Closing)	***
To Plant	***	By Plant (Closing)	
To Labour (Incurred + Due)	***	By Work in progress • Work certified • Work uncertified *By Contractee's A/c (If Contract is complete otherwise Work in Progreess will be shown in the contract a/c)	***
*To Depreciation (If Plant or machinery Opening and Closing value is not shown in the contract account)	***		
To Profit C/D (Disclosed Profit)	***		
	***		***
To Profit and Loss A/c (Note)	***	By Profit B/D (Disclosed Profit)	***
To Work in Progress (Reserve)	***		
	***		***

Note: (To find out Profit that shown in the profit and loss a/c)

Profit and Loss A/c	Work Certified Percentage %
Nil	0-25% (Less than 25%)
1/3 × Disclosed Profit × % Cash Received	25% - 50% (Less than 50%)
2/3 × Disclosed Profit × % Cash Received	50% or More than 50% (=>50%)
Contract Price – Estimated Cost	Near to completion

$$\text{Percentage of \% Cash Received} = \frac{\text{Cash Received}}{\text{Work certified}} \times 100$$

$$\text{Percentage of \% Work Certified} = \frac{\text{Work Certified}}{\text{Contract Price}} \times 100$$

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Performa of Contractee's Account

Particulars	Rs.	Particulars	Rs.
To Balance c/d	***	By Cash Received	***
	***		***
To Contract A/c (Contract A/c will be shown when contract has been completed otherwise leave at the above step where Balance c/d find out)	***	By Balance c/d	***
		By Cash (Balancing Figure)	***
	***		***

How the items shown in the balance sheet

Extracts from Balance Sheet

Liabilities	**Rs.**	**Assets**		**Rs.**
Labour (Due/Outstanding)	***	**Work in Progress**		
		(+) Work Certified	***	
		(+) Work Uncertified	***	
			***	
		(-) Work in Progress (Reserve)	***	
		(-) Cash Received	***	
			***	***
Wages (Due/Outstanding)	***	**Plant at Site (Closing)**		***
		Material at Site (Closing)		***
	***			***

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