

**COST ACCOUNTING  
PROBLEMS  
UNIT I COST SHEET**

1. You are required to compile a statement showing cost and profit from the information given, showing clearly: a) Material consumed b) Prime cost c) Works cost d) Cost of production e) Cost of sales f) Profit and g) Sales

Materials purchased	Rs 2,00,000	Opening stock of materials	Rs 40,000
Wages	Rs 1,00,000	Closing stock of materials	Rs 60,000
Direct expenses	Rs 20,000		

Factory overhead is absorbed at 20% on wages. Administration overhead is 255 on the works cost. Selling and distribution overheads are 20% on the cost of production. Profit is 20% on sales.

2. Calculate prime cost, factory cost, cost of production, cost of sales and profit from the following particulars:

	Rs		Rs
Direct materials	1,00,000	Depreciation:	
Direct wages	30,000	Factory plant	500
Wages of foreman	2,500	Office premises	1,250
Electric power	500	Consumable stores	2,500
Lighting :		Managers salary	5,000
Factory	1,500	Directors fees	1,250
Office	500	Office stationery	500
Storekeepers wages	1,000	Telephone charges	125
Oil and water	500	Postage and telegrams	250
Rent:		Salesmen's salaries	1,250
Factory	5,000	Travelling expenses	500
Office	2,500	Advertising	1,250
Repairs and renewals:		Warehouse charges	500
Factory plant	3,500	Sales	1,89,500
Office premises	500	Carriage outward	375
Transfer to reserve	1,000	Income tax	10,000
Discount on shares written off	500		
Dividend	2,000		

3. During the year 2008, X ltd, produced 50,000 units of a product. The following were the expenses:

Stock of raw materials on 1.1.2008	Rs 10,000	Direct expenses	Rs 25,000
Stock of raw materials on 31.12.2008	Rs 20,000	Factory expenses	Rs 37,500
Purchases	Rs 1,60,000	Office expenses	Rs 62,500
Direct Wages	Rs 75,000	Selling expenses	Rs 25,000

You are required to prepare a cost sheet showing cost per unit and total cost at each stage.

4. A factory produces 100 units of a commodity. The cost of production is:  
Materials – Rs.10,000; Wages – Rs. 5,000; Direct expenses – Rs,1,000;  
Factory overheads are 125% on wages; office overheads are 20% on works cost. Expected profit is 25% on sales.

Calculate the price to be fixed per unit.

5. The following details have been obtained from the cost records of Raja Sekar Ltd.

Stock of raw materials on 1.12.2010	Rs 75,000	Depreciation of plant and machinery	Rs 3,500
Stock of raw materials on 31.12.2010	Rs 91,500	Expenses on purchases	Rs 1,500
Direct Wages	Rs 52,500	Carriage outwards	Rs 2,500
Indirect wages	Rs 2,750	Advertising	Rs 3,500
Sales	Rs 2,11,000	Office rent and taxes	Rs 2,500
Work-in-progress 1.12.2010	Rs 28,000	Travellers wages and commission	Rs 6,500
Work-in-progress 31.12.2010	Rs 35,000	Stock of finished goods (1.12.2010)	Rs 54,000
Purchases of raw materials	Rs 66,000	Stock of finished goods (31.12.2010)	Rs 31,000
Factory rent, rates and power	Rs 15,000		

Prepare a cost sheet giving the maximum possible break up of costs and profit.

6. M/s Indus Industries Ltd. Are the manufacturers of moonlight torches. The following data relate to manufacture of torches during the month of March 2009.

Raw materials consumed	Rs 20,000	Office overheads	20% of works cost
Direct Wages	Rs 12,000	Selling overheads	50 paise per unit
Machine hours worked	9500 hours	Units produced	20,000 units
Machine hour rate	Rs 2	Units sold	18,000 @Rs. 5 per unit

Prepare cost sheet showing the cost and the profit per unit and the total profit earned.

7. Following extract of costing information relates to a commodity for the year ended 31-12-2010.

Stock on 1.4.2009:		Rent, rates and taxes of works	Rs 10,000
Raw materials	Rs 5,000	Carriage inwards	Rs 360
Finished goods(1,000 tons)	Rs 4,000	Work-in-progress on 1.4.2009	Rs 1,200
Stock on 1.3.2010:		Work-in-progress on 31.3.2010	Rs 4,000
Raw materials	Rs 5,560	Sales of finished goods	Rs 75,000
Finished goods(2,000 tons)	Rs 8,000	Cost of factory supervision	Rs 2,000
Raw materials purchased	Rs 30,000		
Direct wages	Rs 25,000		

Advertisement and selling expenses amount to Re. 0.25 per ton sold. 16,000 tonnes were produced during the year.

Prepare statement showing a) the value of raw materials used; b) the cost of the output for the year; c) the cost of the turnover for the year; d) the net profit for the year and e) the net profit per ton of the commodity.

8. Prepare a cost sheet showing cost of production and profit from the following data.

	Opening	Closing
Stock of raw materials	75,000	78,750
Work-in-progress	24,600	27,300
Stock of finished goods	52,080	47,250

Purchases for the year	Rs 65,700	Selling & distribution expenses	Rs 12,630
Sales	Rs 2,16,930	Scrap sold	Rs 990
Direct wages	Rs 51,450	Office expenses	Rs 20,610
Works expenses	Rs 25,020		

9. The following data are available from the books of a factory:

Opening Stock:		Purchases of raw materials	40,000
Raw materials	16,000	Direct wages	32,000
Work-in-progress	6,000	Factory overheads	10,000
Closing stock:			
Raw materials	8,000		
Work-in-progress	10,000		

The following additional information is given to you:

Composition of opening work-in-progress:

Raw materials –	3,200
Direct wages –	2,000
Factory overheads –	800
Total –	6,000

Composition of closing work-in-progress:

Raw materials –	4,000
Direct wages –	5,400
Factory overheads –	600
Total –	10,000

You are required to ascertain factory cost.

10. In a factory two types of ceiling fans viz., Usha and Crompton are produced. Ascertain the cost and profit per unit sold from the particulars given below.

	Usha	Crompton
Materials	16,400	18,900
Wages	8,900	9,800

Works overhead are 60% of wages and office overheads are 20% on works cost. The selling expenses per fan sold is Rs. 2. The selling expenses of Usha and Crompton are Rs. 550 and Rs. 800 respectively. 80 fans of Usha and 100 fans of Crompton are sold. There is no opening or closing stock.

11. From the following details extracted from the trial balance of new era ltd. For the financial year ending 31.3.2010, you are require to prepare:

- a) A statement of cost showing various elements of cost in detail
- b) A separate statement of profit

Credit Balances	Rs	Debit Balances	Rs
Sales	8,00,000	Opening stock:	
Returns of materials	10,000	Raw material	30,000
Sale of scrap of raw material	8,000	WIP	40,000
		Finished goods	60,000
		Plant & Machinery	1,00,000
		Buildings	8,00,000
		Returns inwards	20,000
		Raw material purchased	2,00,000
		Carriage on material	10,000
		Direct Wages	1,20,000
		Indirect wages	40,000
		Factory expenses	30,000
		Sundry office expenses	83,000
		Power	50,000
		Indirect materials infactory	10,000
		Sundry factory expenses	20,000
		Selling expenses	60,000
		Distribution expenses	20,000
		Interest on bank loan	10,000
		<b>Additional Information</b>	
		a) Closing stock	
		Raw material	40,000
		WIP	25,000
		Finished goods	50,000
		b) Depreciation on plant & Machinery at 10% P.A	
		Depreciation on buildings (50% factory and 50% office) at 5% P.A	

12. The following information has been obtained from the records of Left Center Corporation for the period from January 1 to June 30, 2010.

	On January 1, 2010	On June 30, 2010
Cost of raw materials	30,000	25,000
Cost of work-in-progress	12,000	15,000
Cost of stock of finished goods	60,000	55,000
Transactions during six months are:		
Purchases of raw materials	4,50,000	
Wages paid	2,30,000	
Factory overheads	92,000	
Administration overheads	30,000	
Selling and distribution overheads	20,000	
Sales	9,00,000	

Prepare i) Cost sheet showing a) Materials consumed b) Prime cost c) Factory cost incurred and factory cost; and

ii) Income statement in Tradional form for the six months showing gross profit and net profit.

## TENDER AND QUOTATIONS

13. The following figures relate to the costing of a Tarpaulin manufactured in respect of a certain type of a sheet for a period of three months:

Stock of materials (1-1-2001)	11,000	Sales	2,87,100
Stock of materials (31-3-2001)	7,000	Indirect expenses	26,000
Productive wages	1,66,000	Completed stock (1-1-2001)	NIL
Materials purchased	1,23,000	Completed stock (31-3-2001)	58,000

The number of sheets manufactured during three months was 4,400 and the price is to be quoted for 1,296 sheets in order to realise the same percentage of profits as for the period under review, assuming no alteration in rates of wages and cost of materials.

Prepare a statement of cost for the manufacture of 4,400 sheets and quotation for 1,296 sheets.

14. The particulars of a factory for the year 2006 are given below:

Raw materials	3,00,000	Selling overhead	1,12,000
Direct wages	1,68,000	Distribution overhead	70,000
Works overhead	1,50,000	Net profit	1,10,000
Office overhead	1,68,000		

In 2007, the expenses incurred on the execution of a work order:

Raw materials - 12,000; wages – 7,000; Assuming that in 2007 works overhead went up 20% distribution overhead went down by 10% and selling and office overheads went up by 12 1/2 %, at what rate of price should the product be quoted so as to earn the rate of profit on the selling price same as in 2006?

15. On August 15, 1991 a manufacture Soman desired to quote for a contract for the supply of 500 radio sets. From the following details prepare a statement showing the price to be quoted to give the same percentage of net profit on turnover as was realised during 6 months ending on 30<sup>th</sup> June 1991:

Stock of materials as on 1 <sup>st</sup> Jan 1991	20,000	Indirect charges during 6 months	25,000
Stock of materials as on 30 <sup>th</sup> June 1991	25,000	Opening stock of completed sets	NIL
Purchase of materials during 6 months	1,50,000	Closing stock of completed sets	100
Factory wages during 6 months	1,20,000	Sales during 6 months	3,24,000

The number of radio sets manufactured during these six months was 1,450 sets including those sold and those stocked at the end of the period. The radios to be quoted are of uniform quality and size as were manufactured during the six months to 30<sup>th</sup> June, 1991. As from August 1, the cost of factory labour has gone up by 10%.

16. Cooling Ltd. Manufactured and sold 1,000 refrigerators in the year ending 31-12-1997. The summarised trading and profit & loss account is as follows:

	Rs		Rs
To cost of materials	80,000	By sales	4,00,000
To direct wages	1,20,000		
To other manufacturing costs	50,000		
To gross profit c/d	1,50,000		
	4,00,000		4,00,000
To management salaries	60,000	By gross profit B/d	
To rent, rates	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 31-12-98, it is estimated that:

- a) Output and sales will be 1,200 refrigerators.
- b) Price of materials will go up by 20% on the level of the previous year.
- c) Wages will increase by 5%.
- d) Manufacturing cost will rise in proportion to the combined cost of materials and wages.
- e) Selling costs per unit remain unchanged.
- f) Other expenses will also remain constant.

You are required to submit a statement to the board of directors showing the price at which the refrigerators should be sold so as to show a profit of 10% on selling price.

17. The accounts of Pleasant company Ltd., shows the following details for the year 1990:

Materials – 3,50,000; Labour – 2,70,000; Factory Overhead – 81,000; Administration overheads – 56,080;

It is estimated that Rs. 1,000 for materials and Rs. 700 for labour will be required for one unit of the finished product for quotation purpose.

Absorb factory overheads on the basis of labour and administration overheads on the basis of works cost.

A profit of 12.5% on selling price is required on quotation.

a) Prepare a cost sheet and

b) Prepare a statement of the selling price per unit of the finished product.

18. The cost of manufacturing 2,500 units of a commodity is as follows:

Materials – 40,000; wages – 50,000; direct expenses – 800; variable overheads – 8,000; fixed overheads – 32,000;

For manufacturing every 500 extra units of the commodity, the cost of production increases as follows:

Materials – Proportionately

Wages – 10% less than proportionately

Direct expenses – No extra cost

Fixed overheads – 400 extra

Variable overheads – 25% less than proportionately

Calculate the estimated cost of production of 4,000 units of the commodity.

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**Specimen of cost sheet**  
**Cost sheet of ---- for the month of January 2011**

Particulars	Total Cost		Cost per unit
	Rs.	Rs.	Rs.
Opening stock of raw materials		xxx	Xxx
Add: Purchase of raw materials		xxx	Xxx
Add: Carriage inwards		xxx	Xxx
Add: Other direct materials used		xxx	Xxx
Add: Taxes and duties on the material purchased		xxx	Xxx
		xxx	Xxx
Less: Closing stock of raw materials	xxx		
Less: Sale of unsuitable raw materials	xxx		
Less: Sale of scrap of raw materials	xxx	xxx	Xxx
<b>Cost of raw materials consumed</b>		xxx	Xxx
Direct labour	xxx		
Direct expenses or chargeable expenses	xxx	xxx	Xxx
<b>Prime cost</b>		xxx	Xxx
<i>Add: Works Overhead</i>			
Indirect materials	xxx		
Indirect wages	xxx		
Factory rent and rates	xxx		
Factory lighting and heating	xxx		
Power and fuel	xxx		
Repairs and maintenance	xxx		
Drawing office expenses	xxx		
Depreciation of plant and machinery	xxx		
Factory stationery	xxx		
Insurance of factory	xxx		
Factory/works managers salary	xxx		
Water consumption in factory	xxx		
<i>Total works overhead</i>		Xxx	Xxx
		xxx	Xxx
Add: opening work-in-progress		Xxx	Xxx
		Xxx	Xxx
Less: Closing work-in-progress		Xxx	Xxx
<b>Works cost/Factory cost/Manufacturing cost</b>		Xxx	Xxx
<i>Add: Office or Administration overheads</i>			
Office rent and taxes	Xxx		
Office lighting	Xxx		
Office stationery	Xxx		
Office furniture depreciation and repairs	Xxx		
Office salaries	Xxx		
Legal expenses	Xxx		
Bank commission	Xxx		
Telephone and postages	Xxx		
Office cleaning	Xxx		
<i>Total administration overhead</i>		Xxx	Xxx
<b>Cost of Production</b>		Xxx	Xxx
Add: Opening stock of finished goods		Xxx	Xxx
		Xxx	Xxx
Less: Closing stock of finished goods		Xxx	Xxx
<b>Cost of production of goods sold</b>		Xxx	Xxx
<i>Add: Selling and Distribution overheads</i>			
Salesmen's salaries	Xxx		

Salesmen's commission	Xxx		
Showroom rent	Xxx		
Showroom expenses	Xxx		
Advertisement	Xxx		
Sales office rent	Xxx		
Travelling expenses	Xxx		
Warehouse rent and rates	Xxx		
Warehouse staff salaries	Xxx		
Repairs and depreciation of delivery vans	Xxx		
Carriage outward	xxx		
<i>Total selling &amp; distribution overhead</i>		Xxx	Xxx
<b>Cost of sales</b>		Xxx	
Profit/Loss		Xxx	
<b>Sales</b>		xxx	

### Tender and Quotations

A) Direct material and direct labour cost are generally estimated on the basis of cost per unit of preceding period, subject to fluctuations in the market price of materials and labour rates.

B) Overhead is estimated on the basis of past experience as a percentage as given below:

1. Percentage of factory overheads to direct wages  

$$= (\text{Factory overheads} / \text{Direct wages}) * 100$$
2. Percentage of office overheads to works cost  

$$= (\text{Office overheads} / \text{Works cost}) * 100$$
3. Percentage of selling and distribution overheads to works cost  

$$= (\text{Selling and distribution overheads} / \text{Works cost}) * 100$$

Or

The percentage may be calculated on cost of production

$$= (\text{Selling and distribution overheads} / \text{Cost of production}) * 100$$

C) Estimation of profit for a tender or quotation

$$\text{Profit} = \text{Cost of sales} \times (\text{Percentage of profit} / 100)$$

If profit is to be ascertained as a percentage of selling price of the tender, the profit is to be calculated as given below:

$$\text{Profit} = (\text{Cost of sales} \times \text{Rate of profit on sales}) / (100 - \text{Rate percentage on sales})$$

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