STUDY MATERIAL FOR B.COM

COST ACCOUNTING - II

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COST ACCOUNTING-II

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UNIT - I

COST ACCOUNTING STANDARDS

Introduction to (CAS)

The Cost Accounting Standards (CAS) are a set of 19 specific rules and regulations (CAS 401-420) promulgated by the U.S. government. They are designed to ensure that government contractors account for their costs in a way that is uniform and consistent.

These standards are established by the Cost Accounting Standards Board (CASB), an independent board in the Office of Federal Procurement Policy. CAS does not determine if a cost is "allowable" (i.e., if the government will pay for it), but rather how that cost must be measured, assigned to accounting periods, and allocated to final cost objectives (like contracts). Cost Accounting Standards (CAS) are uniform rules and guidelines issued to bring consistency, accuracy, and transparency in cost measurement, cost allocation, and cost reporting.

Purpose of CAS

Uniformity & Consistency provides consistent methods for cost determination across periods and across companies. Transparency & Accuracy Ensures reliable and fair cost measurement, allocation, and absorption. Better Decision Making Helps managers make informed decisions based on standardized cost data. Regulatory Compliance Supports statutory cost audit and cost compliance reports. Improves Cost Control & Efficiency Standard costing methods help identify inefficiencies and cost overruns. Facilitates Cost Audit & Comparability Auditors can verify costs easily when standards are uniform.

Advantages of CAS

1. Standardization of Costing Practices

   Eliminates diverse and arbitrary costing methods.

2. Enhanced Credibility of Cost Statements

   Cost reports become more reliable for stakeholders.

3. Better Internal Control

   Helps management monitor costs at each functional level.

4. Facilitates Government Regulations

   Useful in fixing prices, subsidies, and tariffs.

5. Improves Corporate Governance

   Ensures ethical and systematic costing practices.

6. Simplifies Cost Audit

CAS-compliant data reduces auditor effort and mistakes.

7. Supports Industry Benchmarking

   Enables inter-firm and intra-firm comparisons.

Difference Between CAS & FAR Regulations

Basis	CAS (Cost Accounting Standards)	FAR (Financial Accounting & Reporting) Regulations
Purpose	Standardize cost measurement	Regulate preparation and presentation of financial statements
Focus	Cost determination, allocation, and control	Recording financial transactions and reporting financial performance
Issued By	ICAI – Cost Accountants (CMA)	ICAI – Chartered Accountants (CA)
Usage	Cost audit, cost control, pricing decisions	Financial audit, investor reporting, taxation
Covers	Material cost, labour cost, overheads, capacity, etc.	Cash flow, balance sheet, profit & loss, disclosure norms
Nature	Internal, managerial	External, statutory
Orientation	Future & present oriented	Past oriented

Degrees of CAS Coverage

The coverage of Cost Accounting Standards (CAS) varies depending on the nature, size, and regulatory requirements of an organization. Different degrees of CAS coverage ensure that cost information is captured accurately at various levels of operation while maintaining uniformity and consistency. CAS may be applied at the enterprise level, unit level, product or service level, and process or activity level, based on managerial and statutory needs.

At the enterprise level, Cost Accounting Standards apply to the organization as a whole. This level of coverage ensures uniform cost accounting policies and practices across all departments and units of the enterprise. It helps management evaluate overall cost efficiency, profitability, and compliance with regulatory requirements.

At the unit level, CAS coverage is limited to a specific manufacturing unit or operational division. This level is particularly useful for organizations with multiple plants or units, as it enables

comparison of cost performance between units and supports effective cost control and managerial decision-making.

At the product or service level, Cost Accounting Standards are applied to individual products or services. This level of coverage helps in accurate determination of product or service cost, fixation of prices, profitability analysis, and identification of cost reduction opportunities. It is especially important in industries producing multiple products or offering diversified services.

At the process or activity level, CAS coverage focuses on specific processes, operations, or activities within the organization. This level helps in detailed cost analysis, process efficiency evaluation, and activity-based cost control. It supports management in improving operational efficiency and optimizing resource utilization.

Cost Accounting Standards

Cost Accounting Standards (CAS) are a set of authoritative guidelines issued to bring uniformity, consistency, and transparency in cost accounting practices. In India, these standards are prescribed by the Institute of Cost Accountants of India (ICMAI). Cost Accounting Standards provide principles for the measurement, assignment, and disclosure of various cost elements such as material cost, employee cost, overheads, utilities, packing materials, and direct expenses. The adoption of CAS ensures accurate cost determination, facilitates comparability of cost data, improves cost control, and supports statutory requirements such as cost audit, price fixation, and regulatory reporting.

Responsibility Accounting

Responsibility Accounting is a system of accounting in which costs and revenues are classified and reported according to areas of responsibility within an organization. Under this system, each responsibility centre is managed by a responsible executive who is accountable for the performance of that centre. Responsibility centres may be classified as cost centres, revenue centres, profit centres, and investment centres depending on the nature and extent of authority delegated. Responsibility Accounting promotes decentralization, managerial accountability, effective control, and performance evaluation by linking financial results with managerial responsibility.

Divisional Performance Measurement

Divisional Performance Measurement refers to the evaluation of the efficiency and profitability of individual divisions or segments of an organization. It is an important aspect of Responsibility Accounting and helps management assess how effectively divisional managers utilize resources to achieve organizational objectives. Common methods used for measuring divisional performance include Return on Investment (ROI), Residual Income (RI), divisional profit, contribution margin, and Economic Value Added (EVA). Divisional performance measurement aids in decision-making, resource allocation, managerial motivation, and overall organizational growth.

UNIT - II

JOB COSTING, BATCH COSTING AND CONTRACT COSTING

JOB COSTING

Job Costing is a method of costing in which the cost of each specific job or order is ascertained separately. Each job is treated as a distinct cost unit, and all costs relating to materials, labour, and overheads are collected and charged to that job. This method is suitable for industries where products or services are produced according to customer specifications.

The process of accumulating costs (direct materials, direct labor, and allocated overhead) for each specific job or contract to determine its total cost and profitability, often using a Job Cost Sheet.

Features

Job Costing is a method of costing in which each job or order is treated as a separate and identifiable cost unit. Under this method, costs are collected and accumulated separately for each job with the help of a job number. All direct materials and direct labour are charged directly to the specific job, while overheads are apportioned on a suitable basis. Job costing is generally used where work is carried out according to customer specifications and each job differs from another. It enables accurate determination of the cost and profit of each job, facilitates effective cost control, and helps management in fixing prices and comparing estimated costs with actual costs.

BATCH COSTING

Batch Costing is a method of costing in which the cost of a group of identical products produced together, known as a batch, is calculated as a single cost unit. The total cost of the batch is divided by the number of units in the batch to determine the cost per unit. This method is commonly used where production is carried out in batches.

Definition: Batch costing is a method where costs are accumulated for a specific group (batch) of identical or similar items produced together, rather than for individual units or continuous flow.

Features

Batch Costing is a method of costing in which a group of identical products produced together, known as a batch, is treated as a single cost unit. Under this method, each batch is assigned a batch number for identification, and all costs relating to materials, labour, and overheads are accumulated for the entire batch. The total cost of the batch is then divided by the number of units in the batch to determine the cost per unit. Batch costing is generally used in industries where production is carried out in batches under similar conditions. This method facilitates economies of scale, effective cost control, efficient production planning, and accurate determination of unit cost.

Contract Costing

Contract Costing is a method of costing used to ascertain the cost of large-scale construction and engineering projects carried out over a long period of time. Under this method, each contract is treated as a separate and distinct cost unit. All costs relating to a particular contract, such as materials, labour, direct expenses, and overheads, are accumulated separately in a contract account. Contract costing is mainly adopted by construction companies engaged in projects like buildings, roads, bridges, dams, shipbuilding, and other infrastructure works.

One of the important features of contract costing is that the work is generally carried out at the contract site, and most expenses are incurred at the site itself. Contracts are usually of long duration and involve large amounts of money. Payments are often received in instalments based on the progress of work, which is certified by an architect or engineer. Materials may be purchased specifically for a contract and unused materials at the site are valued at the end of the accounting period.

In contract costing, profits are not recognized in full until the contract is completed. When a contract is partly completed, only a portion of the notional profit is transferred to the Profit and Loss Account based on the stage of completion. The balance profit is kept as a reserve to meet future uncertainties. Work-in-progress includes the value of work certified and uncertified and is shown as an asset in the Balance Sheet.

Contract costing helps management in effective cost control, proper valuation of work-in-progress, and accurate determination of contract profitability. It also assists in planning, budgeting, and monitoring the financial performance of long-term contracts, thereby ensuring

Comparison: Cost-Plus vs. Fixed-Price Contracts

Feature	Cost-Plus Contract	Fixed-Price Contract
Price Certainty	Low; final cost is unknown until completion.	High; total price is agreed upon upfront.
Risk (Contractor)	Low; costs are covered, ensuring a profit.	High; contractor absorbs any cost overruns.
Risk (Client/Owner)	High; faces the risk of cost overruns.	Low; cost is known in advance.
Scope Definition	Suitable for projects with uncertain or evolving scopes.	Requires a clearly defined and stable scope.
Incentive for Efficiency	Lower, unless specific incentive clauses are included.	High; contractor profits from efficiency/cost savings.

Administration	Requires extensive cost tracking and client oversight.	Requires less day-to-day oversight of costs.

Preparation of Contract Account (General Format)

In the contractor's books, a separate Contract Account is prepared for each contract to ascertain profit or loss. It operates like a Job Account.

Particulars	Amount	Particulars	Amount
To Materials issued/purchased	XXX	By Materials at site (closing)	XXX
To Wages paid	XXX	By Plant at site (closing)	XXX
To Direct Expenses	XXX	By Plant returned to stores	XXX
To Indirect Expenses (apportioned)	XXX	By Bank A/c (Material sold, if any)	XXX
To Plant issued	XXX	By Profit & Loss A/c (Loss on sale, if any)	XXX
To Notional Profit c/d (if profit)	XXX	By Work-in-Progress A/c (Cost of Work Uncertified)	XXX
Total	**XXX**	**Total**	**XXX**
To Profit & Loss A/c (Profit transferred)	XXX	By Notional Profit b/d	XXX
To Work in Progress A/c (Reserve)	XXX		
Total	**XXX**	**Total**	**XXX**

- **Work Certified:** In a cost-plus contract, the value of work certified often directly corresponds to the total cost incurred plus the agreed profit margin to date, as per the contract terms.
- **Profit Transfer:** The full profit on a cost-plus contract is generally recognized as it is earned and certified, given the guaranteed nature of the profit, unlike standard fixed-price contracts where profit recognition is typically based on completion percentage rules for prudence. The amount credited to the Profit & Loss Account is the agreed-upon profit on the total cost incurred and reimbursed.

PROBLEM

Materials:	Amt
Direct purchases	100000
Issued from stores	20000
Wage for labour	90000
Share of overhead	4000
Materials lost by fire	1000
Wages accrued and due	10000
Direct expenses accrued and due	1000
General plant in use (written down value)	200000
Depreciation there on	20000
Direct expenses	7000
Materials on hand	2000
Salvage value of materials lost	300
Value of work certified	320000
Cost of word uncertified	9000

SOLUTION: Contract a\c

Particulars	Rs	Particulars	Rs
To materials purchases	100000	By P\La\c	
To material stores	20000	Material lost 1000	
To wages	90000	Less:salvage300	700
To wages due	10000	By plant 200000	
To share of overhead	4000	Less: dep 20000	180000
To direct exp. due	1000	By material on hand	2000
To plant	200000	By salvage value	300
To direct expenses	7000		
To notional profit	80000	By WIP:	
		Work certified Uncertified	320000
			9000
	512000	By notional profit	512000
To profit& loss a\c 80000x2\3x90\100	48000		80000
To reserve(BF)	32000		
	80000		80000

Balance sheet

Liabilities	Rs	Assets	Rs
Wages due	32000	By work in progress:	
		Certified	320000
Direct expenses due	7000	Uncertified	9000
Profit \loss a\c			311000
	48000	Less: reserve	32000
			279000
		Less: cash received	9000
			270000
		By plant 200000	
		Less: dep 20000	180000
			90000
		By p\l a\c	
		Material lost 1000	
		Less: salvage 300	700
		Salvage value of mat.	300
			2000
	87000	Material on hand	87000

Problem

The following particulars relate to a contract:	rs.
Material issued	42000
Wages	30000
Direct expenses	25000
Materials on hand at end	2000
Work certified	160000
Work uncertified	15000
Contract price	300000
Cash received	120000
Prepare contract account.	160000

Solution **Contract account**

Particulars	Amount	Particulars	amount
To material issued	42000	By work–in–progress:	
To wages	30000	Work certified Add:	160000
To direct expenses	25000	uncertified	15000
To notional profit	70000		2000
		By materials on hand	
	177000		177000
	35000		70000
To profit\loss a\c 70000x2\3x120000\160000	35000	By notional profit	
To reserve(BF)	70000		70000

UNIT - III

PROCESS COSTING

Meaning of Process Costing

Process costing is a method of costing used to ascertain the cost of production where a product passes through different continuous stages or processes before completion. In this method, the output of one process becomes the input or raw material of the next process. Each process incurs its own expenses such as material cost, labour cost, and overheads. Process costing helps in determining the total cost of production and cost per unit at each stage of production, and it is widely used in industries producing homogeneous products.

Difference between Process Costing and Job Costing

Job costing is a method in which costs are computed separately for each job or order, whereas in process costing, costs are computed for each process for a given period. Job costing is undertaken against specific customer orders, while process costing involves continuous production not based on specific orders. In job costing, each job is separate and independent in nature, but in process costing, production is continuous and products are homogeneous. Costs in job costing are ascertained only after the completion of the job, whereas in process costing, costs are determined at the end of each process. Cost control is difficult in job costing due to variation in products, but it is easier in process costing because production is standardized.

Procedure for Preparing Process Account

In process costing, a separate process account is prepared for each process in T-account format, showing debit and credit sides. All expenses such as direct material, direct labour, direct expenses, and factory overheads relating to a process are debited to the respective process account. Opening stock of each process is also debited. The completed output transferred to the next process and closing stock of the process are credited. Factory overheads common to all processes are apportioned on a suitable predetermined basis. The output of one process becomes the input of the next process account. Normal process loss is not shown separately in the process account and is absorbed into the cost. If actual loss exceeds normal loss, it is treated as abnormal loss, and if actual loss is less than normal loss, it results in abnormal gain.

Treatment of Process Losses and Gains

Process losses are of two types, namely normal loss and abnormal loss. Normal loss is an unavoidable and uncontrollable loss inherent in the manufacturing process. It arises due to factors such as evaporation, shrinkage, or unavoidable wastage and may have scrap value. Normal loss is absorbed into the cost of good units. Abnormal loss arises due to unexpected and abnormal reasons such as negligence, accidents, fire, theft, or machine breakdown. Abnormal loss is avoidable and is transferred to the Costing Profit and Loss Account.

The value of abnormal loss is calculated as follows:

Value of Abnormal Loss = Cost of production per unit × Abnormal loss units

Abnormal Gain (Process Gain)

Abnormal gain, also called process gain, arises when actual loss is less than the expected normal loss. This gain occurs due to better efficiency, improved supervision, or reduced wastage. Abnormal gain is credited to the Costing Profit and Loss Account after adjusting scrap value of normal loss.

The value of abnormal gain is calculated as:

Value of Abnormal Gain = Cost per unit × Number of abnormal gain units

Problem 1

Prepare process cost accounts from the following data

	Process X	Process Y	Process Z
Direct Material (Rs.)	41,500	32,400	24,000,
Direct wages	20,700	27,400	24,100
Factory overhead	14,300	17,700	12,300
Number of units produced	25,000	30,000	32,000
Stockason1stAugust2011(Units) (from Proceeding process	----	6,000	3,000
Stockon31stAugust2011 (units)	----	4,000	6,000

Assumethattheincreaseofoutputinsubsequentprocessisduetoadditional material

Solution

Process X account

Particulars	Rs	Particulars	Rs
To Direct Material To Direct swages To Factory Overhead	41,500 29,700 14,300	By Process Y A/c	85,500
	85,500		85,500

Process Y Account

Particulars	Rs	Particulars	Rs
To Opening stock of process X(6000x3.42)	20,520	By Closing stock (of ProcessX) (4000x 3.42)	13,680
To Process X A/c	85,500		
To Direct Material	32,400	By Process Z A/c(Transfer@ Rs.5.66perunits30,000Units	169,840
To Direct wages	27,400		
To Factory Overhead	17,700		
	183,520		183,520

Process Z Account

Particulars	Rs	Particulars	Rs
To Opening stock (of Process Y)(3000x5.66)	16,980	By Closing Stock (of process Y) (5000x 5.66)	28,300
To Process Y A/c	169,840	(Transfer@Rs.6.86perunit)	2,19,520
To Direct material	24,600		
To Direct wages	24,100		
To Factory overhead	12,300		
	2,47,820		2,47,820

Problem

W.D&Co.Ltdproducesaproductwiththehelpofthreeprocesses.Thefollowingarethe information available in the cost records of the company.

	Process A	Process B	Process C
Material(Rs.) Wages(Rs)	5,500	1,200	3000
Normal loss as percentage of input Value	4,500	5000	5,500
of scrap per Kgs (Rs)	10%	20%	15%
Output(Kgm)	Nil 650	4	5
		600	450

In the process A, 800 kgm are introduced to Rs.10 per Kgms. Factory overhead absorbed is 80 % on direct wages.

Prepare process account, abnormal loss account and abnormal gain account.

Solution

Process A Account

Particulars	No of units	Rs.	Particulars	No. of units	Rs.
To Units introduced	800	8,000	By Normal loss	80	--
To Material		5,500	By Abnormal loss @Rs.20	70	2,100
To wages		4,500	By Process BA/c		
To Factory overhead (80%of wages)		3,600	(Transfer)@ Rs.30	650	19,500
	800	21,600		800	21,600

Process B Account

Particulars	No of units	Rs.	Particulars	No. of units	Rs.
To Process A	650	19,500	By Normal loss	130	520
To Material		5,220	By Process C A/c	400	36,000
To wages		5,000	(Transfer)@Rs.60		
To Factory Overhead (80% of wages)		4,000			
To Abnormal gain@ Rs.60	80	4,800			
	730	36,520		730	36,520

Process C Account

Particulars	No of units	Rs.	Particulars	No. of units	Rs.
To Process C A/c	600	36,000	By Normal loss	90	450
To material		3,000	By Abnormal loss @	60	5,700
To Wages		5,500	Rs.95		
To Factory Overhead		4,400	By Finished Goods	450	42,750
(80% of wages)			A/c@Rs.95		
	600	48,900		600	48,900

Abnormal loss Acc

Particulars	No of units	Rs.	Particulars	No. of units	Rs.
To Process A A/c To Process C A/c	70 60	2,100 5,700	By Sale of scrap in process A a/c By sale of scrap in Process C A/c By Closing P&L A/c	70 60 --	-- 300 7,500
	130	7,800			7,800

Abnormal Gain A/c

Particulars	No of units	Rs.	Particulars	No. of units	Rs.
To Sale of scrap(due toNormalloss@Rs.4 To Closing P&L A/c	80	220 4,480	By Process B A/c	80	4,800
	80	4,800		80	4,800

Workings:

$$\text{Cost per Unit in process A A/c} = \frac{21,600}{600+70} = \text{Rs.}30$$

$$\text{Cost per unit in process B A/c} = \frac{(19,500+3220+500+400+520)}{650+130}$$

$$= \frac{31,720-520}{520} = \frac{31,200}{520}$$

= Rs. 60

Further Processing of By-Product

Companies may sometimes produce the by–product apart from the main product and the last process. The by–product required for the processing before selling into customer. The value of by-product is credited in the final process account by further process account. Further processing accounting is debited with the cost processing the by-product. This accounts closed by transferring to finished stock account.

Joint Product

The processing of one raw material combination of raw material, make two or more finished products of equal important. These products are called Joint Product. For Example, in the oil All expenses are debited in the process account. The opening stock in each process is also debited.

Treatment of Process Losses and Gain

Process Losses: Process losses are two types. They are I) Normal Loss II)Abnormal loss Normal Loss Normal loss is a loss which arises due to unavoidable and uncontrollable situation. It should not be prevented. It forms part of the manufacturing process. Normal loss may be in the form of Scrap, Normal wastage and Normal spoilage

Abnormal loss

Abnormal loss is a loss which arises due to abnormal and unexpected situation. This loss can be controlled and avoided. Abnormal loss may be due to abnormal wastage, abnormal spoilage, negligence, accident, fire, theft etc.,

$$\text{Value of abnormal loss} = \text{Cost of production (excluding the realization of Normal loss) X } \frac{\text{Abnormal loss units}}{\text{Number of units produced (including the Abnormal Loss unit and including the normal loss units if any,}}$$

From the input units

Process gain or abnormal gain

Process gain is otherwise called abnormal gain. Abnormal gain arises when the actual normal loss is less than the standard or expected normal loss. For example if the input of material is 1000 units, the abnormal loss is 100 units and the output is 950 units, then the abnormal gain is 50units

Value of abnormal gain = Cost of production (excluding the realization of Normal units)

X Number of Abnormal gain units

Number of units produced

PROBLEM:

Calculation of indirect expenses:

Indirect exp on the basis	I	II	III
Of direct wages	30000	23000	17000
	30	:23	:17
Indirect exp =	42000x30\70	42000x23\70	42000x17\70
	18000	13800	10200

Cost per unit = total cost\ number of units

SOLUTION: Process a\c-I

Particulars	CPU	Amount	Particulars	CPU	Amount
To materials	32	32000	By process a\c II	97	97000
To direct wages	30	30000			
To direct expenses	17	17000			
To indirect expenses	18	18000			
	97	97000		_____	_____
				97	97000

Process a\c- II

Particulars	CPU	Amount	Particulars	CPU	Amount
To process-I a\c	97	97000	By process a\c III	168.8	168800
To material	21	21000			
To direct wages	23	23000			
Todirect ex.	14	14000			
To indirect ex.	13.8	13800			
	168.8	168800		168.8	168800

Process a\c III

Particulars	CPU	Amount	Particulars	CPU	amount
To process II a\c	168.80	1,68,800	By finished stock a\c (output transferred)	225	225000
To material	19.00	19,000			
To direct wages	17.00	17,000			
To direct ex.	10.00	10,000			
To indirect ex.	10.20	10,200			
	225.00	2,25,000		225	225000

Problem:

Calculate the cost of output and abnormal gain or loss
Units introduced 500
Direct material 1500
Direct wages 875
Direct expenses 500
Normal loss5%
Scrap value of Rs 1 \ unit
normal loss Output in units 450

Solution: **Output in process a\c**

Particulars	Units	Amount	Particulars	Units	Amount
To direct material	500	1500	By normal loss (500 x 5\100)	25	25
To direct wages		875			
To direct expenses		500	By output 27000\450=6	450	2700
			By abnormal loss	25	150 (25x6)
	500	2875		500	2875

Calculation of cost per unit of abnormal loss or gain:

$$= \frac{\text{cost of process – normal loss}}{\text{Input – normal loss in units}}$$

$$= \frac{2875-25}{500-25}$$

$$= \frac{2850}{475} = 6$$

Problem

Ina process A 100 units of raw materials were introduced at rs.10per unit. The other expenditure incurred by the process was rs.602.of the units introduced 10 % are normally lost in the course of manufacture and they possess a scrap value of rs. 3 each. The output of process A was only 75 units. Prepare process a\c and find abnormal loss.

Solution

Abnormal loss=input– normal loss–output

= 100–10–75=15units

Cost per unit =total cost–scrap value

=1,602-45

Process-A account

Particulars	Units	Amount	Particulars	Units	Amount
To raw material	100	1000	By normal loss 100 x 10 \ 100(10@3)	10	30
To other expenses		602	By output transferred	75	1310
			By abnormal loss@ 17.469	15	262
	100	1602		100	1602

Abnormal loss account

Particulars	Units	Amount	Particulars	Units	Amount
To process A	15	262	By cash (scrap value)	15	45
			By costing P\L a\c		217
	15	262		15	262

UNIT - IV

OPERATINGCOSTING

Meaning:

Operating costing is a method of ascertaining cost of providing or operating a service. In this method, cost is determined in the same way as in the unit costing method or output costing method by preparing a cost sheet. Operating costing method is applied in undertakings which provide service or fall in the category of public utilities. The method is also called service costing

Operating costs are associated with the maintenance and administration of a business on a day-to-day basis. Operating costs include direct costs of goods sold (COGS) and other operating expenses—often called selling, general, and administrative (SG&A)—which include rent, payroll, and other overhead costs, as well as raw materials and maintenance expenses. Operating costs exclude non-operating expenses related to financing, such as interest, investments, or foreign currency translation.

Definition:

According to CIMA, London, "Operating Costing is that form of operation costing which applies where standardized services are rendered either by an undertaking or by a service cost centre within an undertaking."

The operating cost is deducted from revenue to arrive at operating income and is reflected on a company's income statement.

The following formula and steps can be used to calculate the operating cost of a business. You will find the information needed from the firm's income statement that is used to report the financial performance for the accounting period.

Operating cost=Cost of goods sold+ Operating expenses

1. From a company's income statement, take the total cost of goods sold, or COGS, which can also be called cost of sales.
2. Find total operating expenses, which should be further down the income statement.
3. Add total operating expenses and COGS to arrive at the total operating costs for the period.

Operating Cost Sheet It is said that, "a well-designed cost sheet is the heart of transport costing". For collecting and controlling costs, costs are classified and accumulated under the three heads, suitably analysed and presented periodically in the form of an operating cost sheet.

A specimen of operating cost sheet is given as follows:

Roadways Transport Co., Ltd.

Operating Cost Sheet

Vehicle No.	**No. of Trips :**	**Period :**
Registration No.	**Kms. run :**	**Capacity :**
Route No.	**Total weight carried :**	**No. of Cost units.**
Cost :	**Total hours operated :**	
Estimated Life :		

Particulars		Total	Per Unit
A) Fixed Costs :			
Garage Rent			
Licences and Taxes			
Insurance			
Interest on Capital			
Supervision Charges			
Establishment and General Charges	(+)		
Sub-Total (A)		.....	.....
B) Maintenance Costs :			
Tyres and Tubes			
Repairs and Maintenance			
Spare Parts and Accessories			
Overhauling			
Painting	(+)		
Sub-Total (B)		.....	.....
C) Operating and Running Costs :			
Depreciation			
Petrol and Diesel			
Oil and Grease			
Transit Insurance			
Wages of Drivers, Cleaners and Conductors	(+)		
Sub-Total (C)	(+)	.....	.....
Grand Total (A + B + C)		.....	.....
D) Ton Km/Passenger Km. run			
E) Cost per ton Km/passenger Km.			

Operating Cost Sheet

Transport Costing

Transport Costing refers to the determination of the cost per unit of services rendered by a vehicle. Its include Water, Air, Road and Railways. Motor transport includes Buses, Taxies, Private Cars, Carriers and Lorries etc. E.g. The cost/passenger/km or cost/ton/km.

PROBLEM:

From the following data relating to vehicle "X" calculate the cost per running kilo metre and ton kilo metre

Kilo meters run (annual)	15000
Tonnes per km(average)	6
Cost of vehicle	25000
Road license(annual)	750
Insurance(annual)	700
Garage rent(annual)	900
Supervision and salaries	2400
Drivers wages per hour	3
Kilometer run per hour	20
Cost of fuel per litre	3
Repairs and maintenance per km	1.75
Tyre allocation per km	90paise
Estimate life of vehicle	100000kms

Charge interest at5%p.a. on cost of vehicle. The vehicle runs 20 kms per hour on an average

SOLUTION:

Operating cost statement

Total ton kilo meter =15000x6=90000

Cost per ton kilo metre=54000\900000=0.60

Standing charges:(fixed) Road license Insurance Garage rent Supervision Interest on cost (5\100x25000)	750 700 900 2400 1250 6000	0.050 0.047 0.060 0.160 0.083 0.400
Maintenance expenses: Repairs Tyre allocation	26250 13500	1.75 0.90
C. operating charges: Drivers wages per hour 15000\20x3 Fuel 15000\20x3 Depreciation25000\100000x15000 (total cost\ estimated life) Total cost per running kilo metres Cost per mile of bus	39750 2250 2250 3750 54000	2.65 0.15 0.25 3.60 10.43

Power House Costing – Cost Sheet Specimens and Illustration

Power House Costing is concerned with the ascertainment of cost per unit of steam or electricity produced. The costs of producing steam used in power house for the generation of electricity is also included in the power house costs.

Specimen No. 1

Cost Sheet

Period: Output.....

Particulars	Total Rs. P.	Per kwt. Rs. P.
(A) Fixed Expenses:		
Plant Supervision		
Administration Overheads		
Depreciation		
(B) Variable Expenses:		
Operating Labour		
Repairs and Maintenance		
Coal Consumed		
Lubricants, Spares and Stores		

Illustration:

From the following data pertaining to the year 2002-03, prepare a Cost Sheet showing the cost of electricity generated per unit of kwh. by Chambal Thermal Power Station –Total units generated 20,00,000 kwh.

	Rs.
Operating Labour	50,000
Repairs and Maintenance	50,000
Lubricants, Spares and Stores	40,000
Plant supervision	30,000
Administrative Overheads	20,000

Coal consumed per kwh. for the year is 2.5 kgs. @ Re. 0.02 per kg.
Depreciation charge @ 5% on capital cost of Rs. 2,00,000

Cost Sheet

Period: Year 2002-03 Output: 20,00,000 Kwh.

Particulars	Total Rs. P.	Per kwh. Rs. P.
Fixed Expenses:		
Plant Supervision	30,000	
Administrative Overheads	20,000	
Depreciation (5% on Rs. 2,00,000)	10,000	
	60,000	0.030
Variable Expenses:		
Coal Consumed	1,00,000	0.050
Operating Labour	50,000	0.025
Repairs and Maintenance	50,000	0.025
Lubricants, Spares and Stores.	40,000	0.020
	3,00,000	0.150

Note: Cost of coal consumed has been calculated as follows:
= 20,00,000 kwh. × 2.5 kgs × Re.0.02 = Rs. 1,00,000

Hospital Costing – Departments, Illustration and Cost Sheet

A hospital is engaged in providing various medical services to the patients and hospital costing is applied to determine the cost of these services.

Illustration:

Dr. Sanjeev Sharma and Dr. (Mrs.) Sharma hire a building to run a nursing home. The building has 8,000 square feet of area consisting of 40 rooms of 150 square feet each. The rest is general area. The monthly rent has been agreed at Rs.10 per square feet. Lighting and heating expenses come to Rs.10,000 per month.

The staff would consist of the following –

i. 5 doctors @ Rs.20,000 p.m.

ii. 10 nurses @ Rs.8,000 p.m.

iii. 6 general helpers @ Rs.2,500 p.m.

It is expected that 90% of the rooms will always remain occupied. If a margin of 25% on total takings is desired, ascertain the rent to be charged per day assuming a month of 30 days.

Solution:

Cost Sheet

(Period: One month)

		Rs.
Staff salaries:		
(*i*) 5 Doctors @ Rs. 20,000 per month each	= Rs.1,00,000	
(*ii*) 10 Nurses @ Rs. 8,000 per month	= Rs. 80,000	
(*iii*) 6 General helpers @ Rs. 2,500 p.m.	= Rs. 15,000	1,95,000
Rent of Building @ Rs. 10 per square feet for 8,000 sq.ft.		80,000
Lighting and heating expenses		10,000
Total Cost		2,85,000
Add Margin (Profit) @ 25% on total takings $\left(\frac{2,85,000 \times 25}{100 - 25}\right)$		95,000
Total Takings (or Rent chargeable)		3,80,000

Calculation of Room-days:

Room days = No. of rooms × Percentage occupied × No. of days in a month.
= 40 Rooms × 90% × 30 days = 1,080 Room-days

$$\text{Rent to be charged per day} = \frac{\text{Total Takings}}{\text{Total Room-days}} = \frac{\text{Rs. } 3,80,000}{1,080} = \text{Rs.}351.85$$

UNIT - V

STANDARD COSTING AND VARIANCE ANALYSIS

Standard Cost

Standard Cost as defined by the Institute of Cost and Management Accountant, London" is the Predetermined Cost based on technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions." Standard Costing

Chartered Institute of Management Accountants England defines Standard Costing as "the Preparation and use of standard costs, their comparison with actual costs and the analysis of variances to their causes and points of incidence."

Definition of Standard Costing

A cost control technique where pre-determined costs (standards) for materials, labor, and overhead are set and compared to actual costs to measure performance and analyze variances (deviations) for corrective action.

Objectives

- Cost Control & Reduction: Identify inefficiencies and waste.
- Performance Measurement: Evaluate efficiency of departments/employees.
- Planning & Budgeting: Aid in setting future budgets and pricing.
- Decision Making: Inform management on operational improvements.

Advantages of Standard Costing

The following are the important advantages of standard costing :

(1) It guides the management to evaluate the production performance.

(2) It helps the management in fixing standards.

(3) Standard costing is useful in formulating production planning and price policies.

(4) It guides as a measuring rod for determination of variances.

(5) It facilitates eliminating inefficiencies by taking corrective measures.

(6) Performance Evaluation: Acts as a benchmark (yardstick) for efficiency.

(7)Cost Reduction: Facilitates identifying and eliminating waste.

(8) Simplified Costing: Offers an alternative to historical costing.

(9) Motivation: Encourages managers to achieve targets (if standards are practical).

Limitations of Standard Costing

Besides all the benefits derived from this system, it has a number of limitations which are given below:

(1) Standard costing is expensive and a small concern may not meet the cost.

(2) Due to lack of technical aspects, it is difficult to establish standards.

(3) Standard costing cannot be applied in the case of a- concern where non-standardised products are produced.

(4) Fixing of responsibility is' difficult. Responsibility cannot be fixed in the case of uncontrollable variances.

(5) Frequent revision is required while insufficient staff is incapable of operating this system. Standard Cost vs. Estimated Cost

- Standard Cost: A scientifically predetermined cost for a selected period under specified conditions, used for control.
- Estimated Cost: A forecast of what costs will be in the future, often less detailed than standards.

Installation of Standard Costing System

- Set Standards: Define expected material, labor, and overhead costs/quantities.
- Identify Cost Elements: Separate costs into direct materials, direct labor, and overheads (fixed/variable).
- Compare Actual vs. Standard: Regularly record and compare actual results.
- Analyze Variances: Investigate reasons for deviations (favorable/adverse).
- Take Action: Implement corrective measures.

Variance Analysis

- The process of examining the differences between standard and actual costs to find causes.
- Favorable (F): Actual < Standard (e.g., lower cost, higher revenue).
- Unfavorable (A/Adverse): Actual > Standard (e.g., higher cost, lower revenue).

Types of Variances & Calculations (Key Formulas)

- Material Variances:
    - Price Variance (MPV): (Std Price - Act Price) x Act Qty.

- Usage/Quantity Variance (MUV): (Std Qty - Act Qty) x Std Price.
- Total Material Variance: MPV + MUV or (Std Cost - Act Cost).

- Labor Variances:
  - Rate Variance (LRV): (Std Rate - Act Rate) x Act Hours.
  - Efficiency Variance (LEV): (Std Hours - Act Hours) x Std Rate.
  - Total Labor Variance: LRV + LEV or (Std Cost - Act Cost).
- Overhead Variances: More complex (Fixed/Variable)

  Expenditure/Spending Variance: Actual Overhead vs. Budgeted Overhead.

  Volume/Capacity Variance: Difference due to activity levels.

Efficiency Variance:

Problem:1

Calculate Material Cost Variance from the following data

Material	Standard			Actual		
	QTY	Rate(Rs)	Amount	QTY	Rate(Rs)	Amount
A	27,000	2.00	70,200	28,000	2.20	61,600
B	18,000	1.70	30,600	20,000	1.80	36,000
Total	45,000		1,00,800	48,000		97,600

Standard loss is 5%

Solution

1) Material Cost Variance = Standard Cost –Actual Cost

= 1, 00,800 -- 97,600 = Rs.3,200 (F)

2) Material Price Variance = AQ(SP – AP)

Material A = 28,000 (2.60 - 2.20) = 28,000 x 0.40 = Rs.11, 200 (F)

Material B = 20,000 (1.70 – 1.80) = 20,000x 0.10= Rs.2,000 (A)

3) Material Usage Variance = SP (SQ – AQ)

Material A = 2.60 (27,000 – 28,000) = 2.60 x 1000 = Rs. 2,600 (A)

Material B = 1.70 (18,000 – 20,000) = 1.70 x2000 = Rs.3, 400(A)

Total MUV = 2,600 + 3,400 = Rs.6, 000 (A)

4) Material Mix Variance = SP (RSM – ASM)

Material A = 2.60 (28,800 -28,000) = 2.60 x 800= Rs.2,080 (F)

Material B = 1.70(19,200 – 20,000) = 1.70 x 800 = Rs. 1360 (A)

Total MMV = 2080 – 1,360 = Rs.720 (F)

5) Material Yield Variance = Std Rate from actual output (AY-SY)

= 2,358 (42,750 – 45,600)

= 2.40 x 2850 = Rs.6, 720 (A)

Verification MCV = MPV+MQV

= 9,200 – 6,000 = Rs.32, 000 (F)

MQV = MMV +MYV

= 720 – 6,720 = Rs.6,000 (A)

Labour cost variance = (SH x SR) - (AH x AR)

Problem:2

The information regarding the composition and hourly wage rates of labour force engaged on a job scheduled to be completed in 90 hours are as follows.

Category of workers	Standard		Actual	
	No of workers	Hourly wages rate per worker (Rs.)	No of workers	Hourly wages rate per worker (Rs.)
Skilled	75	6	70	7
Semi—Skilled	45	4	30	5
Un Skilled	60	3	80	2

The work was completed in 32 hours.

Calculate labour variances

Solution

Workings

Workers	Standard man hours	Actual man hours
Skilled	75 x 30 = 2,250	70 x 32 = 2,240
Semi—Skilled	45 x 30 = 1,350	30 x 32 = 960

Un Skilled	60 x 30 = 1,800	60 x 32 = 560
Total	5,400	5,760

Std Hours means Standard man hours

A) Labour Cost Variance = (SH x SR) - (AH x AR)

Skilled = (2,250 x Rs. 6) - (2,240 x Rs.7)

= 12,600 - 15,680 = Rs.2,180 (A)

Semi-Skilled = (1,350 x Rs.4) - (960 x Rs.5)

= 5,400 - 4,800 = Rs .600 (F)

Unskilled = (1,800 x Rs.3) - (2,580 x Rs.2)

= 5,400 – 5,120 = Rs. 280 (F)

1,300(A)

B) Labour Rate Variance = (Sp – AP) AP

Skilled = (Rs. 6 – Rs.. 7) 2,240 = Rs. 2,240 (A)

Semi-Skilled = (Rs.4 – Rs.5) 960 = Rs. 960 (A)

Unskilled = (Rs. 3 – Rs.2) 2,560 = Rs. 2,560 (F)

Rs. 640 (A)

C) Labour Efficiency Variance = (SH –AH)SR

Skilled = (2,250 - 2,240) Rs. 6 = Rs.60 (F)

Semi-Skilled = (1350 - 960) Rs. 4 = Rs.1,560(F)

Unskilled = (1800 - 2560) Rs. 3 = Rs. 2,280 (A)

= Rs. 660 (A)

D) Labour Mix Variance (RSH - AH) SR

RSH = Total Actual Hours / Total Standard Hours X Standard hours of….

Skilled = 5760 / 5400 X 2250 = 2,400

Semi-Skilled = 5,760 / 5400 X 1350 = 1440

Unskilled = 5,760 / 5400 X 1800 = 1920

LMV Skilled = (2,400 –2240) 6 = 960 (F)

Semi-Skilled = (1440 – 960) 4 = 1920 (F)

Unskilled = (1920- 2560) 3 = 1,920 (A)

960 (F)

E) Labour Sub-Efficiency Variance (SH - RSH) SR

Skilled = (2,250 – 2400) 6 = 900 (A)

Semi-Skilled = (1350-1440) 4 = 360 (A)

Unskilled = (1800 – 1920) 3 = 360 (A)

1620 (A)

Verification LCV= LRV + LEV

1300 (A) = 640(A) + 650 (A)

LEV = LMV + L Sub EV

660(A) = 960 (F) + 1620 (A)

3. NXE Manufacturing Concern furnishes the following information: Standard: Material for 70 kg finished products 100 kg. Price of material ` 1 per kg. Actual: Output 2,10,000 kg. Material used 2,80,000 kg. Cost of Materials ` 2,52,000 CALCULATE: (a) Material usage variance, (b) Material price variance, (c) Material cost variance

Solution

Standard Quantity of input for actual output (SQ) = 2,10,000 kg × 70 kg 100 kg = 3, 00,000 kg.

Actual Price (AP) = (`2,52,000 ÷ 2, 80,000 kg) = ` 0.90 per kg.

(a) Material Usage Variance = (SQ – AQ) × SP = (3,00,000 – 2,80,000) × 1 = ` 20,000 (F)

(b) Material Price Variance = (SP – AP) × AQ = (1 – 0.90) × 2,80,000= ` 28, 000 (F)

(c) Material Cost Variance = (SQ × SP) – (AQ × AP) = (3, 00,000 × 1) – (2, 80,000 × 0.90) = ` 48, 000 MCV = MPV + MUV ` 48, 000 (F) = ` 28, 000 (F) + `20, 000 (F)

4. The standard and actual figures of a firm are as under Standard time for the job 1,000 hours Standard rate per hour ` 50 Actual time taken 900 hours Actual wages paid ` 36,000 CALCULATE the variances.

SOLUTION

(a) Std. labour cost (`) (1,000 hours × `50) 50,000

(b) Actual wages paid 36,000

(c) Actual rate per hour: ` 36,000/900 hours = `40 Variances

(i) Labour Rate variance = Actual time (Std. rate – Actual rate) = 900 hours

(`50 – `40) = `9,000 (F)

(ii) Efficiency variance = Std. rate per hr. (Std. time – Actual time) = `50

(1,000 hrs. – 900 hrs.) = `5,000 (F)

(iii) Total labour cost variance = Std. labour cost – Actual labour cost =

{(`50 × 1,000 hours) – `36,000} = (`50,000 – `36,000) = `14,000 (F)