

Manufacturing Accounts

Purpose of Manufacturing Accounts

Manufacturing accounts are used in order to find out the cost of manufacturing a product. When we find the unit cost of production we can make decisions on:

- The selling price to cover costs plus profit
- Which cost elements can be reduced to lower the cost per unit
- Whether to remain in production or buy the goods from outside sources

There are two basic elements in the cost of manufacturing:

1. Prime cost
2. Factory overhead expenses

Prime Cost

Prime cost is made up of direct materials, direct labour and direct expenses:

- **Direct Materials:** The cost of the raw materials plus any cost involved in getting them to the factory floor, e.g. carriage in or customs duties.
- **Direct Labour:** The cost of labour directly related to the manufacturing process i.e. manufacturing wages.
- **Direct Expenses:** Expenses directly related to product manufacturing e.g. royalties for the use of a process or the hire of special machines for the manufacturing process.

Factory Overhead Expenses

These are indirect manufacturing costs which cannot be easily traced to the product. They include the following:

- **Indirect Labour:** The cost of employing storekeepers, supervisors and other staff not involved directly in the manufacturing process.
- **Depreciation:** On fixed assets such as factory buildings, factory plant and machinery, fork lift trucks etc.
- **Indirect Expenses/Overheads:** Some examples of these include, factory rent, rates, heat, light, insurance and repairs.

Prime Cost = Direct materials + Direct Labour + Direct EXPENSES

Cost of Manufacture = Prime Cost + Indirect Labour + Indirect Expenses + Indirect Losses

Work In Progress

Work in progress is goods that are only partially complete at the beginning or end of the accounting period. It is an opening or closing stock of partly completed goods.

- Add (value of) work in progress at the beginning of the period
- Deduct (value of) work in progress at the end of the period

WIP is usually valued at cost of manufacture stage i.e. after factory overheads.

Scrap Materials

When manufacturing goods, there are nearly always by-products or scrap materials. These materials when sold reduce the overall cost of manufacture. We should deduct these sales from the manufacturing costs.

Market Value of Manufactured Goods

This is the amount the firm would pay for the goods if they were purchased from another manufacturer. By comparing this figure with the cost of manufacture, a firm is able to find out whether it is profitable for it to continue manufacturing. By using the current market value a firm can easily establish the **profit from manufacture** and the **profit from trading**.

Unit Cost of Production

- This is the cost of producing a single product
- It is the cost of production/manufacture divided by the number of units produced
- It is calculated so that a company can compare the cost of manufacturing a product with the alternative of buying from the outside
- It is also calculated to set a selling price

Bookkeeping

If a firm is involved in production or manufacturing, then a manufacturing account needs to be prepared at the end of the year in order to find the cost of manufacture and or the manufacturing profit we:

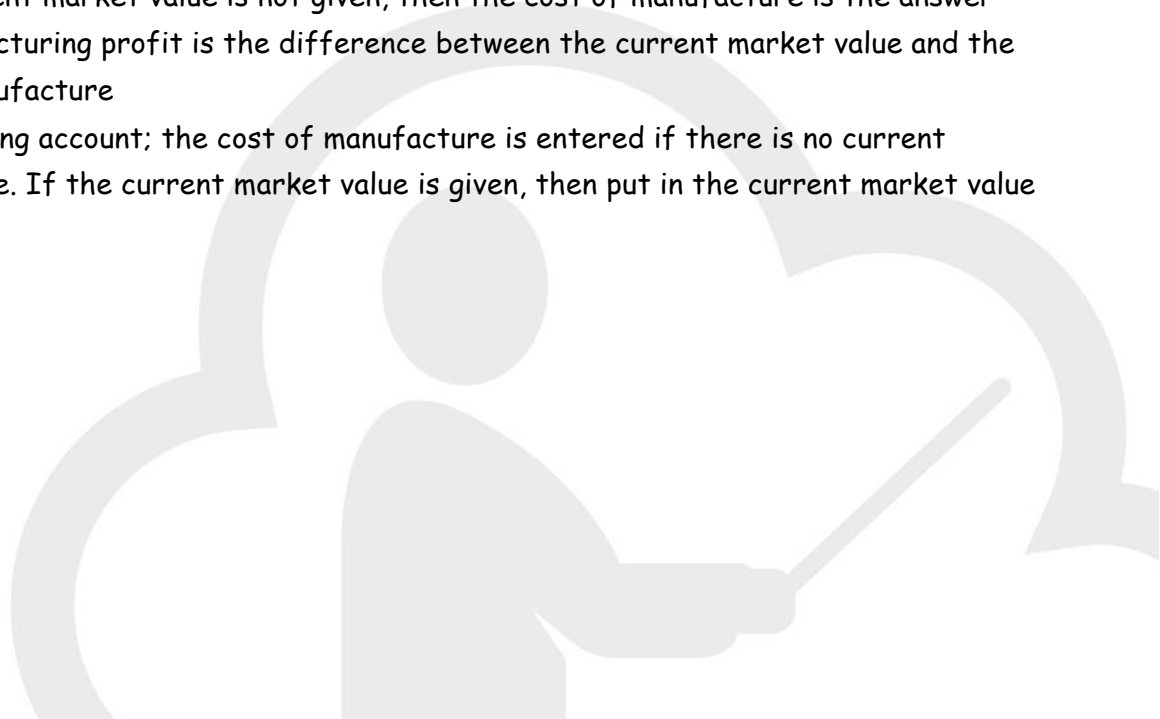
- First, we calculate the cost of raw materials consumed (opening stock + purchases - closing stock)
- Second we add direct costs (direct wages, other direct costs, hire of special equipment) to cost of raw materials consumed to find the **prime cost**
- Third, we add factory overheads (indirect factory expenses, supervisors wages, depreciation of factory buildings) to the prime cost
- Fourth , add opening stock of work in progress and subtract closing stock of work in progress
- Fifth we subtract sale of scrap materials to find the **cost of manufacture**



Manufacturing Account of X Ltd for the year ended 31/12/XX			
Raw Materials			
Opening stock of raw materials			X
Purchases of raw materials		X	
Less returns out		X	
			X
Carriage Inwards			X
			X
Less Closing stock of raw materials			(X)
Cost of raw materials used			X
Add Direct Costs			
Manufacturing wages		X	
Hire of special machines		X	
Royalties		X	X
Prime Cost			X
Add Indirect Costs (Factory Overheads)			
Supervisors salary	X		
Factory rent and rates	X		
Factory insurance	X		
Dep. Of factory buildings	X		
Dep. Of factory equipment	X		X
Add Work In Progress at start			X
			X
Less Work In Progress at End			X
			X
Less Sale of Scrap (if any)			(X)
Cost of Manufacture			X
Manufacturing Profit/Loss			X
Current market value			X

Remember:

- If the current market value is not given, then the cost of manufacture is the answer
- The manufacturing profit is the difference between the current market value and the cost of manufacture
- In the trading account; the cost of manufacture is entered if there is no current market value. If the current market value is given, then put in the current market value



Let's take a look at an example:

Q10.1

The following balances were extracted from the books of James Ltd on 31/12/2012:

Factory buildings (cost €400,000)	€380,000	
Office equipment (cost €20,000)	€15,000	
Plant and machinery (cost €100,000)	€70,000	
Goodwill	€10,000	
Purchases of raw materials	€260,000	
Factory insurance	€16,000	
General expenses	€22,000	
Factory wages	€80,000	
Carriage out	€12,000	
Returns out		€4,000
Sales		€650,000
Stocks 1/1/2013		
Raw materials	€20,000	
Work In Progress	€10,000	
Finished goods	€30,000	
Showroom expenses	€6,000	
Discount		€3,000
Sale of scrap materials		€6,000
Profit and loss balance 1/1/2012		€41,000
Advertising	€23,000	
Directors fees	€40,000	
Stationery	€2,000	
Debtors and creditors	€88,000	€30,000
10% Debentures issues on 1/4/2012		€40,000
VAT		€10,000
Bank	€60,000	
Share capital		
Authorised - 400,000 ordinary shares @ €1		
Issued - 360,000 ordinary shares @ €1		€360,000
	<u>€1,144,000</u>	<u>€1,144,000</u>

You are given the following additional information:

- Stock at 31/12/2012:
 - Raw materials €25,000
 - Work in progress €8,000
 - Finished goods €39,000
- Advertising is for year ended 31/6/2013
- Factory wages are to be divided: 80% direct wages and 20% supervisor's wages
- Provision should be made for debenture interest due
- Finished goods are to be transferred at current market value of €500,000
- Depreciation is to be provided:
 - Factory buildings 2% of cost
 - Plant and machinery 10% of cost
 - Office equipment 10% of book value

You are asked to prepare:

- a) A manufacturing account for the year ended 31/12/2012
- b) A trading, profit and loss account for the year ended 31/12/2012
- c) A balance sheet as at 31/12/2012



Manufacturing Account of James Ltd for the year ended 31/12/2012			
Direct Materials			
Opening stock of raw materials			€ 20,000.00
Purchase of raw materials	€ 260,000.00		
Less Returns out	€ 4,000.00	€ 256,000.00	
			€ 276,000.00
Less Closing stock of raw materials			€ 25,000.00
Cost of raw materials used			€ 251,000.00
Add Direct Costs			
Manufacturing wages			€ 64,000.00
Prime Cost			€ 315,000.00
Add Indirect Costs			
Supervisors salary	€ 16,000.00		
Factory insurance	€ 16,000.00		
Dep. Of factory buildings	€ 8,000.00		
Dep. Of plant and machinery	€ 10,000.00	€ 50,000.00	
			€ 365,000.00
Add work in progress at start			€ 10,000.00
			€ 375,000.00
Less work in progresas at end			€ 8,000.00
			€ 367,000.00
Less sale of scrap			€ 6,000.00
Cost of Manufacture			€ 361,000.00
Manufacturing profit			€ 139,000.00
Current market value			€ 500,000.00



Trading and Profit and Loss Account of James Ltd for the year ended 31/12/2012

Sales			€ 650,000.00
Less Cost of Sales			
Opening stock of finished goods		€ 30,000.00	
Add Current market value		€ 500,000.00	
		€ 530,000.00	
Less Closing stock of finished goods		€ 39,000.00	
Cost of Sales			€ 491,000.00
Gross Profit			€ 159,000.00
Add Manufacturing profit			€ 139,000.00
			€ 298,000.00
Less Expenses	Administ rat ion	Sell/ Dist ribut ion	
Carriage out		€ 12,000.00	
General expenses	€ 22,000.00		
Advert ising (€23,000 - €11,500)		€ 11,500.00	
Direct ors fees	€ 40,000.00		
Showroom expenses		€ 6,000.00	
St at ionery	€ 2,000.00		
Dep. On office equipment	€ 1,500.00		
	€ 65,500.00	€ 29,500.00	€ 95,000.00
			€ 203,000.00
Discount received			€ 3,000.00
Operat ing profit			€ 206,000.00
Less debent ure interest			€ 3,000.00
Net Profit			€ 203,000.00
Add profit and loss at 1/1/2012			€ 41,000.00
Profit and loss at 31/12/2012			€ 244,000.00



Balance Sheet of James Ltd as at 31/12/2012

Intangible Assets				
Goodwill				€ 10,000.00
Fixed Assets				
	Cost	Dep.	Book Value	
Factory buildings	€ 400,000.00	€ 28,000.00	€ 372,000.00	
Plant and machinery	€ 100,000.00	€ 40,000.00	€ 60,000.00	
Office equipment	€ 20,000.00	€ 6,500.00	€ 13,500.00	
	€ 520,000.00	€ 74,500.00	€ 445,500.00	€ 445,500.00
				€ 455,500.00
Current Assets				
Closing stock				
Raw materials		€ 25,000.00		
Work in progress		€ 8,000.00		
Finished goods		€ 39,000.00		
		€ 72,000.00		
Debtors		€ 88,000.00		
Bank		€ 60,000.00		
Advertising prepaid		€ 11,500.00		
			€ 231,500.00	
Less Creditors: amounts due less than 1 year				
Creditors		€ 30,000.00		
VAT		€ 10,000.00		
Loan interest due		€ 3,000.00	€ 43,000.00	
Working Capital				€ 188,500.00
Total net assets				€ 644,000.00
Financed By:				
Creditors: amounts due longer than 1 year				
10% debentures				€ 40,000.00
Share Capital				
		Authorised	Issued	
Ordinary share capital		€ 400,000.00	€ 360,000.00	
Profit/loss at 31/12			€ 244,000.00	
Shareholders funds				€ 604,000.00
Capital Employed				€ 644,000.00



Q 10.2

The following figures were taken from the books of Pearson Ltd on 31/12/2012.

Factory buildings (cost € 200,000)	€152,000	
Machinery (cost €100,000)	€56,000	
Trade debtors and creditors	€25,000	€19,000
Capital		€102,000
Stock at 1/1/2012		
Raw materials	€40,000	
Work in progress	€5,000	
Finished goods	€20,000	
Purchase of raw materials	€260,000	
Manufacturing wages	€80,000	
Hire of special machines	€10,000	
Carriage on raw materials	€15,000	
Factory managers salary	€30,000	
Factory rent and rates	€3,000	
Purchases and sales of finished goods	€35,000	€700,000
Office salaries	€27,000	
Telephone	€3,000	
Stationery	€2,000	
Sales staff salaries	€36,000	
Sales staff commission	€7,000	
Bank charges	€1,000	
Advertising	€4,000	
Office rent	€6,000	
Office insurance	€4,000	
	<u>€821,000</u>	<u>€821,000</u>

You are given the following additional information:

- Stocks at 31/12/2012:
 - Raw materials, €35,000
 - Work in progress, €7,000
 - Finished goods, €18,000

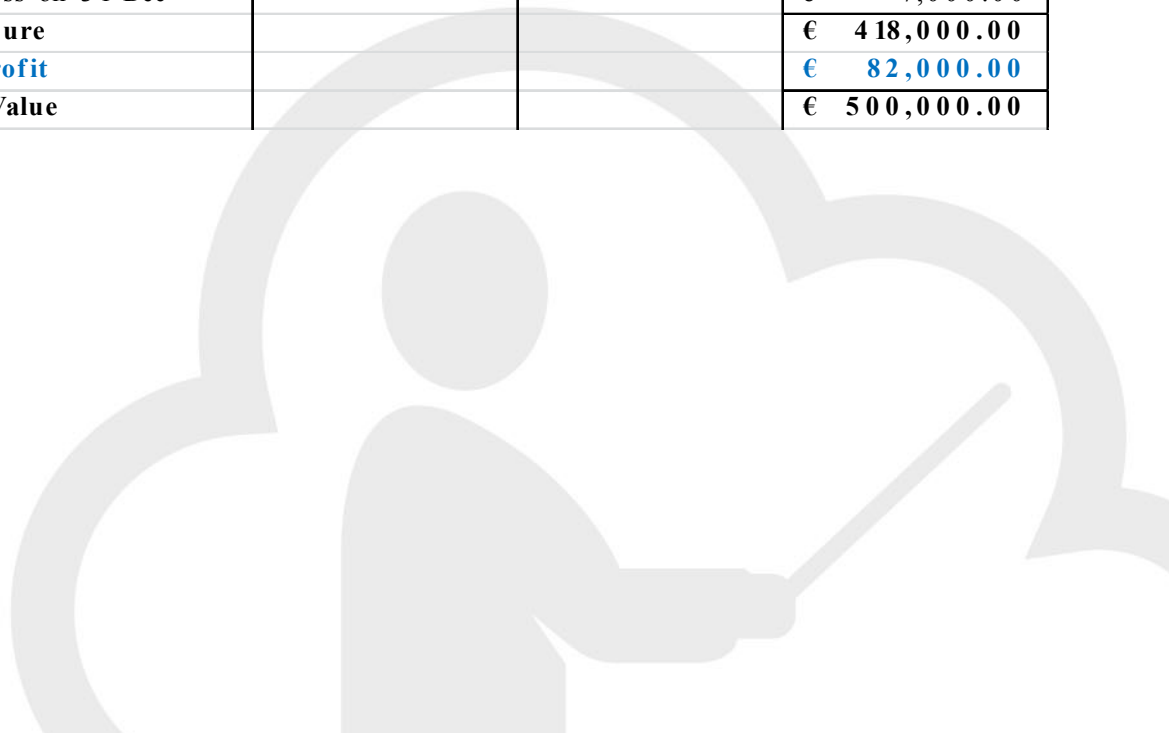
- Goods are transferred to trading account at current market value of €500,000

- Depreciate:
 - Factory buildings by €12,000
 - Machinery by €5,000
- 20,000 units were produced during the year

You are asked to prepare:

- a) A manufacturing account for the year ended 31/12/2012
- b) A trading, profit and loss account for the year ended 31/12/2012
- c) A balance sheet as at 31/12/2012

Manufacturing Account of Pearson Ltd for the year ended 31/12/2012			
Direct Materials			
Stock of raw materials 1 January	€	40,000.00	
Purchase of raw materials	€	260,000.00	
Carriage in on raw materials	€	15,000.00	
		€	315,000.00
Less stock of raw materials at 31 Dec	€	35,000.00	
Cost of raw materials used			€ 280,000.00
Add Direct Costs			
Manufacturing wages	€	80,000.00	
Hire of special machines	€	10,000.00	€ 90,000.00
Prime Cost			€ 370,000.00
Add Indirect Costs			
Factory managers salary	€	30,000.00	
Factory rent and rates	€	3,000.00	
Depreciation			
Factory building	€	12,000.00	
Machinery	€	5,000.00	€ 50,000.00
			€ 420,000.00
Add work in progress at 1 January			€ 5,000.00
			€ 425,000.00
Less work in progress on 31 Dec			€ 7,000.00
Cost of Manufacture			€ 418,000.00
Manufacturing Profit			€ 82,000.00
Current Market Value			€ 500,000.00



Trading and Profit and Loss Account of Pearson Ltd for year ended 31/12/2012			
Sales			€ 700,000.00
Less Cost of Sales			
Opening stock of finished goods		€ 20,000.00	
Add current market value		€ 500,000.00	
Add purchases: finished goods		€ 35,000.00	
		€ 555,000.00	
Less closing stock of finished goods		€ 18,000.00	€ 537,000.00
Gross Profit			€ 163,000.00
Add manufacturin profit			€ 82,000.00
			€ 245,000.00
Less Expenses	Administ ration	Sell/ Dist	
Office rent	€ 6,000.00		
Insurance	€ 4,000.00		
Office salaries	€ 27,000.00		
Telephone	€ 3,000.00		
St at ionery	€ 2,000.00		
Bank charges	€ 1,000.00		
Sales st aff salaries		€ 36,000.00	
Sales st aff commission		€ 7,000.00	
Advert ising		€ 4,000.00	
	€ 43,000.00	€ 47,000.00	€ 90,000.00
Net Profit			€ 155,000.00

Balance Sheet as at 31/12/2012				
Fixed Assets	Cost	Dep.	Book Value	
Fact ory buildings	€ 200,000.00	€ 60,000.00	€ 140,000.00	
Machinery	€ 100,000.00	€ 49,000.00	€ 51,000.00	
	€ 300,000.00	€ 109,000.00	€ 191,000.00	€ 191,000.00
Current Assets				
St ock				
Raw materials		€ 35,000.00		
Work in progress		€ 7,000.00		
Finished goods		€ 18,000.00		
		€ 60,000.00		
Debt ors		€ 25,000.00		
			€ 85,000.00	
Less Current Liabilities				
Credit ors		€ 19,000.00	€ 19,000.00	
Working Capital				€ 66,000.00
Total Net Assets				€ 257,000.00
Financed By:				
Capit al				€ 102,000.00
Add net profit				€ 155,000.00
Capital Employed				€ 257,000.00