



Preparation of Cost Sheet

Cost sheet is a statement designed to show the output of a particular accounting period along with break up of costs. It is often considered good to prepare cost sheet with cost data of previous periods. This facilitates comparison and promotes cost control.

Cost Sheet

(I) Proforma of Cost Sheet

Particulars	Total Cost	Cost Per Unit
Opening Stock of Raw Materials	xxx	xxx
Add: Purchases	xxx	xxx
Add: Carriage Inward	xxx	xxx
Add: Octroi and Customs Duty	xxx	xxx
Less: Closing Stock of Raw Materials		
Cost of Direct Materials Consumed	xxx	xxx
Direct Wages	xxx	xxx
Direct or Chargeable Expenses	xxx	xxx
Prime Cost	xxx	xxx
Add: Works or Factory Overheads:		
Indirect Materials	xxx	xxx
Indirect Wages	xxx	xxx
Leave Wages	xxx	xxx
Bonus to Workers	xxx	xxx
Overtime Wages	xxx	
Fuel and Power	xxx	

Rent and Taxes	xxx	
Insurance	xxx	
Factory Lightings	xxx	
Supervision	xxx	
Works Stationery	xxx	
Canteen and Welfare Expenses	xxx	
Repairs	xxx	
Works Salaries	xxx	
Depreciation of Plant and Machinery	xxx	
Works Expenses	xxx	
Gas and Water	xxx	
Technical Director's Fees	xxx	
Laboratory Expenses	xxx	
Works Transport Expenses	xxx	
Works Telephone Expenses	xxx	
Add: Opening Stock of Work-in-Progress	xxx	xxx
Less: Closing Stock of Work-in-Progress	xxx	xxx
Less: Sale of Waste scrap	xxx	xxx
Works Costs	xxx	xxx
Add: Office and Administration Overheads:		
Office Salaries	xxx	
Directors Fees	xxx	
Office Rent and Rates	xxx	
Office Stationery and Printing	xxx	
Sundry Office Expenses	xxx	
Depreciation on Office Furniture	xxx	
Subscription to Trade Journals	xxx	
Office Lightings	xxx	
Establishment Charges	xxx	
Directors Travelling Expenses	xxx	
Consultants' Fees		xxx
Contribution to Provident Fund	xxx	
Postage		xxx
Legal Charges		xxx
Audit Charges		xxx
Bank Charges		xxx
Depreciation and Repairs of Office Equipment	xxx	
Bonus to Staff		xxx

Cost of Production	xxx	xxx
Add: Opening Stock of Finished Goods	xxx	xxx
Less: Closing Stock of Finished Goods	xxx	xxx
Cost of Goods Sold	xxx	xxx
Add: Selling and Distribution Overheads:		
Advertising	xxx	
Showroom Expenses	xxx	
Salesmen's Salaries and Expenses	xxx	
Packing Expenses	xxx	
Carriage Outward	xxx	
Commssion of Sales Agents	xxx	
Cost of Catalogues	xxx	
Expenses of Delivery Vans	xxx	
Collection Charges	xxx	
Travelling Expenses	xxx	
Cost Tenders	xxx	
Warehouse Expenses	xxx	
Cost of Mailing Literature	xxx	
Sales Managers' Salaries	xxx	
Insurance of Showroom	xxx	
Sales Directors' Fees	xxx	
Sales Office Expenses	xxx	
Rent of Sales Office	xxx	
Depreciation of Delivery Vans	xxx	
Expenses of Sales Branch	xxx	
Establishments	xxx	
Branch Office Expenses	xxx	
Total Cost/Total of Sales	xxx	xxx
Profit or Loss	xxx	xxx
Sales	xxx	xxx

Following items are to to be ignored in the cost sheet:

- (a) Advance tax paid
- (b) Cash discount allowed on sales
- (c) Divedend paid
- (d) Dividend received
- (e) Debenture interest
- (f) Donation paid

- (g) Interest received
- (h) Interest paid on loan
- (i) Income tax paid
- (j) Interest paid on bank overdraft
- (k) Income tax refund
- (l) Interest on capital
- (m) Bad debts
- (n) Loss on sale of machinery
- (o) Purchase of computer for office
- (p) Purchase delivery van
- (q) Profit on sale of investment
- (r) Sale of machinery

The following expenses are excluded from cost sheet:

- (1) Finance Overheads:
 - (a) Interest on Capital
 - (b) Bad Debts.
 - (c) Discount allowed on Sales.
- (2) Income Tax, Advance Tax and Income Tax Provision.

The following incomes are excluded from cost sheet:

- (1) Non-operating income such as discount received.

Note:

The following four items are independent variables and they remain constant unless any change is given in them:

1. Units produced and sold.
2. Selling price per unit.
3. Variable cost per unit
4. Total Fixed Cost

				Profit	Sales Value
			Selling and Distribution Overheads	Loss	
		Office and Administration Overheads	Cost of Production/ Cost of Goods Sold	Total Cost of Sales	
	Works/Factory Overheads	Works/ Factory Cost			
Direct Material	Prime Cost				
Direct Labour					
Direct Expenses					

Fig. Composition of Selling Price

Table: Profit Table

Percentage on Cost Price	Percentage on Sale Price
(1) $100\% \left(\frac{1}{1} \right)$	$50\% \left(\frac{1}{2} \right)$
(2) $50\% \left(\frac{1}{2} \right)$	$33\frac{1}{3}\% \left(\frac{1}{3} \right)$
(3) $33\frac{1}{3}\% \left(\frac{1}{3} \right)$	$25\% \left(\frac{1}{4} \right)$
(4) $25\% \left(\frac{1}{4} \right)$	$20\% \left(\frac{1}{5} \right)$
(5) $20\% \left(\frac{1}{5} \right)$	$16\frac{2}{3}\% \left(\frac{1}{6} \right)$
(6) $11.11\% \left(\frac{1}{9} \right)$	$10\% \left(\frac{1}{10} \right)$

Steps in Preparation of Cost Sheet:

- (1) All the cost are classified into Direct Costs or Indirect Costs.
- (2) Items of costs are arranged in the order of first, Material then Labour and in the last expenses.
- (3) All Direct Costs are also termed as Prime Costs. In a Cost Sheet all the items of Prime Cost are recorded first strictly in the order of Material, Labour and Expenses.

- (4) Then all indirect costs also termed as overheads are recorded.
- (5) In case of indirect costs the items are broadly categorised into three main groups:
 - (a) **Works/Factory Cost:** In this case all factory overheads are recorded such as indirect works material, indirect factory labour and indirect factory expenses. All indirect costs related to factory is recorded here.
 - (b) **Office and Administration Cost:** In this case all administration overheads are recorded such as indirect administration material, indirect administration labour and indirect administration expenses. All indirect costs related to administration is recorded here.
 - (c) **Selling and Distribution Cost:** In this case all selling and distribution overheads are recorded such as indirect selling and distribution material, indirect selling and distribution labour and indirect selling and distribution expenses. Both selling expenses as well as Distribution expenses are considered together in this case.
- (6) Finance expenses are not to be considered in the costs sheet. E.g., Interest paid, Bad debts, etc.
- (7) Non-operating incomes and non-operating expenses are not to be considered in the cost sheet. E.g., Profit or Loss on Sale of Fixed Assets, Fictitious Assets written-off, etc.

Method of Preparing Cost Sheet:

In case of a cost sheet all the costs are classified into three main elements, i.e.,

- (a) Materials
- (b) Labour
- (c) Expenses

Further each of the above items are classified into direct and indirect costs.

- (1) **Direct Materials:** It includes the cost of direct (main) raw material plus all expenses relating to purchases of such direct material such as carriage inward, octroi duty, custom duty on imported materials, etc.
- (2) **Direct Labour/Wages:** It is also known as productive wages. It is the wages paid for the staff (employees) who are engaged directly in productive activities. Employees who take in the raw materials and introduce it in the machine for production purpose is termed as direct labour. E.g., Wages paid to carpenter who converts wood into a fine piece of furniture.
- (3) **Direct (or chargeable) Expenses:** Direct expenses are such expenses which are incurred directly with the production activities. According to CIMA, United Kingdom, "Direct expenses are those expenses which can be identified with and allocated to cost centres or units". E.g., Carriage Inwards incurred for purchase of raw materials, Hire charges of special equipment required for a job, etc.
- (4) **Overheads:** Overheads is an aggregate of all indirect expenses. It comprises of:
 - (a) Factory overheads.
 - (b) Office overheads.
 - (c) Selling and Distribution overheads.

Further each of the above item is classified into:

- (i) Material i.e., Indirect Materials.
- (ii) Labour i.e., Indirect Labour.
- (iii) Expenses i.e., Indirect Expenses.

Classification of Costs:

The term 'cost' is defined in a variety of ways. Its simple meaning is 'total expense'.

Cost can be classified in a number of ways:

- (a) Direct Costs.
- (b) Indirect Cost
- (c) Fixed Cost
- (d) Variable Cost.
- (e) Semi-variable Cost.

Direct Cost:

Direct cost are those costs which can be conveniently associated wholly with a particular unit of a final product. Direct costs can be directly identified with and allocated to cost centres or cost units.

E.g.:

- (i) Materials which form part of the finished product — cost of wood in a firm manufacturing furniture.
- (ii) Wages payable to worker who is directly involved in production — carpenter's wages in a firm manufacturing furniture.
- (iii) Carriage expenses on raw materials.
- (iv) Workers' wages.
- (v) Raw material charges

Indirect Cost:

The Institute of Cost and Management Accountants (UK) defines indirect cost as the, "Cost which cannot be allocated but which can be apportioned to or absorbed by cost centers or cost units." They are incurred for the benefit of more than one product, activity or job and must be apportioned by some appropriate bases to the various functions. Costs which cannot be associated or connected with a particular unit of the final product is termed as indirect costs. Indirect costs cannot be identified and allocated with cost centers or cost units and therefore they are apportioned on some equitable basis to cost centers or cost units.

E.g.:

- (i) Advertisement expenses
- (ii) Office rent

- (iii) Packing expenses [**Note:** Primary Packing Materials - Direct Cost Secondary Packing Materials - Indirect Cost]
- (iv) Depreciation on Furniture
- (v) Legal expenses
- (vi) Cost of consumable stores.
- (vii) Salaries of foreman, supervisor, factory manager
- (viii) Rent and rates,
- (ix) Printing and stationery,
- (x) Telephone expenses,
- (xi) Heat and light,
- (xii) Maintenance, etc.

Distinguish between Direct Cost and Indirect Cost

Direct Cost	Indirect Cost
(1) Direct cost means that cost which can be identified with and allocated to cost centres or cost units.	(1) Indirect cost means that cost which cannot be allocated but which can be absorbed by or apportioned to cost centres or cost units.
(2) Those cost which can be directly identified with cost centres, production units or processes are regarded as direct costs.	(2) Those cost which cannot be identified with cost centres or cost units and therefore, they are to be distributed on some equitable basis are termed as indirect costs.
(3) Costs which can be conveniently associated wholly with a particular unit of a final product is termed as direct costs,	(3) Costs which cannot be associated or connected with a particular unit of the final product is termed as indirect costs.
(4) Examples are: <ul style="list-style-type: none"> (a) Materials which form part of the finished product, (b) Wages payable to worker who is directly involved in production, etc. 	(4) Examples are: <ul style="list-style-type: none"> (a) Cost of consumable stores, (b) Salaries of factory manager, supervisor, foreman. (c) Rent, rates, telephone expenses, printing and stationery expenses, etc.

Overheads:

Overheads means indirect cost. Overheads are also termed as "On costs". Overheads is an aggregate of indirect materials, indirect labour and indirect expenses.

- (a) Factory overheads,
- (b) Administrative overheads, and
- (c) Selling and Distribution overheads

SOLVED PROBLEMS

Illustration 1

[M.U., T.Y.B.Com., Modified]

The accounts of Z Ltd for the year ended 31st December, 2010, shows the following:

Particulars	(₹)
Work Office Salaries	6,500
Administrative Office Salaries	12,600
Cash Discounts allowed	2,900
Carriage Outward	4,300
Carriage Inward	7,150
Bad debts written off	6,500
Repairs to Plant and Machinery	4,450
Rent, rates,taxes, Insurance etc	
Factory	8,500
Office	2,000
Sales	4,61,000
Stock of Raw materials:	
1st Jan., 2010	48,000
31st Dec., 2010	62,800
Materials Purchased	1,85,00
Travelling Expenses	2,100
Travellers Salaries and Commission	7,700
Productive Wages	1,26,000
Depreciation on Plant and Machinery	6,500
Depreciation on Office Furniture	300
Director's Fees	6,000
Gas and Water (Factory)	1,200
Gas and Water (Office)	400
Manager's Salary (1/4 Office and 3/4 Factory)	10,000
General Expenses	3,400

You are required to prepare a cost statement for the year ended 31st December, 2010.

Solution**Z Ltd.****Cost Statement for the year ended 31st December, 2010**

Particulars	₹	₹
Raw Materials Consumed:		
Stock of Raw Materials as on 1st Jan., 2010	48,000	
Add: Materials Purchased	1,85,000	
Add: Carnage Inward	7,150	
Less: Stock of Raw Materials as on 31st Dec., 2010	62,800	
Raw Materials Consumed		1,77,350
Productive Wages		1,26,000
PRIME COST		3,03,350
Add: Works/Factory Overheads:		
Work Office Salaries	6,500	
Repairs to Plant and Machinery	4,450	
Rent, Rates, Taxes, Insurance etc. – Factory	8,500	
Depreciation on Plant and Machinery	6,500	
Gas and Water (Factory)	1,200	
Manager's Salary (3/4)	7,500	
Works or Factory Overheads		34,650
WORKS/FACTORY COST		34,38,000
Add: Office and Administration Overheads:		
Administrative Office Salaries	12,600	
Rent, Rates, Taxes, Insurance etc. – Office	2,000	
Depreciation on Office Furniture	300	
Director's Fees	6,000	
Gas and Water (Office)	400	
Manager's Salary (1/4)	2,500	
General Expenses	3,400	
Office and Administration Overheads		27,200
COST OF PRODUCTION/COST OF GOODS SOLD		3,65,200
Add: Selling and Distribution Overheads:		
Carriage Outward	4,300	
Travelling Expenses	2,100	
Travellers Salaries and Commission	7,700	
Selling and Distribution Overheads		14,100
TOTAL COST OF SALES		3,79,300
Add: Profit (Balancing Figure)		81,700
SALES		4,61,000

Illustration 2*[M.U., T.Y.B.Com., Modified]*

From the following data, prepare a Cost Sheet for the year 2010. Number of Units produced: 10,000 Units.

Particulars	₹
Opening Stock of Raw Materials	3,00,000
Purchase of Raw Materials	8,00,000
Closing Stock of Raw Materials	1,00,000
Carriage Outward	8,000
Wages Indirect	20,000
Salary:	
Office	50,000
Sales Office	40,000
Other Factory Expenses	50,000
Trade Fair Expenses	20,000
Depreciation:	
Factory	30,000
Office	20,000
Selling	20,000
Direct Salary	50,000
Advance Interest Received	40,000
Custom Duty Paid for Purchase of Raw Material	5,00,000
Debenture Interest Paid	50,000
Freight Inward	20,000
Custom Duty Paid for Purchase of Plant	50,000
Direct Wages	2,00,000
Other Direct Charges	50,000
Goodwill Written-off	5,000
Number of Units sold 8,000 units at cost plus 18% Profit	

Direct Salary is to be allocated to factory. Office and Selling in the ratio of 2:1:2.

Solution:**Cost Statement for the year ended 2010**

Particulars	Units	Total ₹	Total ₹	Cost Per Unit ₹
Raw Materials Consumed:				
Opening Stock of Raw Materials		3,00,000		30.0
Add: Purchase of Raw Materials		8,00,000		80.0
Add: Custom Duty Paid for Purchase of Raw Materials		5,00,000		50.0

Add: Freight Inward		20,000		2.0
Less: Closing Stock of Raw Materials		1,00,000		10.0
Raw Materials Consumed			15,20,000	152.0
Direct Wages			2,00,000	20.0
Other Direct Charges			50,000	5.0
PRIME COST	10,000		17,70,000	177.0
Add: Works/Factory Overheads:				
Wages Indirect		20,000		2.0
Other Factory Expenses		50,000		5.0
Depreciation - Factory		30,000		3.0
Direct Salary - Factory (2/5)		20,000		2.0
Works or Factory Overheads	10,000		1,20,000	12.0
WORKS/FACTORY COST	10,000		18,90,000	189.0
Add: Office and Administration Overheads:				
Office Salary		50,000		5.0
Depreciation – Office		20,000		2.0
Direct Salary – Office (1/5)		10,000		1.0
Office and Administration Overheads	10,000		80,000	8.0
COST OF PRODUCTION	10,000		19,70,000	197.0
Less: Closing Stock of Finished Goods (Valued as per As -2)		2,000	3,78,000	189.0
Cost of Goods Sold	8,000		15,92,000	199.0
Add: Selling and Distribution Overheads:				
Carriage Outward		8,000		1.0
Salary – Sales Office		40,000		5.0
Trade Fair Expenses		20,000		2.5
Depreciation – Selling		20,000		2.5
Direct Salary – Sales(2/5)		20,000		2.5
Selling and Distribution Overheads	8,000		1,08,000	13.5
TOTAL COST OF SALES	8,000		17,00,000	212.5
Add: Profit @ 18%			3,06,000	38.25
Sales Value	8,000		20,06,000	250.75
			20,06,000	

Illustration 3*[M.U., T.Y. B.Com., April 1996, Adapted]*

Swadeshi Electronics Ltd. furnishes you the following information for the year ended 31st March, 2012

Production and Sales	Units	15,000
Sales	`	12,75,000
Direct Wages	`	2,70,000
Direct Materials	`	3,30,000
Factory Overheads	`	2,25,000
Administrative Overheads	`	1,05,000
Sales Overheads	`	90,000

On account of intense competition following changes are estimated in the subsequent year:

- Production and sales activity will be increased by one third.
- Material rate will be lower by 25%. However, there will be increase in consumption by 20% due to quality difference.
- Direct wages cost would be reduced by 20% due to automation.
- Out of the above factory overheads, ` 45,000 are of fixed nature. The remaining factory expenses are variable in proportion to the number of units produced.
- Total administrative overheads will be lower by 40%.
- Sales overheads per unit would remain the same.
- Sale price per unit would be lower by 20%.

Prepare a statement of cost for both the years ending 31st March, 2012 and 31st March, 2013 showing maximum possible details of cost.

Solution

Swadeshi Electronics Ltd.
Cost Sheet for the year ended 31st March, 2012

[Output: 15,000 Units]

Particulars	Total		Cost per Unit `
	`	`	
Direct Materials	3,30,000		22
Direct Wages	2,70,000		18
Prime Cost		6,00,000	40
Add: Works/Factory Overheads:			
Fixed Overheads	45,000		3
Variable Overheads	1,80,000		12
Factory Overheads		2,25,000	15
Works/Factory Cost		8,25,000	55

Add: Office and Administration Overheads:			
Administrative Overheads		1,05,000	7
Cost of Production/Cost of Goods Sold		9,30,000	62
Add: Selling and Distribution Overheads			
Sales Overheads		90,000	6
Total Cost of Sales		10,20,000	68
Add: Profit		2,55,000	17
Sales Value		12,75,000	85

Estimated Cost Sheet for the year ending 31st March, 2013

[Output: 20,000 Units]

Particulars	Total		Cost per Unit
Direct Materials	3,96,000		19.80
Direct Wages	2,16,000		10.80
Prime Cost		6,12,000	30.60
Add: Works/Factory Overheads:			
Fixed Overheads	45,000		22.50
Variable Overheads	2,40,000		12.00
Factory Overheads		2,85,000	14.25
Works/Factory Cost		8,97,000	44.85
Add: Office and Administration Overheads:			
Administrative Overheads		63,000	3.15
Cost of Production/Cost of Goods Sold		9,60,000	48.00
Add: Selling and Distribution Overheads			
Sales Overheads		1,20,000	6.00
Total Cost of Sales		10,80,000	54.00
Add: Profit		2,80,000	14.00
Sales Value		13,60,000	68.00

Illustration 4

[M.U., T.Y.B.Com., Modified]

From the following data, prepare a cost sheet for the year 2010.

Particulars	
Opening Stock of Raw Materials	3,00,000
Purchases	8,00,000
Closing Stock of Raw Materials	4,00,000
Carriage Outward	50,000
Wages Direct	7,00,000

Wages Indirect	1,00,000
Chargeable Expenses	2,00,000
Rent and Rates: Factory	40,000
Office	5,000
Indirect Materials	15,000
Drawing Office Salaries	10,000
Depreciation: Plant	5,000
Office Furniture	1,000
Salary: Office	25,000
Salesmen	20,000
W.I.P.: 1-1-2010	20,000
31-12-2010	10,000
Sale of by Product	10,000
Other Factory Expenses	57,000
Other Office Expenses	9,000
Managing Director's Remuneration	1,20,000
Other Selling Expenses	10,000
Art Work Charges	40,000
Stock of Finished goods: 1-1-2010	10,000
31-12-2010	50,000
Traveling Expenses of Salesmen	11,000
Carriage Inward	10,000
Sales	30,00,000
Advance Income Tax paid	1,50,000
Advertisement	20,000

M.D.'s remuneration to be allocated as ` 40,000 to factory, ` 20,000 to office and ` 60,000 to sales.

Solution

Cost Statement for the year ended 2010

Particulars	`	`
Raw Materials Consumed:		
Opening Stock of Raw Materials	3,00,000	
Add: Purchases	8,00,000	
Add: Carriage Inward	10,000	
Less: Closing Stock of Raw Materials	4,00,000	
Raw Materials Consumed		7,10,000
Wages Direct		7,00,000
Chargeable Expenses		2,00,000
PRIME COST		16,10,000

Add: Works/Factory Overheads:		
Wages Indirect	1,00,000	
Rent and Rates - Factory	40,000	
Indirect Materials	15,000	
Drawing Office Salaries	10,000	
Depreciation - Plant	5,000	
Other Factory Expenses	57,000	
Managing Director's Remuneration	40,000	
Add: W.I.P. as on 1-9-2010	20,000	
Less: W.I.P. as on 31-12-2010	10,000	
Less: Sale of By-product	10,000	
Works or Factory Overheads		2,67,000
WORKS/FACTORY COST		18,77,000
Add: Office and Administration Overheads:		
Rent and Rates - Office	5,000	
Depreciation - Office Furniture	1,000	
Salary-Office	25,000	
Other Office Expenses	9,000	
Managing Director's Remuneration	20,000	
Office and Administration Overheads		60,000
COST OF PRODUCTION		19,37,000
Add: Stock of Finished Goods as on 1.1-2010		10,000
		19,47,000
Less: Stock of Finished Goods as on 31-12-2010		50,000
COST OF GOODS SOLD		18,97,000
Add: Selling and Distribution Overheads:		
Carriage Outward	50,000	
Salary-Salesmen	20,000	
Other Selling Expenses	10,000	
Art Work Charges	40,000	
Travelling Expenses of Salesmen	11,000	
Advertisement	20,000	
Managing Director's Remuneration	60,000	
Selling and Distribution Overheads		2,11,000
TOTAL COST OF SALES		21,08,000
Add: Profit		8,92,000
Sales		30,00,000

Illustration 5*[M.U., T.Y.B.Com., Modified]*

Hindustan Machine Tools Ltd. furnishes for March, 2012 the following information for a department:
Deluxe wrist watches manufactured 1,000 pieces.

Cost and other data	₹
Opening stock	
Raw materials	4,50,000
Finished goods (200 pieces)	3,30,000
Closing stock	
Raw materials	5,00,000
Finished goods (300 pieces)	?
Purchases of raw material	7,00,000
Direct labour	4,00,000
Indirect labour factory	1,00,000
Consumption of stores and spares	90,000
Sales	21,60,000

Other overheads	Factory	Office	Sales depot
Salary	1,00,000	2,00,000	1,50,000
Electricity	25,000	2,000	10,000
Stationery and Printing	10,000	25,000	20,000
Travelling expenses	3,000	10,000	50,000
Rent	5,000	5,000	5,000
Showroom and Exhibition expenses	-	-	10,000
Miscellaneous expenses	15,000	25,000	20,000

The stock of finished goods is valued at current month's cost of production.

- You are required to prepare a cost sheet for the month of March, 2012 and ascertain the amount of profit.
- What should be the selling price in order to earn additional profit on sales?

Solution**Cost Statement for the month of March, 2012**

Particulars	Units	Total	Total	Cost Per Unit
Raw Materials Consumed:				
Opening Stock of Raw Materials		4,50,000		450.00
Add: Purchase of Raw Materials		7,00,000		700.00
Less: Closing Stock of Raw Materials		5,00,000		500.00
Raw Materials Consumed			6,50,000	650.00
Direct Labour			4,00,000	400.00
PRIME COST	1,000		10,50,000	1,050.00
Add: Works/Factory Overheads:				
Indirect Labour Factory		1,00,000		100.00
Consumption of Stores and Spares		90,000		90.00
Salary		1,00,000		100.00
Electricity		25,000		25.00
Stationery and Printing		10,000		10.00
Travelling Expenses		3,000		3.00
Rent		5,000		5.00
Miscellaneous expenses		15,000		15.00
Works or Factory Overheads	1,000		3,48,000	348.00
WORKS/FACTORY COST	1,000		13,98,000	1,398.00
Add: Office and Administration Overheads:				
Salary		2,00,000		200.00
Electricity		2,000		2.00
Stationery and Printing		25,000		25.00
Travelling Expenses		10,000		10.00
Rent		5,000		5.00
Miscellaneous expenses		25,000		25.00
Office and Administration Overheads	1,000		2,67,000	267.00
COST OF PRODUCTION	1,000		16,65,000	1,665.00
Add: Opening Stock of Finished Goods	200		3,30,000	1,650.00
	1,200		19,95,000	1,662.50
Less: Closing Stock of Finished Goods (Valued at Cost of Production)	300		4,99,500	1,665.00
COST OF GOODS SOLD	900		14,95,500	1661.66
Add: Selling and Distribution Overheads:				
Salary		1,50,000		166.66
Electricity		10,000		11.11

Stationery and Printing		20,000		22.22
Travelling expenses		50,000		55.55
Rent		5,000		5.55
Show room and Exhibition expenses		10,000		11.11
Miscellaneous expenses		20,000		22.22
Selling and Distribution Overheads	900		2,65,000	294.44
TOTAL-COST OF SALES	900		17,60,500	1,956.11
Add: Profit	900		3,99,500	443.89
Sales	900		21,60,000	2400.00

Illustration 6*[M.U., B.Com., October 1995, Adapted]*

Following is the Profit and Loss Account for the year ended 31st March, 2012 of M/s. Cool and Comforts Ltd., manufacturers of Table Fans. They manufactured and sold during the year 2000 fans.

Profit and Loss Account for the year ended 31st March, 2005**Dr.****Cr.**

Particulars	`	Particulars	`
To Materials Consumed	1,20,000	By Sales	6,00,000
To Wages	1,80,000		
To Manufacturing Expenses	75,000		
To Gross Profit c/d	2,25,000		
	<u>` 6,00,000</u>		<u>` 6,00,000</u>
To Rent, Rates and Taxes	15,000	By Gross Profit b/d	2,25,000
To General Expenses	30,000		
To Management Expenses	90,000		
To Sales and Distribution Expenses	45,000		
To Net Profit	45,000		
	<u>` 2,25,000</u>		<u>` 2,25,000</u>

Their estimates for the next year ending 31st March 2013 are as under:

- The production and sales would increase to 3000 fans.
- The prices of materials per fan would increase by 20%
- The labour cost per fan would go up by 10%
- The manufacturing expenses would remain in the same proportion to materials consumed and wages as in the previous year.
- The selling and distribution expenses per fan would remain unchanged.
- The other expenses would remain unaffected on account of increase in the production.

Prepare a statement for the two years, 2011 -2012 and 2012-2013 showing cost and profit per fan and total cost and total profit, giving maximum possible break-up of cost.

Solution

M/s. Cool and Comforts Ltd.
Cost Sheet for the year ended 31st March. 2012

[Output: 2,000 Fans]

Particulars	Total		Cost per Unit (₹)
	₹	₹	
Materials Consumed	1,20,000		60.0
Wages	1,80,000		90.0
Prime Cost		3,00,000	150.0
Add: Works/Factory Overheads:			
Manufacturing Expenses		75,000	37.5
Works/Factory Cost		3,75,000	187.5
Add: Office and Administration Overheads:			
Rent, Rates and Taxes	15,000		7.5
General Expenses	30,000		15.0
Management Expenses	90,000		45.0
Total Office and Administration Overheads		1,35,000	67.5
Cost of Production/Cost of Goods Sold		5,10,000	255.0
Add: Selling and Distribution Overheads			
Selling and Distribution Expenses		45,000	22.5
Total Cost of Sales		5,55,000	277.5
Add: Profit		45,000	22.5
Sales Value		6,00,000	300.0

Estimated Cost Sheet for the year ending 31st March, 2006

[Output: 3,000 Fans]

Particulars	Total		Cost per Unit (₹)
	₹	₹	
Materials Consumed	2,16,000		72.00
Wages	2,97,000		99.00
Prime Cost		5,13,000	171.00
Add: Works/Factory Overheads:			
Manufacturing Expenses		1,28,250	42.75
Works/Factory Cost		6,41,250	213.75
Add: Office and Administration Overheads:			
Rent, Rates and Taxes	15,000		5.00
General Expenses	30,000		10.00
Management Expenses	90,000		30.00

Total Office and Administration Overheads	1,35,000	45.00
Cost of Production/Cost of Goods Sold	7,76,250	258.75
Add: Selling and Distribution Overheads		
Selling and Distribution Expenses	67,500	22.50
Total Cost of Sales	8,43,750	281.25
Add: Profit	56,250	18.75
Sales Value	9,00,000	300.00

Illustration 7*[CA Modified]*

Dunkel Ltd. Started a factory in Navi Mumbai on 1st April, 2011. Following details are furnished about its activity during the year ended 31st March, 2012.

Raw Material consumed - 40,000 units @ ` 7 per unit.

Direct Wages:

(a) Skilled worker ` 9 per unit.

(b) Unskilled worker ` 6 per unit.

Royalty (On raw material consumed) @ ` 3 per unit.

Works overheads @ ` 8 per machine hour.

Machine Hours Worked 25,000.

Office Overheads at 1/3rd of works cost

Sales Commission @ ` 4 per unit.

Units produced 40,000

Stock of units at the end 4,000 units to be valued at cost of production per unit.

Sale price is ` 60 per unit.

Prepare Cost sheet showing the various elements of cost, bothin total and per unit.

Solution**Dunkel Ltd.****Cost Sheet for the year ended 31st March, 2012**

Particulars	Units	Total		Cost per Unit (`)
Raw Materials Consumed	40,000		2,80,000	7
Direct Wages:				
Skilled Workers Wages		3,60,000		9
Unskilled Workers Wages		2,40,000		6
Total Direct Wages			6,00,000	15

Direct Expenses:				
Royalty on Raw Material Consumed			1,20,000	3
Prime Cost			10,00,000	25
Add: Works/Factory Overheads:				
Works Overheads 8 × 25,000			2,00,000	5
Works/Factory Cost			12,00,000	30
Add: Office and Administration Overheads:				
Office Overheads			4,00,000	10
Cost of Production	40,000		16,00,000	40
Less: Closing Stock	4,000		1,60,000	40
Cost of Goods Sold	36,000		14,40,000	40
Add: Selling and Distribution Overheads				
Sales Commission	36,000		1,44,000	4
Total Cost of Sales	36,000		15,84,000	44
Add: Profit	36,000		5,76,000	16
Sales Value	36,000		21,60,000	60

Illustration 8*[CS Modified]*

Prepare a cost sheet showing the total and per tonne cost of paper manufactured by Times Paper Mills Ltd. For the month of March, 2012. There were 26 working days in the month. Also find the profit earned by the company. The details are as under:

Direct Raw materials:	
Paper pulp	6,000 tons @ ` 900 per tonne.
Direct labour:	
280 Skilled workmen	` 250 per day
300 Semiskilled workmen	` 150 per day
470 Unskilled workmen	` 100 per day
Direct expenses:	
Special equipment hire charges	` 12,000 per day
Special dyes	` 250 per tonne of total raw material input
Work overheads: Variable	@ 50% of direct wages
Fixed	` 2,70,000 p.m.
Administration overheads	@ 12% of works cost
Selling and distribution overheads	` 80 per tonne sold.
Opening stock of paper	500 tonnes valued @ ` 2,501.60 per ton
Closing stock of paper	300 tonnes valued at cost of production.

The paper is sold @ ` 3,000 per tonne.

Solution

Times Paper Mills Ltd.
[Working Days: 26]
Cost Sheet for the month of March, 2012

Particulars	Tons	Total		Cost per Unit (₹)
		₹	₹	
Direct Raw Materials:				
Paper Pulp	6,000		54,00,000	900.00
Direct Labour:				
Skilled Workmen $280 \times 250 \times 26$		18,20,000		303.33
Semiskilled Workmen $300 \times 150 \times 26$		11,70,000		195.00
Unskilled Workmen $470 \times 100 \times 26$		12,22,000		203.66
Direct Labour			42,12,000	702.00
Direct Expenses:				
Special Equipments Hire Charges $12,000 \times 26$		3,12,000		52.00
Special Dyes	6,000	15,00,000	250.00	
Direct Expenses			18,12,000	302.00
PRIME COST	6,000		1,14,24,000	1,904.00
Add: Works/Factory Overheads:				
Variable		21,06,000		351.00
Fixed		2,70,000		45.00
Works/Factory Overheads			23,76,000	396.00
Works or Factory Cost	6,000		1,38,00,000	2,300.00
Add: Office and Administration Overheads:				
Administration Overheads			16,56,000	276.00
Cost of Production	6,000		1,54,56,000	2,576.00
Add: Opening Stock of Paper	500		12,50,800	2,501.60
	6,500		1,67,06,800	2,570.27
Less: Closing Stock of Paper	300		7,72,800	2,576.00
Cost of Goods Sold	6,200		1,59,34,000	2,655.66
Add: Selling and Distribution Overheads	6,200		4,96,000	80.00
Total Cost of Sales	6,200		1,64,30,000	2,650.00
Add: Profit	6,200		21,70,000	350.00
Sales Value	6,200		1,86,00,000	3,000.00

Illustration 9

The following particulars are extracted from the books of a company relating to commodity Alpha for the half year ending 30th June, 2012.

Purchase of raw materials	1,30,000
Direct wages	1,00,000
Rent, rates, insurance and works on cost	45,000
Carriage inward	1,500
Stock on 1-1-2012	
Raw materials	20,000
Finished products (1,600 tonnes)	17,600
Stock on 30-6-2012	
Raw materials	25,000
Finished products (3,200 tonnes)	37,600
Work-in-progress on 1-1-2012	4,500
Work-in-progress on 30-6-2012	16,000
Factory supervision	10,000
Sales – Finished product	3,00,000

Advertising discount allowed and selling cost at Re.0.50 per tonne sold. 25,000 tonnes of commodity was sold during the period.

You are required to ascertain:

1. Prime Cost
2. Factory Cost
3. Cost of Sales
4. Profit
5. No. of tonnes of the commodity sold.

Solution**Cost Sheet of Commodity Alpha for the period ending 30-6-2009**

Particular		
Raw materials		
Opening stock	20,000	
Add: Purchases	1,30,000	
	1,50,000	
Less: Closing stock	25,000	
	1,25,000	
Add: Carriage inwards Materials Consumed	1,500	
		1,26,500

Direct wages		1,00,000
Prime cost		2,26,500
Rent, rates, insurance and works	45,000	
On cost Cost of factory supervision	10,000	
		55,000
Add: Opening Work-in-progress		4,500
Less: Closing Work-in-progress		16,000
Factory Cost		
Add: Opening stock of finished goods (1,600 tonnes)		17,600
Less: Closing stock of finished goods (3,200 tonnes)		37,600
Cost of goods sold		2,50,000
Add: Advertising and selling cost @ Re. 0.50 per tones on 25,000 tonnes		12,500
Cost of sales		2,62,500
Profit		37,500
Sales		3,00,000

EXERCISES

(1) The following is an extract of the costing information for the year ended 31 March 2012:

Sales	1,96,000
Purchase-raw material	60,000
Direct wages	60,000
Rent, Rates, insurance, & other works on cost	21,000
Carriages inwards	1,000
Opening stock – Raw material	10,000
Finished goods (200 tons)	12,000
Closing stock: Raw materials	11,000
Supervision	3,000
Advertising	4,000
Office overheads	30,000
Selling expenses	8,000

3,000 tons of the commodities were produced. The closing stock of finished goods is 400 tons. The same has to be valued at work cost. Prepare a detailed cost statement showing:

- (1) Cost of the output-total as well as per unit
- (2) Net profit for the year.

- (2) From the following data, relating to the manufacturing of a standard product during September 2012 prepares a statement showing cost & profit per unit:

Raw material used	1,20,000
Direct wages	72,000
Man hours worked	10,000 hours
Man hours rate for recovering works overheads	₹ 10 per hour
Office overheads	25% on work cost
Selling overheads	₹ 1.50 per unit
Unit produced 42,000; units sold 40,000 @ ₹ 25 per unit.	

- (3) X Y & Z carry on business as engineers in partnership, sharing profits & losses equally, Z devotes to the business only so much time as he thinks fit. Y acts as works manager & X as office manager. The following figures for the month of march, 2010 are available:

[MU, T.Y.B.Com., Modified]

Purchases of materials		74,250
Works wages	Direct	48,000
	Indirect	6,000
Office salaries		14,085
Carriages inward		450
Carriages outward		42,000
Sales		2,40,000
Opening stock of Materials		26,250
Finished goods (600 units)		6,750
Work-in-progress		9,750
Travelling expenses (25% administrative: 75% sales)		1,800
Interest on capital (equally to X,Y,& Z)		4,500
Advertising		4,500
Power		1,575
Income tax		14,250
Agents commission		6,750
Plant maintenance		5,490
Lighting (90% for factory, 10% for sale)		1,500
Discount received		450
Bad debts		750
Sundry expenses	(Factory)	2,100
	(Office)	3,900

Factory Buildings repairs		750
Partners salaries	X	1,500
	Y	1,800
Depreciation	Plant	2,850
	Factory	1,200
Building		600
Sale of Scrap		

On 31st March 2010 Materials on hand totaled ` 24,000 where as the work-in-progress was estimated as ` 8,500. 1800 units were produced out of which 650 remained unsold. Prepare cost sheet & show the profit earned.

- (4) In 2009 selling price was ` 10 per article & total sales were ` 1,00,000. In 2010, selling price was increased by 10%. Total sales realized ` 1,26,500.

In 2009, materials cost was 40% of sales value. In 2010, Prices of raw material rose by 10%.

In 2009, wages were ` 30,000. In 2010, the wages cost was ` 33,000. In 2009, other expenses were 10% of sales value. These expenses rose in 2010 by ` 1,500.

Prepare cost statement for the years 2009 & 2010. Find out the net profit for 2009, & 2010.

- (5) From the following information prepare a cost statement showing maximum possible break up of cost & total profit:

[MU T.Y.B.Com., Modified]

Sales for January 2010	30,00,000
Cost of goods sold	24,80,000
Administration expenses	1,80,000
Selling expenses	40,000
1.1.10	31.1.10

Raw material stock	3,20,000	4,00,000
Work-in-progress	3,20,000	4,80,000
Finished goods	4,20,000	3,40,000

Direct wages were 30% of prime cost

Raw materials consumed were 50% of prime cost

Direct expenses were 20% of prime cost

Factory overheads were 20% of prime cost.

- (6) The following particulars relating to the year 2008 are taken from the book & records of a chemical works manufacturing & selling a standardized mixture:

[CA Modified]

		Kgs.	Kgs.
Stock in 1-1-2009 opening	Raw Materials	2,000	2,000
	Finished Mixtures	500	1,750
	Factory Stores		7,250
	Raw Materials	1,60,000	1,80,000
Purchase	Factory Stores		24,250
	Finished Mixtures	1,53,050	9,18,000
Sale	Factory Scrap		8,170
Factory wages			1,78,650
Mixtures			
Power			30,400
Machinery depreciation			18,200
Salaries	Factory		72,220
	Office		37,220
	Selling		41,500
Expenses	Direct		18,500
	Office		18,200
	Selling		18,000
Interest on capital	Factory		7,000
	General		3,000
Advertising			1,40,000
Cash discount on sales			14,500
Bank Interest paid			1,250
Stock on 31-12-2009	Raw Materials	1,200	?
	Finished Mixtures	450	?
	Factory Stores		5,550

The wastage in raw material is normal. The purchase price of raw materials remained unchanged through 2009. The stock of finished mixture at the end of the year is to be valued at factory cost. Raw materials are consumed on FIFO basis. From the above information you are required to prepare a cost statement showing the prime cost, works cost & total cost of the mixture produced during the year.

- (7) The following figures are extracted from the Trial Balance of Gogetter Co. on 30th September, 2012.

[MU T.Y.B.Com Modified]

Particulars	₹
Inventories	
Finished goods	80,000
Raw Materials	1,40,000
Work-in-progress	2,00,000
Office Appliances	17,400
Plant & Machinery	4,60,500
Buildings	2,00,000
Sales	7,68,000
Sales Return & Rebates	14,000
Materials Purchased	3,20,000
Freight incurred on Materials	16,000
Purchase Returns	4,800
Direct Labour	1,60,000
Indirect Labour	18,000
Factory Supervision	10,000
Repairs & Unkeep – factory	14,000
Heat, Light, & Power	65,000
Rates & Taxes	6,300
Miscellaneous Factory Expenses	18,700
Sales Commission	33,600
Sales Travelling	11,000
Sales Promotion	22,500
Distribution Dept. Salaries & Expense	18,000
Office Expenses	8,600
Interest on Borrowed Funds	2,000

Further details are available as follows:

(i) Closing Inventories:

Finished Goods	1,15,000
Raw Materials	1,80,000
Work in progress	1,92,000

(ii) Accrued Expenses On:

Direct Labor	8,200
Indirect Labor	1,200
Interest on Borrowed Funds	2,000

(iii) Depreciation to be provided on: office Appliances 5%, plant & Machinery 10% Building 4%

(iv) Distribution of the following costs:

Heat, Light & power to Factory, Office & Distribution in the ratio 8:1:1.

Rates & Taxes two-third to factory & one-third to office

Depreciation on Building Factory, office & selling in the ratio 8:1:1

With the help of the above information you are required to prepare cost sheet for Gogetter Co. for the year ended 30th September, 2012.

- (8)** The accounts of a small manufacturer showed the following particulars for the year ending 31st March, 2010:

	₹
Materials Used	75,000
Productivity wages	60,000
Factory Overheads	13,500
Office overheads	7,425

For the quarter to end on 30th June, 2010 it is estimated that the materials would cost ₹ 25,000 & wages ₹ 7,500. The factory overheads will bear the same production to the prime cost & the office overheads will bear the same production to the prime cost as in the previous year. Prepare an estimated cost sheet. Also ascertain what cost as in the previous year. Prepare an estimated cost sheet. Also ascertain what price should be charged if the manufacturer wants to earn 25% profit on selling price.

- (9)** The following information is available from the books of a company producing luxury ceiling fans for the year ended 31-3-2010 Production & sales 1000 units.

[MU T.Y.B.Com Modified]

	₹		₹
Direct materials	2,00,000	Administration expenses	60,000
Direct wages	1,50,000	Selling expenses	45,000
Factory expenses	1,37,500	Sales	7,30,000

The following estimates have been made for 2010-2011:

- Production & sales will be 1,500 units.
- Materials prices per unit will increase by 25% but due to economy in consumption there will be saving of 12% with reference to the revised price.
- The wage rates per unit will increase by 20%
- Factory expenses ₹ 50, 000 are fixed. The remaining factory expenses will be in the same proportion to materials consumed & wages as in the previous year.
- The total administration expenses will increase by 66-2/3%
- Selling expenses will be ₹ 90,000.
- The profit desired is 20% on sales.

Prepare a cost statement maximum possible break-up of cost per unit & total cost, profit per unit & total profit for 2009-2010 & 2010-2011.

- (10) The following is the trading & profit & loss account of a manufacturing company for the quarter ended 30th June, 2009:

To opening stock		By Sale of finished goods	2,75,000
Raw materials 5,000		By Sale of factory scrap	5,000
Work-in-progress 10,000		By Income from Investments	10,000
Finished goods 25,000	40,000	By Closing stock	
To Purchase of raw		Raw material 15,000	
Materials	1,00,000	Work-in-progress 20,000	
To Wages (75% direct &		Finished goods 10,000	45,000
25% indirect)	60,000		
To Factory expenses	20,000		
To Administrative expense	15,000		
To Selling & distribution exps.	30,000		
To Interest	20,000		
To Income tax	25,000		
To Net Profit	25,000		
	3,35,000	3,35,000	

Finished goods costing ₹ 5,000 were used for free samples and those costing ₹ 10,000 were donated to a charitable institution, however, no accounting entries have been passed for the same. Further no accounting entry has been passed for the material costing ₹ 5,000 destroyed by fire while it was being worked in the factory. You are required to prepare a cost sheet.

- (11) A company produced two kinds of electric pumps XA and XB details of which are

	XA	XB
Pumps manufactured	25,000	12,000
Direct cost:	₹ 3,140	₹ 2,650
Materials	9,400	5,700
Wages	2,100	1,410
Power, etc.	14,640	9,760
Total		
Other costs		
Factory supervision, etc.	₹ 3,600	
Packing wages and expenses	400	
Management and selling expenses	4,400	

You are required to prepare a statement showing the cost of each kind of pump when ready for dispatch, taking the following into considerations.

- Factory supervision to be charged in proportion to direct costs.
- Packing expenses to be apportioned in the ratio that direct costs plus factory supervision costs of XA bear to similar costs of XB.
- Management and selling expenses to be charged in production to the pumps manufactured.

- (12) A manufacturer commenced production on 1st January, 2012 of a standard article in two grades A and B. Both are produced from the same raw material and are sold to wholesalers at a uniform price – Grade A at ₹ 150 per dozen and Grade B at ₹ 240 per dozen. Sale price are based on the following estimated figures:

[CIMA London Modified]

	Cost per Article	
	Grade A	Grade B
Direct material cost	1.50	3.00
Direct wages	5.00	7.00
Production overhead	2.50	3.50
Works cost	9.00	13.50
Selling and Distribution overhead	0.90	1.35
Total Cost	9.90	14.85

On making up accounts for year ended 31st December 2012, the following facts were ascertained:

Cost of Material Used	Grade A	Grade B
Direct wages	15,000	20,000
Product wages	38,250	76,500
Product overheads (Total) ₹ 68,125		
Selling & Distribution overhead (Total) ₹ 32,700		

During the year sales amounted to ₹ 1,05,000 in respect of Grade A articles and ₹ 1,80,000 in respect of Grade B articles, and stock on hand at 31st Dec, 2009, valued at work cost as per his costing were ₹ 5,400 of Grade A and ₹ 13,500 of Grade B.

From the information given above, you are required to prepare a statement of revised costing showing the cost per article sold during 2012.

- (13) The managing director of a small manufacturing concern consults you as to the minimum price at which he can sell the output of one of the departments of the company which is intended for mass production in future. The company's records show the following particulars for this department for the past year:

Production & Sales (100 Units)		Works overheads	7,000
Materials	13,000	Office overheads	2,800
Direct labor	7,000	Selling overheads	3,200
Direct charges	1,000	Profit	5,000

You ascertain that 40% of the works overheads fluctuate directly with production and 70% of the selling overheads fluctuate with sales. It is anticipated that the department would produce 500 units per annum and that direct labour charges per unit will be reduced by 20%. While fixed selling overheads charges are expected to show an increase of 25% but otherwise no changes are anticipated.

(14) The cost of manufacturing 5,000 units of a commodity comprises –

Materials	20,000	Fixed factory overhead	16,000
Direct labour	25,000	Variable factory overhead	4,000
Chargeable expenses	400		

For manufacturing every 1,000 extra units of the commodity the cost of production increases as follows:

Materials: Proportionately. Fixed factory overheads: ₹ 200 extra. Wages: 10% less than proportionately. Variable factory overheads 25% less than proportionately.

Chargeable Expenses: No extra cost whatsoever.

Calculate the estimate cost of producing 8,000 units of the commodity and show by how it would differ if a flat rate of factory overhead based on wages were charged.

(15) Electronics Ltd., furnish the following information for 10,000 TV valves manufactured during the year 2009.

[ICWA Modified]

Materials	90,000	Clerical salaries and Management expenses	33,500
Direct Wages	60,000	Selling expenses	5,500
Power and consumable stores	12,000	Sale proceeds of scrap	2,000
Factory indirect wages	15,000	Plant repairs, maintenance and depreciation	11,500
Lighting of factory	5,500		
Defective work (cost of rectification)	3,000		

The net selling price was ₹ 31.60 per unit sold and all units were sold.

As from 1st Jan 2010, the selling price was reduced to ₹ 31 per unit. It was estimated that production could be increased in 2010 by 50% due to spare capacity.

Rates for materials and direct wages will increase by 10%.

You are required to prepare:

- Cost sheet for the year 2009 showing various elements of cost unit and
- Estimated cost and profit statement for 2010.

Assuming that 15,000 units will be produced and sold during the year and factory overheads will be recovered as a percentage of direct wages and office and selling expenses as percentage of works cost.

(16) American Sprayers Ltd., manufactured and sold 1,000 sprayers during the year ended 31st March, 2010. The summarized accounts are set out below:

[CS Modified]

Manufacturing, Trading and Profit and Loss Account for the year ended 31-3-10.

	₹		₹
To cost of materials	80,000	By Sales	4,00,000
To Direct wages	1,20,000		
To manufacturing cost	50,000		
To Gross profit	1,50,000		
	₹ 4,00,000		₹ 4,00,000
To management and staff Salaries	60,000	By Gross Profit	1,50,000
To Rent rates & Insurance	10,000		
To Selling expenses	30,000		
To General expenses	20,000		
To Net Profit	30,000		
	1,50,000		1,50,000

For the year ending 31st March 2011, it is estimated that:

- (a) Output and sales will be 1,200 sprayers
 - (b) Price of materials will rise by 20% on the previous year's level
 - (c) Wages per unit will rise by 5%.
 - (d) Manufacturing cost will rise in proportion to the combined cost of materials and wages
 - (e) Other expenses will remain unaffected by the rise in output.
 - (f) Selling expenses per unit will remain unchanged
 - (i) Prepare a cost sheet for the year ending 31st March, 2010
 - (ii) Prepare an estimated cost sheet showing the price at which the sprayer should be sold so as to show a profit of 10% on the selling price.
- (17) Tidy Home Limited manufactures domestic vacuum cleaners. For the year ending 30th Sep. 2009, expenses incurred are as follows for an output of 1,000 units.

[CA Modified]

Raw material consumed	1,00,000
Direct wages	50,000
Factory overheads	80,000
Administrative overheads	23,000
Selling overheads (which are 10% of sales value)	35,000
Distribution overheads (for sale of 900 unit)	18,000

For the year 2009-10 following changes are expected:

- (i) Raw material prices are expected to rise by 10% but per unit consumption is expected to fall by 5%

- (ii) Direct wages may rise by 15% but productivity of labour may bring down the cost of wages per unit by 10%.
- (iii) Of the factory overheads, ₹ 30,000 are fixed cost and are expected to remain at the same level, but variable component thereof is likely to have the same relationship to wages, as it had for the year 2008-09.
- (iv) Administration overheads may rise by 20%.
- (v) Selling overheads as a percentage of sale value may remain at the same level, as for 2008-09.
- (vi) Distribution overheads per unit may remain the same.
- (vii) Output for the year 2009-10 is expected to be 1,500 units.

You are required to work out the total cost per vacuum cleaner for 2009-10 and the selling price at which it should be marketed in order to make of profit of 20% on sale value.

- (18) M/s Bata Shoe Co. manufacturers two types of shoes A and B. Production costs for the year ended 31st March, 2010 were:

[MU T.Y.B.Com., Modified]

Direct materials	₹ 15,00,000
Direct wages	8,40,000
Production overheads	3,60,000
	<u>₹ 27,00,000</u>

There was no work-in-progress at the beginning or at the end of the year. It is ascertained that:

- (a) Direct Materials in type A shoes consists twice as much as that in type B shoes.'
 - (b) The direct wages for type B shoes were 60% of those for type A shoes.
 - (c) Production overhead was the same per pair of A and B type.
 - (d) Administrative overheads for each type were 150% of direct wages.
 - (e) Production during the year were: Type A 40,000 pairs of which 36,000 were sold. Type B 1,20,000 pairs of which 1,00,000 were sold.
 - (f) Selling cost was ₹ 1.50 per pair.
 - (g) Selling price was ₹ 44 for type A and ₹ 28 per pair for type B.
- (19) X and Y shoe polish company Ltd. manufactures black and brown polish in one standard size of tin retailing at ₹ 1.08 and ₹ 1.20 respectively. The following data is supplied to you.

[CA Modified]

Direct Materials: Polish	7,38,000
Tins	2,88,000
Direct Wages	2,44,800
Production overheads	3,67,200
Administrative & selling overheads	1,22,400

Sales for the year were: Black 14,000,000 tins & Brown 6,00,000 tins. The opening & closing stock were:

	Black	Brown
Opening stock (Tins)	48,000	1,60,000
Closing stock (Tins)	1,08,000	60,000

The opening stock of the black & brown polish was valued at its production cost of paise 30.4 per tin & paise 86.4 per tin respectively. The cost of raw material for brown polish is 10% higher than that for black there is no difference in the cost of tins. Direct wages for brown are 8% higher than those for black polish & production overheads are considered to vary with direct wages. Administrative & selling overheads are absorbed at a uniform rate per tin of polish sold. Prepare a statement to show the cost & profit per tin of polish

(20) A Company manufactures a mixer which is sold for ` 1,200/-

[ICWA Modified]

- (a) Materials constituted at 45% of cost sales.
- (b) Labour constituted 40% of cost sales
- (c) Overhead expenses constituted 15% of cost of sales.
- (d) An increase of 15% in material cost & 10% in labour cost is expected.
- (e) The anticipated increased costs in relation to the present sales price would cause 35% decrease in the amount of the present gross profit.

If the only figure available are those given above, what must be the selling price to given the same percentage of gross profit as before?

(21) The cost structure of an article the selling price of which is ` 45,000 is as follows:

[CA Modified]

Direct Materials	50%	Direct Labour.....	20%
Overheads	30%		

An increase of 15% in the cost of material & of 25% in the cost of labour is anticipated. These increased costs in relation to the present selling would cause a 25% decrease in the amount of present profit per article.

You are required:

- (1) To prepare a statement of profit per article at present &
 - (2) The revised selling price to produce the same percentage of profit to sales as before.
- (22) A factory produces uniform type of articles & has a capacity of 8,000 units per week. The following information shows the different elements of cost for 3 consecutive weeks when the output has changed from week to week.

[CA Modified]

Units Produced	Direct materials `	Direct Labour	Factory overheads (partly Variable & partly fixed)
800	3,200	1,200	5,600
1,000	6,400	1,500	6,400
1,600	5,600	2,400	8,800

The factory has received an order for 2,400 units upon the selling price of which it wants a profit of 25%. Finds out what price per unit it should quote.

- (23) A factory can manufacture 10,000 units every month. The following data is furnished to you for the quarter ended 31st December, 2009:

[CS Modified]

Materials cost	` 5 per unit
Labour cost	` 4 per unit
Variable factory expenses	` 2 per unit

	October	November	December
Production (unit)	6,000	8,000	7,000
Factory overheads `	8,000	9,000	8,500

A commission agent introduced a prospective customer who wants to place an order for 10,000 units every month. You are asked to quote your price after considering the following:-

- (1) Administration overheads is 10% of works cost.
 - (2) Sales & distribution overheads is 12.5% of cost of production.
 - (3) The commission agent is to be paid Re. 1 per unit.
 - (4) The factory wants a profit of 20% on sales price.
- (24) A factory can produced 60,000 units p.a at 100% capacity. The estimated cost of production is as follows:

[CA Modified]

- Direct materials ` 3 per unit.
 Direct wages ` 2 per units
 Fixed cost p.a ` 1,50,000
 Variable expenses per unit ` 5
 Semi-variable expenses per annum.
- (a) Upto 50% of capacity ` 50,000
 - (b) ` 10,000 for every increase of 25% in capacity or part thereof.

The factory produces only against orders. If the production programme of the factory is as indicated below, what should be the selling price if it wants to earn a profit of ` 1,00,000 for the year? The production programme is :

- (a) For the first 3 months at 50% capacity.
 (b) For the next 9 months at 80% capacity.

(25) In respect of factory, the following figure have been obtained for the year 2009.

Cost of materials	₹ 6,00,000
Wages of Labour	5,00,000
Factory Overheads	3,00,000
Administration charges	3,36,000
Selling charges	2,24,000
Distribution charges	1,40,000
Profit	4,20,000

A work has been executed in 2010 & the following expenses have been incurred.

Materials	8,000
Wages	5,000

At what price should the product be sold? Factory overheads is based on direct labour & administration, selling & distribution overhead on factory cost. The same rate of profit on the selling price as in 2009 is required.

- (26) The present sales turnover of a factory is 1000 articles at ₹ 550 each. By reason of a price reduction of 9%, the size of order is expected to increase by 50%. The present cost structure of the factory is as follows:

Materials	40%
Variable wages & expenses	30%
Fixed overheads	15%
Profit	15%

Present the present & estimated cost sheet. Is it advisable for the company to go for a price reduction ?

- (27) The State Government granted license to Sweet Sugar Ltd., to manufacture & sell sugar with a stipulation that 40% of the output should be sold to the State Government at a controlled price of ₹ 3,000/- per ton & the balance output can be sold in the open market at any price. Following are the details of Sweet Sugar Ltd., for the year ended 31st March, 2010. During the year 3,600 tons of sugarcane was consumed @ 200 per ton.

Direct Expenses	₹ 4,20,000
Telephone Charges	3,52,695
Office computer purchased	2,75,350
Factory Rent & Insurance	3,54,760
Machinery purchased	4,25,560
Machinery Repairs	98,847
Commission on Sales	3,37,650

Factory Salaries	2,19,588
Carriages Outward	1,54,090
Packing Expenses	1,94,450
Bank Interest	1,65,895
Factory Electricity	2,61,880
Delivery Van Expenses	1,06,850
Coal Consumed	3,80,125
Depreciation on Machinery	2,49,600
Depreciation on Computer	2,04,180
Depreciation on Delivery Van	1,57,360
Office Salaries	1,89,325
Printing & Stationery	1,13,000

During the year 2,400 tons of sugar was produced. The Company's profit target for the year, for fixing the open market selling price on the basis of cost sheet, is 10% of its average paid-up capital of ₹ 1,42,56,000. Prepare cost sheet & find various components of total cost & per unit cost & suggest the selling price for open market.

- (28) Vaijanth Polymers manufactures & sells a typical brand of tiffin boxes under its own brand name the installed capacity of the plant is 1,20,000 units per year, distribution evenly over each month of calendar year. The Cost Accountants of the company has informed you about the cost structure of the product, which is as follows:

[ICWA Modified]

Raw Materials ₹ 20 per unit

Direct Labour ₹ 12 per unit

Direct Expenses ₹ 2 per unit

Variable Overheads ₹ 16 per unit

Fixed Overheads ₹ 16 per unit.

Fixed overheads for the year ₹ 3,00,000

Semi-variable Overheads are as follows:

(a) ₹ 7,500 per month upto 50% capacity &

(b) Additional ₹ 2,500 per month for every additional 25% capacity utilization or part thereof.

The plant was operating at 50% capacity during the first seven months of the calendar year 2009 & at 100% capacity in the remaining months of the year. The selling price for the period from 1st January 2009 to 31st July, 2009 was fixed at ₹ 69/- per unit. The firm has been monitoring the profitability & revising the selling price to meet its annual profit target of Rs.8 lacs. You are required to suggest the selling price per unit for the cost & also profit for the period:-

- (a) From 1st January 2009 to 31st July 2009
(b) From 1st August 2009 to 31st December 2009.

- (29) A manufacturer produces 8,000 units per month, split up cost & sales value of which is given below:

[ICWA London Modified]

	₹ (per Unit)
Direct Material	30
Direct Labour	20
Factory Expenses	
Fixed Overheads (₹ 2,00,000)	25
Variable Overheads	40
Selling & distribution Expenses	115
Fixed (₹ 80,000)	10
Variable	15
	140
General Administration (Fixed ₹ 2,40,000)	30
Margin of Profit	5
Selling price	175

Due to increase in demand & consequent extension of delivery dates & dissatisfaction among customers, the management decided to provide for an output of 12,000 units per month in the next year. Prepare a comparative cost statement showing anticipated margin of profit for the present output (of 8,000 units) & the proposed output (of 12,000 units). Assume that in the coming year there will be an all-round increase of 5% in the different items of expenses except fixed expense. Selling price can be increased by 2% in the coming year. Due to the proposed increase in output (if the proposal is adopted) there will be an increase of 25% in the Fixed Factory overheads 20% in Fixed selling & Distribution expenses & 10% in General administration.

- (30) The present sales turnover of a factory is 2000 articles at ₹ 500 each. By reason of a price reduction of 10% the size of order is expected to increase by 50%. The present cost structure of the factory is as follows.

[CIMA London Modified]

Materials	40%
Variable wages & expenses	30%
Fixed overheads	15%
Profit	15%
	<u>100%</u>

Present the present & estimated cost sheet. Is it advisable for the company to go for a price reduction?

Theory Questions

- (1) What is a cost sheet? What are the purposes of a cost sheet?
- (2) Give composition of a selling price.
- (3) Write short notes on
 - (a) Works Cost.
 - (b) Elements of Cost
- (4) “Fixed costs are variable per unit while variable costs are fixed per unit” Comment.
- (5) Define the term cost. What are the different elements of cost?

Objective Questions**(I) State whether the following statements are True or False.**

- (1) Cost of a product is decided as per cost attach concept.
- (2) Interest on capital is a non-cost item
- (3) Cost sheet shows total cost and cost per unit.
- (4) Prime cost includes factory overheads.
- (5) Cost of production includes selling overheads.
- (6) Carriage on material increases cost of materials.
- (7) Waste having realisable value is called as scrap.
- (8) Fixed cost remains constant irrespective of output.
- (9) Variable cost is also called as product cost.

[Ans. True: (1, 2, 3, 6, 7, 8, 9). False: (4, 5)]

(II) Match the following**Group A**

- (1) Interest on loan
- (2) Prime Cost
- (3) Cost of Production
- (4) Factory Cost
- (5) Profit

Group B

- (i) Direct Cost
- (ii) Factory Cost plus Office Overheads
- (iii) Prime Cost plus Factory Overheads
- (iv) Sales less Total Cost
- (v) Cost plus Profit
- (vi) Non-Cost Item

[Ans. (1 - vi), (2 - i), (3 - ii), (4 - iii), (5 - iv)]

(III) Multiple Choice Questions. Select the Right Answer.

- (1) Total cost includes
 - (i) Cost of production plus selling overheads
 - (ii) Direct cost
 - (iii) Indirect cost
- (2) Prime cost includes
 - (i) Direct material plus direct labour plus direct expenses
 - (ii) Direct material plus direct expenses
 - (iii) Direct cost plus indirect cost
- (3) Factory overheads includes
 - (i) Factory salary, depreciation of machine, fuel
 - (ii) Factory salary, rent of office, selling commission
 - (iii) Office overheads only
- (4) Stock is valued at
 - (i) Cost of production
 - (ii) Direct cost
 - (iii) Indirect cost
- (5) Selling price is equal to
 - (i) Total cost plus profit
 - (ii) Direct cost plus profit
 - (iii) Indirect cost plus profit

[Ans. (1 - i), (2 - i), (3 - i), (4 - i), (5 - i)]

HOME WORK

Q. 1. The following extracts of costing relate to commodity A for the year 31.3.2010.

Purchase of Raw Material	₹ 48,000
Direct wages	₹ 40,000
Stock on 1-4-2009	
Of Raw Material	₹ 8,000
Of Finished Goods 1,600 quintals	₹ 6,400
Stock on 31-3-2010	
Of Raw Material	₹ 6,800
Of Finished Goods 3,200 quintals	
Work on cost (factory overhead)	₹ 16,800
Work in Progress:	
1st April 2009	₹ 1,920
31st March 2010	₹ 6,400
Office and Administration Overheads	₹ 3,200
Sales (Finished Product)	₹ 1,20,000

Advertising discount allowed and selling cost is Re 0.40 per quintal. During the year 25,600 quintals of commodity were produced. Prepare Cost sheet.

Q. 2. Prepare a cost sheet showing the cost per ton of paper manufactured by Bhadrachalam Paper Mills in January 2010 under elements of cost.

Direct Materials:

- | | |
|-----------------------------------|---------------------------|
| (1) Paper Pulps | 1,000 tons @ ₹ 80 per ton |
| (2) Other Miscellaneous materials | 200 tons @ ₹ 50 per ton |

Direct Labour

- | | |
|-------------------------------|---------------|
| 220 Skilled men for 25 days | @ ₹ 6 per day |
| 110 unskilled men for 25 days | @ ₹ 4 per day |

Direct Expenses:

- | | |
|--------------------------------|----------|
| Special Equipment Hire charges | ₹ 10,000 |
| Specials Dyes | ₹ 5,000 |

Works Overheads:

- | | |
|------------------------------------|-----------------------------|
| Variable | @ 100 per cent on wages |
| Fixed @ 50 per cent on wages | |
| Administrative Overheads | @ 10 per cent works cost |
| Selling and Distribution Overheads | @ 20 per cent on works cost |
| Finished Paper Manufacturing | 1000 tons |
| Sales of Waste | ₹ 2,00 |
| Sales | ₹ 400 per ton |

Q.3. X Ltd., furnished you the following details to enable you to prepare cost sheet.

Production Overheads		₹ 80,000
Materials Purchase		₹ 5,00,000
Administrative Overheads		₹ 1,00,000
Inventory Details	Opening (Rupees)	Closing (Rupees)
Materials	1,50,000	1,20,000
Work in Progress	80,000	35,000
Finished Goods	2,04,000	?

The firm had stock of 12,000 units in opening inventory. It sold 64,000 units at ₹ 28.5 per unit. It has 8,000 units in its closing inventory. Labour cost incurred amounted to ₹ 3,85,000. The cost of sales amounted to ₹ 14,01,000.

Q.4. Electronic Ltd. Furnished the following information for 10,000 CTV tubes manufactured during the year 2009.

Materials ₹ 90,000; Direct wages ₹ 60,000; Power and Consumable stores ₹ 12,000; Factory indirect wages ₹ 15,000; Lighting of factory ₹ 5,500; Defective Work (Cost of Rectification) ₹ 3,000; Clerical Salaries and Management Expenses ₹ 33,500; Selling Expenses ₹ 5,500; Sales proceeds of scrap ₹ 2,000 and plant repairs and maintenance and depreciation ₹ 11,500.

The net selling price was ₹ 31.60 per unit sold and all unit were sold.

As from 1st January 2010 the selling price was reduced to ₹ 31 per unit. It was estimated that production could be increased in 2002 by 50% due to spare capacity. Rates for materials and direct wages will increase by 10%.

You are required to prepare:

- Cost sheet for the year 2009 showing various elements of cost per unit.
- Estimated Cost and Profit for 2010 assuming that 15,000 units will be produced during the year and factory overheads will be recovered as percentages of direct wages office and selling expenses as a percentage of works cost.

Q.5. A factory can produce 60,000 units per annum at its optimum (100%) capacity.

The estimated cost of production is as under:

Direct Materials	₹ 3 per unit
Direct Labour	₹ 2 per unit
Indirect Expenses:	
Fixed	₹ 1,50,000 per annum
Variable	₹ 5 per unit
Semi-variable	₹ 50,000 per annum upto 50% capacity
And an	extra expense of ₹ 10,000 for
Every 25% increase	capacity or part thereof.

The factory produces only against orders and not for own stock.

If the production programme of the factory is as indicate below and the average selling price at which each unit should be quoted.

First 3 months of the year 50% of capacity

Remaining 9 months 80% of capacity

Ignore selling. Distribution and administration overheads.

Q.6. X and Y shoes polish Company Ltd. Manufacturing black & brown polish in one standard size of tin retailing at Rs.1.08 & Rs.1.20 respectively.

Following data are supplied to you

Direct Materials	Rupees
Polish	7,38,000
Tins	2,88,000
Direct wages	2,44,000
Production overheads	3,67,200
Administrative and Selling Overheads	1,22,400

Sales for the year were black 14,40,000 tins and brown 6,00,000 tins. The opening and closing stock were:

	Black	Brown
Opening stock	1,08,000	1,60,000
Closing stock	48,000	60,000

The opening stock of black and brown polish was valued at its production cost of paise 80.4 per tin and paise 86.4 tins respectively. The cost of raw materials for Brown polish is 10% higher than that for there is no difference in the cost of tins. Direct wages for brown are 8% higher than those for black polish and production overheads are considered to vary with direct wages. Administrative and selling overheads is absorbed at a uniform rate per tin of polish sold.

Prepare a statement to show the cost and profit per tin of polish.

Q.7. A factory manufactures a uniform type of article and has a capacity of 4,000 units per week. The following information shows the different elements of cost for three consecutive weeks when the output has changed every week.

Unit Produced	Direct Materials (₹)	Direct Materials (₹)	Factory overheads (Partly variable & partly fixed)
2,000	12,000	6,000	12,500
2,800	16,800	8,400	16,500
3,700	22,200	11,100	21,000

The factory has received an order for 5000 units and it desires a profit of 16-2/3% on selling price. Find out the price at which each unit should be sold.

Q.8. The cost structure of an article, the selling price of which is rs 45000 is as follows:

Director Materials	50%
Director Labour	20%
Overheads	30%

An increase of 15% in the cost of materials and of 25% in the cost of labour is anticipated. These increased costs in relation to the present selling price would cause a 25% decrease in the amount of present profit per article per article.

You are required:

1. To prepare a statement of profit per article at present, and
2. The revised selling price to produce the same percentage of profit to sales as before.

Q.9. A company is manufacturing building bricks and fire bricks. Both the products require two processes; namely brick forming and heat treatment.

Time requirements for the two process are:

	Building Bricks	Fire bricks
Forming per 100 Brick	3 hrs	2 hrs
Heat Treatment	2 hrs	5 hrs

Total costs of the two department in one month were:

Forming	:	` 21,200
Heat Treatment	:	` 48,800

Production during the month was:

Building Bricks	:	1,30,000 units
Fire Bricks	:	70,000 units

Prepare a statement of manufacturing costs for the two varieties of bricks.

C C C