

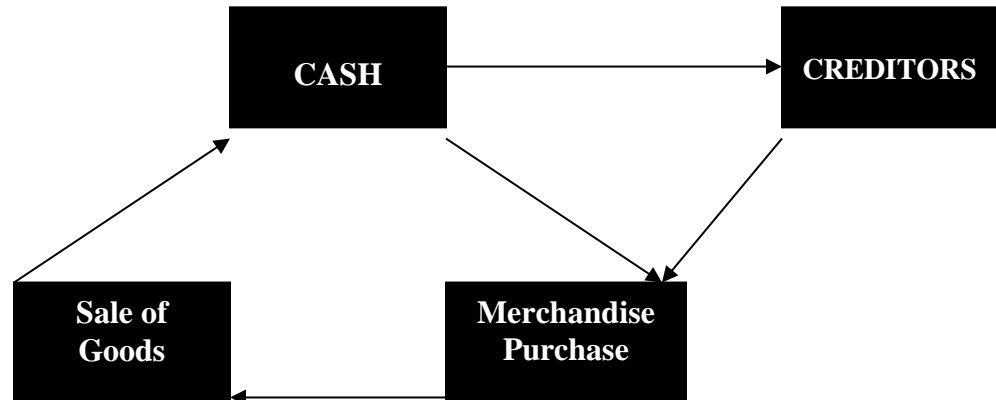
**COST OF GOODS**  
**MANUFACTURED & SOLD**  
**STATEMENT**

In order to understand the financial and cost statement of a concern we should clear about the procedure adopted by trading concern and manufacturing concern

**TRADING CYCLE:** A Trading Concern passes through the following procedure.

- ❑ It first purchase merchandise from the supplier and
- ❑ then sold them to the customer, and
- ❑ when they received cash against goods, they utilized it in the payment of old goods and purchase of new goods and in this way this procedure continues.

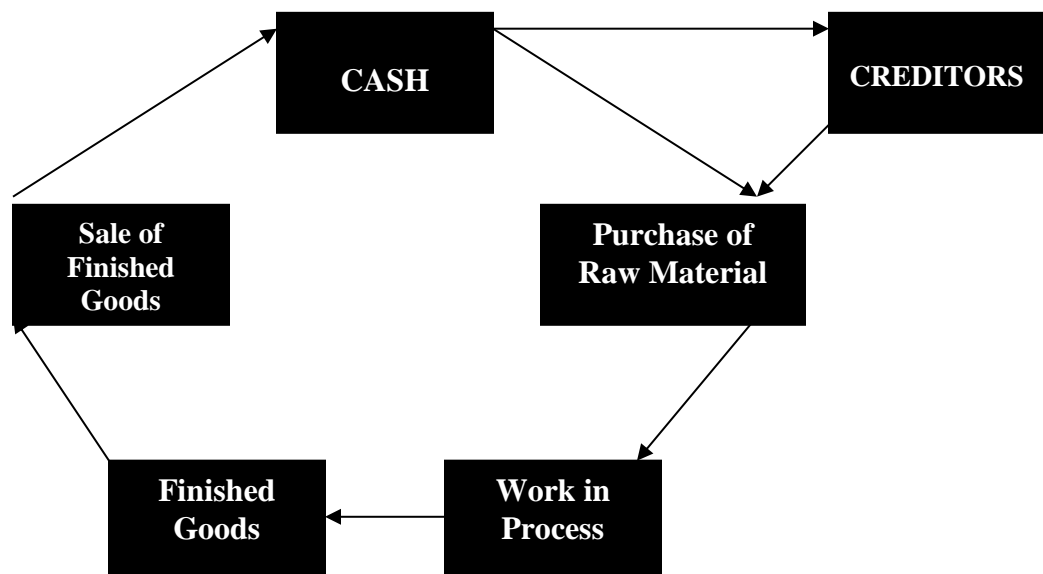
This procedure is called Trading Cycle



**MANUFACTURING CYCLE:** The procedure adopted by manufacturing concern is little bit different than trading concern. We can define the procedure of a manufacturing concern in the following way.

- ❑ They first purchase raw material from the supplier and
- ❑ then convert into finished goods and
- ❑ then sold them to the customer and
- ❑ when they received cash they utilized it in the payment of old raw material and purchase of new and in this way this procedure continue.

This procedure is called manufacturing cycle



The main function of the organization is to ascertain the periodical profit of the firm for that purpose number of statements are prepared and report them to the management. The following statements are common.

- ❑ Balance Sheet
- ❑ Income Statement with supporting schedule of Cost of Goods Sold.

**BALANCE SHEET:** A Balance Sheet is a statement, which shows the financial position of the company through presentation of assets and liabilities. The Balance Sheet of Merchandising Concern and Manufacturing Concern are similar. There is only one difference in the Balance Sheet of these two enterprises and that is the difference of inventory. In manufacturing concern there may be three types of inventories i.e. Raw Material, Work in Process and Finished Goods while merchandising concern deals only with Finished Goods.

*Balance Sheet*

$$\text{Assets} = \text{Liabilities} + \text{Owner Equity}$$

**INCOME STATEMENT:** The Income Statement shows the result of the business for a specific financial period. It consists of five parts

1. Revenue from Sales & Services
2. Cost of Goods Sold
3. Operating expenses
4. Other Income & Other Expenses
5. Income tax

**1) REVENUE FROM SALE AND SERVICE:** It is the first main income which is derived from the regular operation of the business. It includes both sale of goods and services rendered by the companies.

**2) COST OF GOODS SOLD:** It is the cost price of the goods sold. In order to find out the cost of goods sold we need five elements which are as follows:

- ❑ Direct Material
- ❑ Direct Labour
- ❑ Factory Overhead
- ❑ Work in Process
- ❑ Finished Goods

While in trading concern we deal only in finished goods

**3) OPERATING EXPENSES** In this part of the income Statement we recorded selling, distribution and administrative expenses.

**Selling / Marketing Expense:** After manufacturing all the expenses, which are made in order to sale, distribute or deliver the goods are called selling or marketing expenses.

### **List Of Selling Expenses**

- ❑ Commission
- ❑ Sales Salaries
- ❑ Packing Charges
- ❑ Advertising
- ❑ Royalty
- ❑ Delivery Expenses
- ❑ Traveling Expenses etc.

**General / Administrative Expense:** Administrative expense incurred in planning, policy-making and controlling the operation of organization

### **List Of General / Administrative Expenses:**

- ❑ Rent
- ❑ Salaries
- ❑ Bad Debts
- ❑ Purchases discount lost
- ❑ Insurance
- ❑ Stationery
- ❑ Telephone
- ❑ Payroll Taxes
- ❑ Depreciation of Furniture
- ❑ Legal & Accountancy Fees
- ❑ Postage etc.

**4) OTHER INCOMES & OTHER EXPENSES:** The incomes and expenses which are not related with the operation of the business are called other income and other expense.

### **List Of Other Incomes:**

- ❑ Rent Received
- ❑ Interest Received
- ❑ Commission Received
- ❑ Profit on sale of assets etc.

### **List Of Other Expenses:**

- ❑ Interest Paid
- ❑ Loss on sale of assets etc.

**5) INCOME TAX:** It is the tax, which is levied on the net income of the business.

**ABC CO.  
COST OF GOODS MANUFACTURED AND SOLD STATEMENT  
FOR THE PERIOD ENDED -----**

	Rs.	Rs.
<b><u>DIRECT MATERIAL:</u></b>		
Opening Inventory	****	
* Add Purchases	****	
Material Available for use	****	
Less Closing Inventory	****	
Material used		****
Add Direct Labour		****
Prime Cost		****
Add Factory Overhead		****
Total Factory Cost / Manufacturing Cost		****
Add Work in Process Opening Inventory		****
Cost of Goods to be Manufactured		****
Less Work in Process Closing Inventory		****
Cost of Goods Manufactured		****
Add Finished Goods Opening Inventory		****
Cost of Goods Available for Sale		****
Less Finished Goods Closing Inventory		****
Cost of Goods Sold		****

**NOTE:**\* Purchases should be recorded after deducting *Return* and *Discount* and adding *Freight/Carriage*

**UNDER OR OVER APPLIED FOH**

If **Applied Factory Overhead** (e.g. 50% of Direct Labour Cost, Rs.2 per machine hour etc.) is given then we can use it in order to solve the problem.

If **Actual Factory Overhead** (expense incurred in factory e.g. factory rent, depreciation of factory assets, indirect material, indirect labour etc.) is given then we can also use it in order to solve the problem.

If both are given then we should use Applied Factory Overhead and difference should be closed to the Cost of Goods Sold Statement at the end.

**STATEMENT OF UNDER OR OVER APPLIED FACTORY OVERHEAD:**

<b>Actual FOH</b>	<b>****</b>
<b>Applied FOH</b>	<b>****</b>
<b>Under or Over</b>	<b>_____</b>
<b>Applied FOH</b>	<b>_____</b>

- ❑ Under Applied FOH should be added in Cost of Goods Sold Statement.
- ❑ Over Applied FOH should be deducted from Cost of Goods Sold Statement.

**FORMULAS RELATING TO COST OF GOODS MANUFACTURED AND SOLD STATEMENT**

- ❑ Prime Cost = Direct Material + Direct Labour
- ❑ Conversion Cost = Direct Labour + Factory Overhead
- ❑ Manufacturing Cost = Direct Material + Direct Labour + Factory Overhead
- ❑ Manufacturing Cost = Prime Cost + Factory Overhead
- ❑ Manufacturing Cost = Material + Conversion Cost

*Second Performa: Cost of Goods Sold Statement for Trading Concern*

**ABC CO.  
COST OF GOODS SOLD STATEMENT  
FOR THE PERIOD ENDED -----**

	<b>Rs.</b>
Opening Inventory	****
Add Purchases	****
Cost of Goods Available for Sale	****
Less Closing Inventory	****
Cost of Goods Sold	****

*Third Performa: Income Statement*

**ABC CO.  
INCOME STATEMENT  
FOR THE PERIOD ENDED -----**

	<b>Rs.</b>	<b>Rs.</b>
Net Sales		***
Less Cost of Goods Sold		***
Gross Profit		***
Less <b><u>Operating Expenses:</u></b>		
Selling/Marketing Expenses	***	
General/Administrative expenses	***	***
Operating Profit		***
Add other Income		***
		***
Less other expenses		***
Net Income before tax		***
Less Income Tax		***
Net Income after tax		***

\* **NOTE:** Sales should be recorded after deducting *Return* and *Discount*.

## FORMULAS RELATING TO INCOME STATEMENT

- ❑ Net Sales – Cost of Goods Sold = Gross Profit
- ❑ Net Sales - Gross Profit = Cost of Goods Sold
- ❑ Cost of Goods Sold + Gross Profit = Net Sales
- ❑ Per Unit Gross Profit = Gross Profit / No. of Units Sold
- ❑ Per Unit Net Profit = Net Profit / No. of Units Sold

### Formulas

In certain problems we have some missing items that can be calculated with the help of following formulas:

## UNITS MANUFACTURED

<b>UNITS MANUFACTURED</b>	
<b>Units Sold</b>	***
<b>Add Closing Inventory</b>	***
	***
<b>Less Opening Inventory</b>	***
<b>Units Manufactured</b>	_____
	***

## PER UNIT COST

$$\text{P.U.C} = \frac{\text{Cost of Goods Manufactured}}{\text{Units Manufactured}}$$



## **POINTS OF DISCUSSION**

**In this problem we will discuss about Applied Factory Overhead. As Factory Overhead continue throughout the financial year and Cost Of Goods Manufactured and Sold Statement is prepared for a particular period therefore, sometimes we are not in a position to find out the exact amount of FOH, that's why we use APPLIED FOH in order to solve the problem instead of Actual FOH.**

### **DEMONSTRATION PROBLEM #1**

The ABC Manufacturing Co. submits the following information for the period of May.

#### **INVENTORIES**

	May 1, 1998	May 31, 1998
Raw Material	10000	12000
Work in Process	9800	10200
Finished Goods	11600	7100

Purchase of raw material for the period was Rs.75400; Direct Labour incurred during the period was Rs.25000. *Factory Overhead is applied @ 50% of Direct Labour Cost.*

#### **REQUIRED**

Prepare Cost of Goods Manufactured and Sold Statement

**ABC CO.**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> May, 1998**

	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>		
Opening Inventory	10000	
Add Purchases	75400	
Material Available for use	85400	
Less Closing Inventory	12000	
Material used		73400
Add Direct Labour		25000
Prime Cost		98400
Add Factory Overhead (Applied)		12500
Total Factory Cost / Manufacturing Cost		110900
Add Work in Process Opening Inventory		9800
Cost of Goods to be Manufactured		120700
Less Work in Process Closing Inventory		10200
Cost of Goods Manufactured		110500
Add Finished Goods Opening Inventory		11600
Cost of Goods Available for Sale		122100
Less Finished Goods Closing Inventory		7100
Cost of Goods Sold (at normal)		115000
		<hr/>

## POINTS OF DISCUSSION

In this problem we will discuss about Actual factory Overhead. Sometimes in problems Actual Factory Overhead is given instead of Applied Factory Overhead. In this case we can solve our problems through Actual Factory Overhead. Actual Factory Overhead is given, when we have complete data about the financial year. Actual Factory Overhead may be given in following names:

Indirect Material – Indirect Labour -- Factory Rent -- Factory Taxes -- Factory Supplies -- Tools and Dies Used -- Depreciation of Factory Assets – Insurance of Factory --Repair of Factory Assets -- Patent Amortization – Heat – Light – Power –Fuel

## DEMONSTRATION PROBLEM # 2 (a)

The Naveed Manufacturing Co. present the following information for the year ended 31<sup>st</sup> December 1999

Sales	252000	Commission	2500
Sales Returns and Allowances	2000	Advertising	4000
Purchases of Raw Material	96200	Depreciation of Sales Office	2200
Carriage In	300	Traveling Expense	1800
Direct Labour	40000	Bad Debts	700
Purchases Return	1200	Salaries	2000
Indirect Material	4300	Stationery Used	1125
Indirect Labour	4700	Rent of Office	1500
Rent of Factory	3500	Interest Received	1110
Factory Taxes	1150	Interest Paid	275
Insurance of Factory Building	1500		
Depreciation of Plant and Machinery	3425		
Heat, Light and Power	2225		

## INVENTORIES

	Jan. 1	Dec. 31
Raw Material	9000	12000
Work in Process	16100	13900
Finished Goods	17600	15300

## REQUIRED:

- 1) Prepare Cost Of Goods Manufactured and Sold Statement
- 2) Prepare Income Statement

**NAVEED MANUFACTURING CO.**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER, 1999**

		Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>			
Opening Inventory		9000	
Add Purchases	96200		
Less Returns	1200		
	95000		
Add Carriage In	300	95300	
Material Available for use		104300	
Less Closing Inventory		12000	
Material used			92300
Add Direct Labour			40000
Prime Cost			132300
<b>Add <u>Factory Overhead</u></b>			
Indirect Material		4300	
Indirect labour		4700	
Rent of Factory		3500	
Factory Taxes		1150	
Insurance of Factory Building		1500	
Depreciation of Plant & Machinery		3425	
Heat, Light and Power		2225	20800
Total Factory Cost / Manufacturing Cost			153100
Add Work in Process Opening Inventory			16100
Cost of Goods to be Manufactured			169200
Less Work in Process Closing Inventory			13900
Cost of Goods Manufactured			155300
Add Finished Goods Opening Inventory			17600
Cost of Goods Available for Sale			172900
Less Finished Goods Closing Inventory			15300
Cost of Goods Sold (at actual)			157600

**NAVEED MANUFACTURING CO.  
INCOME STATEMENT  
FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER, 1999**

	Rs.	Rs.	Rs.
Sales		252000	
Less Returns		2000	
Net Sales			250000
Less Cost of Goods Sold			157600
Gross Profit			92400
Less <b><u>Operating Expenses</u></b>			
<b><u>Selling Expenses</u></b>			
Commission	2500		
Advertising	4000		
Depreciation of sales Office	2200		
Traveling Expenses	1800	10500	
<b><u>Administrative Expenses</u></b>			
Bad Debts	700		
Salaries	2000		
Stationery	1125		
Rent of Office	1500	5325	15825
Net Operating Profit			76575
Add <b><u>Other Income</u></b>			
Interest received			1110
			77685
Less <b><u>Other Expenses</u></b>			
Interest paid			275
Net Income Before Tax			77410

## POINTS OD DISCUSSION

In this problem we will discuss about the concept of Under or Over Applied Factory Overhead. If Actual Factory Overhead and Applied Factory Overhead both are given then we should use Applied Factory Overhead and difference should be closed to the Cost of Goods Sold Statement at the end. In order to ascertain the difference we prepare a statement that is called Statement of Under or Over Applied Factory Overhead.

Actual FOH	****
Applied FOH	****
(Under) or Over	_____
Applied FOH	****

- ❑ Under Applied FOH should be added in Cost of Goods Sold Statement.
- ❑ Over Applied FOH should be deducted from Cost of Goods Sold Statement.

## DEMONSTRATION PROBLEM #2 (b)

Assume in previous problem the company uses applied factory overhead @ 50% of Direct Labour Cost and the under or over applied factory overhead is closed out at the cost of goods sold

### REQUIRED:

An Income Statement with a schedule showing Cost of Goods Manufactured and Sold Statement.

**NAVEED MANUFACTURING CO**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER, 1999**

	Rs.	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>			
Opening Inventory		9000	
Add Purchases	96200		
Less Returns	1200		
	95000		
Add Carriage In	300	95300	
Material Available for use		104300	
Less Closing Inventory		12000	
Material used			92300
Add Direct Labour			40000
Prime Cost			132300
Add <b>Factory Overhead (Applied)</b>			20000
Total Factory Cost / Manufacturing Cost			152300
Add Work in Process Opening Inventory			16100
Cost of Goods to be Manufactured			168400
Less Work in Process Closing Inventory			13900
Cost of Goods Manufactured			154500
Add Finished Goods Opening Inventory			17600
Cost of Goods Available for Sale			172100
Less Finished Goods Closing Inventory			15300
Cost of Goods Sold (at normal)			156800
Add Under Applied Factory Overhead (w -1)			800
Cost of Goods Sold (at actual)			157600

**NAVEED MANUFACTURING CO**  
**INCOME STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER, 1999**

	Rs.	Rs.	Rs.
Sales		252000	
Less Returns		2000	
Net Sales		<hr/>	250000
Less Cost of Goods Sold			<hr/> 157600
Gross Profit			92400
Less <b><u>Operating Expenses</u></b>			
<b><u>Selling Expenses</u></b>			
Commission	2500		
Advertising	4000		
Depreciation of sales Office	2200		
Traveling Expenses	1800	10500	
<b><u>Administrative Expenses</u></b>			
Bad Debts	700		
Salaries	2000		
Stationery	1125		
Rent of Office	1500	5325	15825
Net Operating Profit			<hr/> 76575
Add <b><u>Other Income</u></b>			
Interest received			1110
			<hr/> 77685
Less <b><u>Other Expenses</u></b>			
Interest paid			275
Net Income Before Tax			<hr/> <hr/> 77410



**WORKING - I**

**STATEMENT OF UNDER OR OVER APPLIED FACTORY OVERHEAD**

**ACTUAL FOH**

Indirect Material	4300
Indirect labour	4700
Rent of Factory	3500
Factory Taxes	1150
Insurance of Factory Building	1500
Depreciation of Plant & Machinery	3425
Heat, Light and Power	2225

**APPLIED FOH**

	20800
	20000
	<hr/>
Under Applied FOH	800
	<hr/>

## POINTS OF DISCUSSION

In this problem we discuss about Expenses. An item will be treated as an expense, according to its utilization e.g. if we purchase fuel amounting to Rs.2000 but we consume the fuel of Rs.1500 then our expense will be 1500.

**Formula**       $\text{Consumption} = \text{Opening Inventory} + \text{Purchases} - \text{Closing Inventory.}$

Some expense are concerned with multiple function e.g. Rent; Rent may be the office rent, it may be the factory or it may be the shop that's why we like to distribute it among different elements.

## DEMONSTRATION PROBLEM # 3

The Cost Accountant of Arslan Manufacturing Company provides the following information.

### Inventories on July 1,1999

Raw Material	25000	
Work in process	33200	
Finished Goods	23250	
Fuel	1500	
Repairs Parts	<u>2000</u>	84950
Direct Labour		50200
Indirect Labour		1950
Indirect Material		2100
Rent (60% to Factory; 20% to selling and 20% to administrative)		3000
Fuel Purchased		3200
Repair of plant (including purchase of parts)		3700
Sales		151200
Purchase of Raw Material		57800
Sales Salaries & Commission		2600
Advertising		3650
Bad Debts		2620

### Inventories on June 30, 2000

Raw Material	22300	
Work in process	37400	
Finished Goods	31200	
Fuel	900	
Repairs Parts	<u>1100</u>	92900

### REQUIRED

- 1) Prepare Cost of Goods Manufactured and Sold Statement.

2) Prepare Income Statement.

**ARSLAN MANUFACTURING CO.**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 30<sup>TH</sup> JUNE, 2000**

	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>		
Opening Inventory	25000	
Add Purchases	57800	
Material Available for use	82800	
Less Closing Inventory	22300	
Material used		60500
Add Direct Labour		50200
Prime Cost		110700
Add <b><u>Factory Overhead</u></b>		
Indirect Material	2100	
Indirect labour	1950	
Rent of Factory (3000 * 60 / 100)	1800	
Fuel Used (1500 + 3200 - 900)	3800	
Repair Parts Used (2000 + 3700 – 1100)	4600	14250
Total Factory Cost / Manufacturing Cost		124950
Add Work in Process Opening Inventory		33200
Cost of Goods to be Manufactured		158150
Less Work in Process Closing Inventory		37400
Cost of Goods Manufactured		120750
Add Finished Goods Opening Inventory		23250
Cost of Goods Available for Sale		144000
Less Finished Goods Closing Inventory		31200
Cost of Goods Sold (at actual)		112800

**ARSLAN MANUFACTURING CO.  
INCOME STATEMENT  
FOR THE PERIOD ENDED 30<sup>TH</sup> JUNE, 2000**

	Rs.	Rs.	Rs.
Sales			151200
Less Cost of Goods Sold			112800
Gross Profit			38400
Less <b><u>Operating Expenses</u></b>			
<b><u>Selling Expenses</u></b>			
Sales Salaries	2600		
Advertising	3650		
Rent (3000 * 20 / 100)	600	6850	
<b><u>Administrative Expenses</u></b>			
Bad Debts	2620		
Rent (3000 * 20 / 100)	600	3220	10070
Net Income			28330

## POINTS OF DISCUSSIONS

Sometimes in question inventories are not given; instead of providing inventories in the problem the examiner gives their result in the form of “Inventory Increase By” or “Inventory Decrease By”; then the treatment will be as follows

- Inventory Increase By should be deducted and
- Inventory Decrease By should be added

**Conversion Cost:** Conversion Cost = Direct Labour + Factory Overhead

## DEMONSTRATION PROBLEM # 4

The following information are extracted from the record of M/s Kashif Corporation for the year ending 31<sup>st</sup> December 1999, Prepare Cost of Goods manufactured and sold statement and calculate

- 1) Prime Cost
- 2) Conversion Cost at Normal
- 3) Cost of Goods Sold at normal & actual
- 4) Gross Profit rate on Sale
- 5) Gross Profit rate on Cost

### INFORMATION GIVEN

#### Direct Material “A”

Inventory on 1-1-1999	15000
Purchases During the year	80000
Inventory on 31-12-1999	7000

#### Direct Material “B”

Inventory on 1-1-1999	3000
Purchases During the year	67000
Inventory on 31-12-1999	8000

Direct Labour Cost	70000
Factory Overhead Cost Applied @100% of Direct Labour Cost	
Factory Overhead Actual	80000
Increase in Work in Process Inventory during the year	40000
Decrease in Finished Goods Inventory during the year	30000
Sales	400000

**M/S KASHIF CORPORATION**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER 1999**

	Rs.	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>			
<b><u>Direct Material "A"</u></b>			
Opening Inventory	15000		
Add Purchases	80000		
Material Available for use	95000		
Less Closing Inventory	7000		
Material Used "A"		88000	
<b><u>Direct Material "B"</u></b>			
Opening Inventory	3000		
Add Purchases	67000		
Material Available for use	70000		
Less Closing Inventory	8000		
Material Used "B"		62000	
Total Material Used			150000
Add Direct Labour			70000
Prime Cost			220000
Add Factory Overhead Applied			70000
Total Factory Cost / Manufacturing Cost			290000
Less Increase in Work in Process Inventory			40000
Cost of Goods Manufactured			250000
Add Decrease in Finished Goods Inventory			30000
Cost of Goods Sold (at normal)			280000
Add Under Applied Factory Overhead (W-1)			10000
Cost of Goods sold (at actual)			290000

**ANSWERS**

1) Prime Cost = Direct Material + Direct Labour = 150000 + 70000 = 220000

2) Conversion Cost at Normal = Direct Labour + Applied FOH  
= 70000 + 70000 = 140000

3) Cost of Goods Sold at Normal = 280000  
Cost of Goods Sold at Actual = 290000

4) **GROSS PROFIT RATE ON SALE**

Gross Profit = Sales – Cost of Goods Sold at actual = 400000 – 290000 = 110000

Gross Profit Rate on Sale =  $\frac{110000}{400000} * 100 = 27.5\%$

5) **GROSS PROFIT RATE ON COST**

Gross Profit Rate on Sale =  $\frac{110000}{290000} * 100 = 37.93\%$

**WORKING – I**

**STATEMENT OF UNDER OR OVER APPLIED FOH**

Actual FOH	80000
Applied FOH	70000
	<hr/>
Under Applied FOH	<u>10000</u>

## POINTS OD DISCUSSION

In this problem we will discuss about different formulas used in this chapter.

### FORMULAS

**Units Manufactured = Units Sold + Closing Inventory – Opening Inventory**

**Per Unit Cost = Cost of Goods Manufactured / Units Manufactured**

**FIFO METHOD** FIFO is the abbreviation of First In First Out method it means that the thing which we have first, will be the first thing to be consumed or sold out.

## DEMONSTRATION PROBLEM # 5

The following data was taken from the book of the Sitara Manufacturing Company for the year ended 31<sup>st</sup> December 2001

	Units	Cost (Rs.)
Sales during the year	2400	?

### OPENING INVENTORY

Work in process	---	---
Finished Goods	540	4374

### CLOSING INVENTORY

Work in Process	30	?
Finished Goods	600	?

### MANUFACTURING COST

Direct Material	9000
Direct Labour	6000
Factory Overhead	4800

The foreman has submitted the following cost estimate for the closing work in process inventory.

Direct Material Cost	Rs. 810
Direct labour Cost	Rs. 300
Factory Overhead	?

The company past experience shows that Factory overhead cost tends to fluctuate closely in proportion to Direct labour Cost.

### REQUIRED

- 1) Calculate number of units manufactured during the year
- 2) Calculate the value of closing work in process inventory



- 3) Prepare Manufacturing Statement
- 4) Calculate per unit cost
- 5) Calculate cost of sale and value of finished goods according to FIFO method.

### **1) UNITS MANUFACTURED**

Units Sold	2400
Add Closing Inventory	600
	<hr/>
	3000
Less Opening Inventory	540
	<hr/>
Units Manufactured	2460
	<hr/>

### **2) VALUE OF CLOSING INVENTORY**

Material	810	
Labour	300	
Factory Overhead	240	(4800/6000*300)
	<hr/>	
	1350	
	<hr/>	

### **3) MANUFACTURING STATEMENT**

**SITARA MANUFACTURING COMPANY  
COST OF GOODS MANUFACTURED STATEMENT  
FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER, 2001**

	<b>Rs.</b>
Direct Material	9000
Add Direct Labour	6000
	<hr/>
Prime Cost	15000
Add Factory Overhead	4800
	<hr/>
Total Factory Cost	19800
Less Work in Process Closing Inventory	1350
	<hr/>
Cost of Goods Manufactured	18450
	<hr/> <hr/>

#### **4) PER UNIT COST**

Per Unit Cost = Cost of Goods Manufactured / Units Manufactured  
= 18450 / 2460  
=Rs.7.5 per unit

#### **5) COST OF SALE (FIFO)**

<b>Units</b>	<b>Cost</b>
540	4374
1860	13950 (1860 * 7.5)
<hr/> 2400	<hr/> 18324

#### **5) CLOSING INVENTORY (FIFO)**

Closing Inventory = 600 \* 7.5 = 4500

## POINTS OF DISCUSSION

In this problem we will discuss that how the value of closing inventory can be calculated. If we do not have the amount of finished goods closing inventory but we have the number of units sold then we can calculate the amount of Finished Goods Closing Inventory with the help of Per Unit Cost.

**Finished Goods Closing inventory = No. of units in inventory \* Per Unit Cost**

**Per Unit Gross profit and Per Unit Net Profit are calculated on the basis of no. of units sold.**

### DEMONSTRATION PROBLEM # 6

The record of the Ameen Refrigerator Company shows the following information for three month ended March 31, 2000

	<u>Rs</u>
Material Purchased	1946700
<b><u>Inventories Jan1, 2000</u></b>	
Material	268000
Finished Goods (100 Refrigerators)	43000
Direct Labour Cost	2125800
Factory Overhead	764000
Marketing Expenses	516000
General & Administrative Expenses	461000
Sales (12400 Refrigerators)	6634000
<b><u>Inventories March31, 2000</u></b>	
Material	167000
Finished Goods (200 Refrigerators)	?

#### **REQUIRED**

- 1) An Income Statement of the period
- 2) The number of units manufactured
- 3) Per Unit Gross Profit
- 4) Per Unit Net profit

To fulfill the requirement of question first of all we have to construct a cost of Goods Manufactured and Sold Statement.

**AMEEN REFRIGERATOR CO.**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> MARCH, 2000**

	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>		
Opening Inventory	268000	
Add Purchases	1946700	
Material Available for use	2214700	
Less Closing Inventory	167000	
Material used		2047700
Add Direct Labour		2125800
Prime Cost		4173500
Add Factory Overhead		764000
Total Factory Cost / Cost of Goods Manufactured		4937500
Add Finished Goods Opening Inventory		43000
Cost of Goods Available for Sale		4980500
Less Finished Goods Closing Inventory (W -1)		79000
Cost of Goods Sold (at normal)		<u>4901500</u>

**AMEEN REFRIGERATOR CO.  
INCOME STATEMENT  
FOR THE PERIOD ENDED 31<sup>ST</sup> MARCH 2000**

	Rs.	Rs.
Sales		6634000
Less Cost of Goods Sold		4901500
Gross Profit		1732500
Less <b><u>Operating Expenses</u></b>		
Selling Expenses	516000	
General & Administrative Expenses	461000	977000
Net Profit		755500

**UNITS MANUFACTURED**

Units Sold	12400
Add Closing Inventory	200
	12600
Less Opening Inventory	100
Units Manufactured	12500

**PER UNIT GROSS PROFIT**

$$\begin{aligned} \text{Per Unit Gross Profit} &= \frac{\text{Gross Profit}}{\text{No. of Units Sold}} \\ &= \frac{1732500}{12400} = \text{Rs.}139.72 \end{aligned}$$

**PER UNIT NET PROFIT**

$$\begin{aligned} \text{Per Unit Net Profit} &= \frac{\text{Net Profit}}{\text{No. of Units Sold}} \\ &= \frac{755500}{12400} = \text{Rs.}60.93 \end{aligned}$$

**WORKING - I**

**Value of Finished Goods Closing Inventory**

$$\begin{aligned} \text{Per Unit Cost} &= \text{Cost of Goods Manufactured} / \text{Units Manufactured} = 4937500 / 12500 \\ &= \text{Rs.}395 \end{aligned}$$

Value of Finished Goods Closing Inventory = 200 \* 395 = Rs.79000

### POINTS OF DISCUSSION

In this problem we will discuss that how can we prepare the Cost of Goods Manufactured Statement if it contains missing items. Sometime we have some missing values in order to ascertain these missing values we solve the problem in reverse form. The following things should be kept in mind when we adopt this way

- The items, which are added in the statement, should be deducted.
- The items, which are deducted in the statement, should be added
- And if the item which is added or deducted if itself missing, then difference should be taken, in order to ascertain the missing the value.

Past Data normally helps in order to ascertain the missing value.

**Cost of Goods Sold = Sales – Gross Profit**

### DEMONSTRATION PROBLEM # 7

On 31<sup>st</sup> May 2001 Moon Chemical Limited had a fire, which completely destroy the factory and its contents. After the fire a physical inventory was taken.

Raw Material	12400
Finished Goods	16600
Supplies	1500

The inventory on January 1, 2001 consisted of

Raw Material	30000
Work in Process	58600
Finished Goods	31600
Supplies	1500

A review of account showed that the sales and the gross profit for the last five years were

<i>YEAR</i>	<i>SALES</i>	<i>GROSS PROFIT</i>
1996	295000	115000
1997	317500	166900
1998	315500	141300
1999	325000	175900
2000	247000	150900

The sales for the current period were Rs.350000 and the purchase of raw material was Rs.65600. Direct labour Cost incurred during the period was Rs.24000 and factory overhead applied @ 60% of Direct Labour Cost

**REQUIRED**

Calculate the value of closing work in process inventory.

**MOON CHEMICAL LIMITED  
COST OF GOODS MANUFACTURED AND SOLD STATEMENT  
FOR THE PERIOD ENDED 31<sup>ST</sup> MAY 2001**

	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>		
Opening Inventory	30000	
Add Purchases	65600	
Material Available for use	95600	
Less Closing Inventory	12400	
Material used		83200
Add Direct Labour		24000
Prime Cost		107200
Add Factory Overhead		14400
Total Factory Cost / Manufacturing Cost		121600
Add Work in Process Opening Inventory		58600
Cost of Goods to be Manufactured		180200
Less Work in Process Closing Inventory		20200
Cost of Goods Manufactured		160000
Add Finished Goods Opening Inventory		31600
Cost of Goods Available for Sale		191600
Less Finished Goods Closing Inventory		16600
Cost of Goods Sold (at normal) <b>(W-1)</b>		175000

**ANSWER:** Work in Process Closing Inventory = Rs.20200

**WORKING – 1**

Cost of Goods Sold = Sales – \*Gross Profit  
= 375000 – 175000 = Rs.175000

$$\begin{aligned} \text{Gross Profit of Current year} &= \frac{\text{Gross Profit of last 5 years}}{\text{Sales of last 5 years}} * \text{Current year's Sale} \\ &= \frac{750000}{1500000} * 350000 = \text{Rs.175000} \end{aligned}$$

## POINTS OF DISCUSSION

In this problem we will discuss about three Work in Process Account. Work in Process Inventory may also be given in parts e.g. Work in Process Material; Work in Process Labour; and Work in Process FOH; then in this case in order to ascertain the full amount of Work in Process Inventory all the elements of work in process should be added.

Material used also called Material Put in to Process.

Applied FOH Rate may also be on the basis of hours and units instead of percentage.

## DEMONSTRATION PROBLEM # 8

During the month the Azeem Corporation put into process Rs.50000 of Raw Material. The mixing Department used 12000 Labour hours at a cost of Rs.30000 and the Finishing Department used 2000 Labour hour at a cost of Rs.9 per hour. Factory overhead is applied @ Rs.3.30 per hour in the Mixing Department and Rs.4 per hour in the Finishing Department.

### INVENTORIES ON AUGUST 1, WERE

Raw Material	16000
Material-in-process	6000
Labour in Process	6500
F.O.H in Process	7200
Finished Goods	12400

### INVENTORIES ON AUGUST 31, WERE

Raw Material	18000
Material-in-process	7000
Labour in Process	5000
F.O.H in Process	6000
Finished Goods	14000

The corporation produced 25000 units of product during the month.

### REQUIRED

1. A schedule showing the cost of work put into process, the cost of goods manufactured and cost of goods sold.
2. Calculate per unit cost of materials, labour and overhead for the August production.



**AZEEM CORPORATION**  
**COST OF GOODS MANUFACTURED AND SOLD STATEMENT**  
**FOR THE PERIOD ENDED 31<sup>ST</sup> AUGUST -----**

	Rs.	Rs.
<b><u>DIRECT MATERIAL</u></b>		
Opening Inventory	16000	
Add Purchases	52000	
Material Available for use	68000	
Less Closing Inventory	18000	
Material used		50000
Add <b><i>Direct Labour</i></b>		
Mixing Department	30000	
Finishing Department	18000	48000
Prime Cost		98000
Add <b><i>Factory Overhead</i></b>		
Mixing Department	39600	
Finishing Department	8000	47600
Total Factory Cost / Manufacturing Cost		145600
Add <b><i>Work in Process Opening Inventory</i></b>		
Work in Process Material	6000	
Work in process Labour	6500	
Work in Process Overhead	7200	19700
Cost of Goods to be Manufactured		165300
Less <b><i>Work in Process Closing Inventory</i></b>		
Work in Process Material	7000	
Work in process Labour	5000	
Work in Process Overhead	6000	18000
Cost of Goods Manufactured		147300
Add Finished Goods Opening Inventory		12400
Cost of Goods Available for Sale		159700

Less Finished Goods Closing Inventory		14000
Cost of Goods Sold (at normal)		145700

### PER UNIT COST

	<b>MATERIAL (Rs.)</b>	<b>LABOUR (Rs.)</b>	<b>F.O.H (Rs.)</b>	<b>TOTAL (Rs.)</b>
Put in Process	50000	48000	47600	145600
Add Work in Process				
Opening Inventory	6000	6500	7200	19700
	56000	54500	54800	165300
Less Work in Process				
Closing Inventory	7000	5000	6000	18000
Cost of Goods Manufactured	49000	49500	48800	147300
Per Unit Cost	49000 / 25000 = Rs. 1.96	49500 / 25000 = Rs.1.98	48800 / 25000 = Rs. 1.952	147300 / 25000 = Rs.5.892