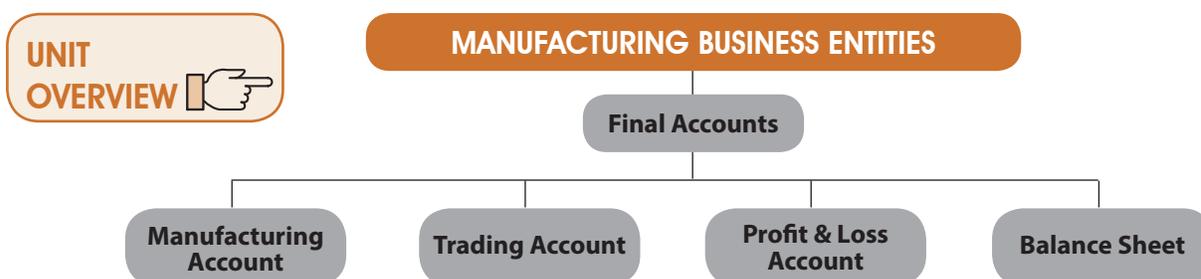


UNIT 2 : FINAL ACCOUNTS OF MANUFACTURING ENTITIES

LEARNING OUTCOMES

After studying this unit, you will be able to:

- ◆ Understand the purpose of preparing Manufacturing Account.
- ◆ Learn the items to be included in the Manufacturing Account
- ◆ Draw Manufacturing accounts of Manufacturing entities



2.1 INTRODUCTION

The manufacturing entities generally prepare a separate Manufacturing Account as a part of Final accounts in addition to Trading Account, Profit and Loss Account and Balance Sheet. The objective of preparing Manufacturing Account is to determine manufacturing costs of finished goods for assessing the cost effectiveness of manufacturing activities. Manufacturing costs of finished goods are then transferred from the Manufacturing Account to Trading Account.

- (a) Trading account shows Gross Profit while Manufacturing Account shows cost of goods sold which includes direct expenses.
- (b) Manufacturing account deals with the raw material, and work in progress while the trading account would deal with finished goods only.

2.2 PURPOSE

A manufacturing account serves the following functions:

- (1) It shows the total cost of manufacturing the finished products and sets out in detail, with appropriate

classifications, the constituent elements of such cost. It is, therefore, debited with the cost of materials, manufacturing wages and expenses incurred directly or indirectly on manufacture.

- (2) It provides details of factory cost and facilitates reconciliation of financial books with cost records and also serves as a basis of comparison of manufacturing operations from year to year.
- (3) The Manufacturing Account may also be used for various other purposes. For example, if the output is carried to the Trading Account at market prices, it discloses the profit or loss on manufacture. Similarly, it may also be used to fix the amount of production of profit sharing bonus when such schemes are in force.

2.3 MANUFACTURING COSTS

Manufacturing costs are classified into :

+ Raw Material Consumed	.....
+ Direct Manufacturing Wages	.....
+ Direct Manufacturing Expenses	.....
+ Direct Manufacturing Cost	.....
+ Indirect Manufacturing expenses or + Manufacturing Overhead	.....
Total Manufacturing Cost	<u>.....</u>

Raw Material consumed is arrived at after adjustment of opening and closing Inventory of raw materials:

$$\text{Raw Material Consumed} = \text{Opening inventory of Raw Materials} + \text{Purchases} - \text{Closing inventory of Raw Materials}$$

If there remain unfinished goods at the beginning and at the end of the accounting period, cost of such unfinished goods (also termed as Work-In-Process) is shown in the Manufacturing Account –

Opening inventory of Work-in-Process is posted to the debit of the Manufacturing Account and closing inventory of Work-in-Process is posted to the credit of the Manufacturing Account.

Direct Manufacturing Expenses

Direct manufacturing expenses are costs, other than material or wages, which are incurred for a specific product or saleable service.

Examples of direct manufacturing expenses are (i) Royalties for using license or technology if based on units produced, (ii) Hire charge of the plant and machinery used on hire, if based on units produced, etc.

When royalty or hire charges are based on units produced, these expenses directly vary with production.

ILLUSTRATION 1

1,00,000 units were produced in a factory. Per unit material cost was ₹10 and per unit labour cost was ₹5. That apart it was agreed to pay royalty @ ₹ 3 per unit to the Japanese collaborator who supplied technology.

Required

Calculate Manufacturing Cost.

 **SOLUTION**

In this case Manufacturing Cost comprises of –

Raw Material consumed	(1,00,000 × ₹ 10)	₹ 10,00,000
Direct Wages	(1,00,000 × ₹ 5)	₹ 5,00,000
Direct Expenses	(1,00,000 × ₹ 3)	₹ 3,00,000
		₹ 18,00,000

INDIRECT MANUFACTURING EXPENSES OR OVERHEAD EXPENSES

These are also called Manufacturing overhead, Production overhead, Works overhead, etc. Overhead is defined as total cost of indirect material, indirect wages and indirect expenses.

$$\text{Overhead} = \text{Indirect Material} + \text{Indirect Wages} + \text{Indirect Expenses}$$

Indirect material means materials which cannot be linked directly with the units produced, for example, stores consumed for repair and maintenance work, small tools, fuel and lubricating oil, etc.

Indirect wages are those which cannot be directly linked to the units produced, for example, wages for maintenance works, holding pay, etc.

Indirect expenses are those which cannot be directly linked to the units produced, for example, training expenses, depreciation of plant and machinery, depreciation of factory shed, insurance premium for plant and machinery, factory shed, etc.

Accordingly, indirect manufacturing expenses comprise indirect material, indirect wages and indirect expenses of the manufacturing division.

BY-PRODUCTS

In most manufacturing operations, the production of the main product is accompanied by the production of a subsidiary product which has a value on sale. For example, the production of hydrogenated vegetable oil is accompanied by the production of oxygen gas and the production of steel yields scrap. The subsidiary product is termed as a by-product because its production is not consciously undertaken but results out of the production of the main product. It is usually very difficult to ascertain the cost of the product. Moreover, its value usually forms a very small percentage of the main product.

By-product is a secondary product. This is produced from the same raw materials, which are used for producing the main product and without incurring any additional expenses from the same production process in which the main product is produced. Some examples of by-product are given below:

- (i) Molasses is the by-product in sugar manufacturing;
- (ii) Butter milk is the by-product of a dairy which produces butter and cheese, etc.

By-products generally have insignificant value as compared to the value of main product. They are **generally valued at net realizable value**, if their costs cannot be separately identified. It is often treated, as "Miscellaneous income" but the correct treatment would be to credit the sale value of the by-product to Manufacturing Account so as to reduce to that extent, the cost of manufacture of main product.

2.4 DESIGN OF A MANUFACTURING ACCOUNT

There is no standardized design for the presentation of a Manufacturing Account. Given below is a format covering various elements:

Manufacturing Account

Particulars	Units	Amount ₹	Particulars	Units	Amount ₹
To Raw Material Consumed:			By By-products at net realizable value		
Opening inventory	...		By Closing Work-in- Process		
Add: Purchases		By Trading A/c		
Less: Closing inventory	Cost of production		
To Direct Wages				
To Direct expenses:				
Prime cost				
To Factory overheads:					
Royalty				
Hire charges				
To Indirect expenses:				
Repairs & Maintenance				
Depreciation			
Factory cost				
To Opening Work-in-process				

Tutorial Note: Frequently, problems are set, in which all the ledger balances are not given. Instead, details are given regarding the number of items in Inventories, quantity manufactured etc. the figures for Inventories, sales etc., would therefore have to be worked out independently from the data given.

The following general rules may be observed.

- (a) The Manufacturing Account should have columns showing the quantities and values. Frequently, all the quantities are not given and the quantities applicable to one or more of the items would have to be worked out. For example, if the question does not state the total number of items sold, the quantity can be worked out by adding opening inventory and units manufactured and deducting closing inventory. It is, therefore, useful to have quantity columns in the account so that it can be seen that both sides balance.
- (b) The Manufacturing Account will show the quantity of raw materials in inventory at the beginning and at the end of the year and the purchases during the year. As regards finished goods, it will only show the quantity manufactured and, as regards work-in-progress, the opening and closing amounts.
- (c) The Trading Account will show the quantities of finished goods manufactured and sold and the opening and closing inventory. It will not show the quantity of raw materials or work-in-progress.
- (d) For determining the value of closing inventory, in the absence of specific instruction to the contrary, it must be assumed that sales have been on "first in-first out" basis, that is, the closing inventory consists as far as possible of goods produced during the year, the opening inventory being sold out.

It may be mentioned here that nowadays no manufacturing business entity prepares manufacturing account as part of its final set of accounts. Even the items of manufacturing account are shown either in trading account (in case of non-corporate entities) or in Statement of profit and loss (in case of corporate entities).

The procedure of preparation of Trading Account, Profit and Loss Account and Balance Sheet have already been explained in Unit 1 of this chapter. Students should refer the earlier unit for attempting the problems based on the preparation of complete set of final accounts of a sole proprietor.

 **ILLUSTRATION 2**

Mr. Vimal runs a factory which produces soaps. Following details were available in respect of his manufacturing activities for the year ended on 31.3.2016:

	₹
Opening Work-in-Process (10,000 units)	16,000
Closing Work-in-Process (12,000 units)	20,000
Opening inventory of Raw Materials	1,70,000
Closing inventory of Raw Materials	1,90,000
Purchases	8,20,000
Hire charges of machine @ ₹ 0.60 per unit manufactured	
Hire charges of factory	2,20,000
Direct wages-Contracted @ ₹ 0.80 per unit manufactured and @ ₹ 0.40 per unit of Closing W.I.P.	
Repairs and Maintenance	1,80,000
Units produced – 5,00,000 units	

Required

Prepare a Manufacturing Account of Mr. Vimal for the year ended 31.3.2016.

 **SOLUTION**

In the Books of Mr. Vimal
Manufacturing Account for the Year ended 30.6.2016

Particulars		Units	Amount ₹	Particulars	Units	Amount ₹
To Opening Work- in- Process		10,000	16,000	By Closing Work- in- Process	12,000	20,000
To Raw Materials Consumed:				By Trading A/c – Cost of finished goods transferred	5,00,000	19,00,800
Opening inventory	1,70,000					
Add: Purchases	8,20,000					
	9,90,000					
Closing Inventory	(1,90,000)		8,00,000			
To Direct Wages – W.N.(1)			4,04,800			

To Direct expenses:				
Hire charges on Machinery – W.N. (3)			3,00,000	
To Indirect expenses:				
Hire charges of Factory Shed			2,20,000	
Repairs Maintenance			1,80,000	
			<u>19,20,800</u>	<u>19,20,800</u>

Working Notes :

(1) Direct Wages – 5,00,000 units @ ₹ 0.80 =	₹ 4,00,000
12,000 units @ ₹ 0.40 =	₹ 4,800
	<u>₹ 4,04,800</u>
(2) Hire charges on Machinery – 5,00,000 units @ ₹ 0.60 =	₹ 3,00,000

**SUMMARY**

- ◆ Direct manufacturing expenses are costs, other than material or wages, which are incurred for a specific product or saleable service.
- ◆ Indirect Manufacturing expenses these are also called Manufacturing overhead, Production overhead, Works overhead, etc.
- ◆ Overhead is defined as total cost of indirect material, indirect wages and indirect expenses.
- ◆ Indirect material means materials which cannot be linked directly with the units produced, for example, stores consumed for repair and maintenance work, small tools, fuel and lubricating oil, etc. In most manufacturing operations, the production of the main product is accompanied by the production of a subsidiary product which has a value on sale.
- ◆ By-product is a secondary product. This is produced from the same raw materials, which are used for producing the main product and without incurring any additional expenses from the same production process in which the main product is produced.

TEST YOUR KNOWLEDGE

Multiple Choice Questions

- Under-statement of closing work in progress in the period will
 - Understate cost of goods manufactured in that period.
 - Overstate current assets.
 - Understate net income in that period.
 - None of the three.
- Sales is equal to

(a) Cost of goods sold – Gross profit.	(b) Cost of goods sold + Gross profit.
(c) Gross profit – Cost of goods sold.	(d) Net profit + cost of goods sold.
- Indirect Manufacturing expenses are also called

(a) Manufacturing overhead.	(b) Production overhead.
(c) Works overhead.	(d) All the three.
- Sale value of the by-product is credited to

(a) Manufacturing account.	(b) Capital account.
(c) Overheads account.	(d) Trading account.
- Manufacturing account shows
 - Total cost of manufacturing the finished products.
 - It provides details of factory cost.
 - It facilitates reconciliation of financial books with cost records.
 - All the three.

Theory Questions

- Write short note on By-products.
- Differentiate between Direct Manufacturing Expenses and Indirect Manufacturing expenses

Practical Questions

- Mr. Pankaj runs a factory which produces motor spares of export quality. The following details were obtained about his manufacturing expenses for the year ended on 31.3.2016.

		₹
W.I.P.	- Opening	3,90,000
	- Closing	5,07,000
Raw Materials	- Purchases	12,10,000
	- Opening	3,02,000
	- Closing	3,10,000
	- Returned	18,000
	- Indirect material	16,000
Wages	- direct	2,10,000

	- indirect	48,000
Direct expenses	- Royalty on production	1,30,000
	- Repairs and maintenance	2,30,000
	- Depreciation on factory shed	40,000
	- Depreciation on plant & machinery	60,000
By-product at selling price		20,000

You are required to prepare Manufacturing Account of Mr. Pankaj for the year ended on 31.3.2016.

2. Following are the Manufacturing A/c, Creditors A/c and Trading A/c provided by Ms. Shivi related to 2016-17. There are certain figures missing from these accounts.

Raw Material A/c

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
	To Opening Stock A/c	1,00,000		By Raw Material Consumed	.....
	To Creditors A/c	.....		By Closing Stock A/c	.....

Creditors A/c

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
	To Bank A/c	22,00,000		By Balance b/d	15,00,000
	To Balance c/d	6,00,000			

Manufacturing A/c

Particulars	Amount ₹	Particulars	Amount ₹
To Raw Material Consumed	.....	By Trading A/c	17,94,000
To Wages	3,50,000		
To Depreciation	2,00,000		
To Direct Expenses	2,44,000		

Additional Information:

- Purchase of machinery worth ₹ 10,00,000 has been omitted. Machinery are chargeable at a depreciation rate of 10%.
- Wages include the following
 - Paid to Factory Workers - ₹ 3,00,000
 - Paid to labour at office - ₹ 50,000

3) Direct Expenses include following:

- ◆ Electricity charges of ₹ 80,000 of which 30% pertained to office.
- ◆ Fuel Charges of ₹ 20,000
- ◆ Freight Inwards of ₹ 35,000
- ◆ Delivery charges to customers - ₹ 20,000.

You are required to prepare revised Manufacturing A/c, and Raw Material A/c.

ANSWERS/HINTS

MCQs

1.	(c)	2.	(b)	3.	(d)	4.	(a)	5.	(d)
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Theoretical Questions

- By-products generally have insignificant value as compared to the value of main product. They are **generally valued at net realisable value**, if their costs cannot be separately identified. It is often treated, as "Miscellaneous income" but the correct treatment would be to credit the sale value of the by-product to Manufacturing Account so as to reduce to that extent, the cost of manufacture of main product.
- Direct manufacturing expenses** are costs, other than material or wages, which are incurred for a specific product or saleable service.

Indirect Manufacturing expenses are also called Manufacturing overhead, Production overhead, Works overhead, etc. Overhead is defined as total cost of indirect material, indirect wages and indirect expenses.

For detail, refer para 2.3

Practical Problems

Answer 1

In the Books of Mr. Pankaj Manufacturing Account

for the year ended on 31.3.2016

Particulars	₹	Amount ₹	Particulars	Amount ₹
To Opening W.I.P.		3,90,000	By Closing W-I-P	5,07,000
To Raw Material Consumed:			By – products	20,000
Opening inventory	3,02,000		By Trading A/c-	17,81,000
Purchases	12,10,000		Cost of finished	
		15,12,000	goods transferred	
Less: Return	(18,000)			
		14,94,000		
Less: Closing inventory	(3,10,000)	11,84,000		

To Direct Wages		2,10,000	
To Direct expenses:			
Royalty		1,30,000	
To Manufacturing Overhead:			
Indirect Material	16,000		
Indirect Wages	48,000		
Repairs & Maintenance	2,30,000		
Depreciation on Factory Shed	40,000		
Depreciation on Plant & Machinery	60,000	3,94,000	
		23,08,000	23,08,000

Answer 2**Manufacturing A/c**

Particulars	Amount ₹	Particulars	Amount ₹
To Raw Material Consumed (Balancing Figure)	10,00,000	By Trading A/c (W.N. 4)	18,00,000
To Wages (W.N. 2)	3,00,000		
To Depreciation (W.N. 1)	3,00,000		
To Direct Expenses (W.N. 3)	2,00,000		
	18,00,000		18,00,000

Raw Material A/c

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
	To Opening Stock A/c	1,00,000		By Raw Material Consumed (from Trading A/c above)	10,00,000
	To Creditors A/c (W.N. 5)	13,00,000		By Closing Stock A/c (Balancing Figure)	4,00,000
		14,00,000			14,00,000

Working Notes:

1) Since purchase of Machinery worth ₹ 10,00,000 has been omitted.

So, depreciation omitted from being charged = ₹ 10,00,000 X 10%

= ₹ 1,00,000

Correct total depreciation expense = ₹ (2,00,000 + 1,00,000)

= ₹ 3,00,000

2) Wages worth ₹ 50,000 will be excluded from manufacturing account as they pertain to office and hence will be charged P&L A/c.

3) Expenses to be excluded from direct expenses:

Office Electricity Charges (80,000 X 30%)	24,000
Delivery Charges to Customers	20,000
Total expenses not part of Direct Expenses	<u>44,000</u>
=> Revised Direct Expenses	= ₹ (2,44,000 - 44,000)
	= ₹ 2,00,000

Fuel charges are related to factory expenses and also freight inwards are incurred for bringing goods to factory/ godown so they are part of direct expenses.

Revised Balance to be transferred to Trading A/c:

4)

Particulars	Amount ₹
Current Balance transferred	17,94,000
Add: Depreciation charges not recorded earlier	1,00,000
Less: Wages related to Office	(50,000)
Less: Office Expenses	<u>(44,000)</u>
Revised balance to be transferred	18,00,000

5)

Creditors A/c

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
	To Bank A/c	22,00,000		By Balance b/d	15,00,000
	To Balance c/d	6,00,000		By Raw Materials A/c (Bal. figure)	13,00,000
		<u>28,00,000</u>			<u>28,00,000</u>