

# DEPARTMENTAL ACCOUNTS

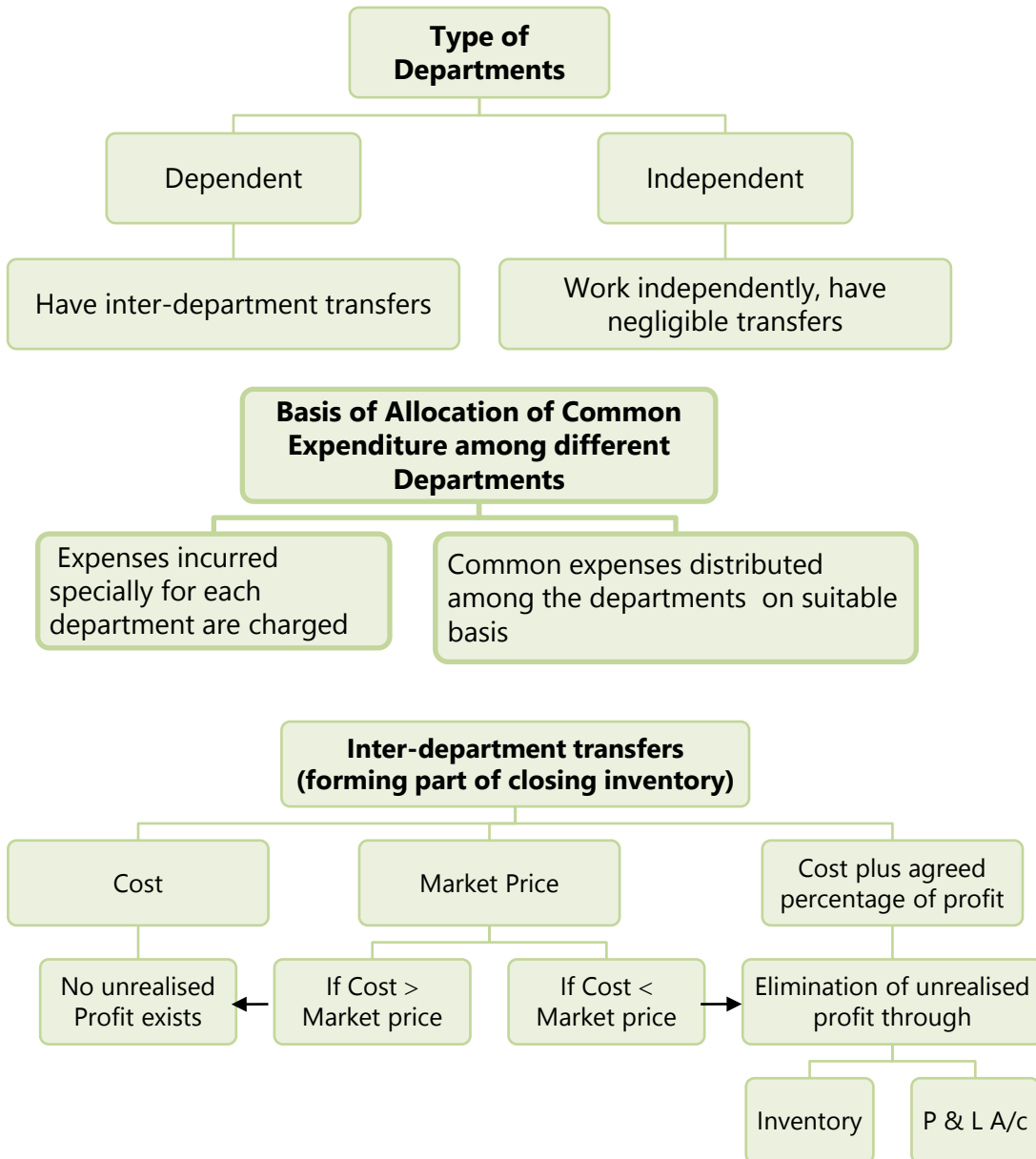


## LEARNING OUTCOMES

After studying this unit, you will be able to–

- ❑ Allocate common expenditures of the organisation among various departments on appropriate basis
- ❑ Deal with the inter-departmental transfers and their accounting treatment
- ❑ Calculate the amount of unrealised profit on unsold inter-departmental stock-in-hand at the end of the accounting year

## CHAPTER OVERVIEW



## 1. INTRODUCTION

If a business consists of several independent activities, or is divided into several departments, for carrying on separate functions, its management is usually interested in finding out the working results of each department to ascertain their relative efficiencies. This can be made possible only if departmental accounts are prepared. Departmental accounts are of great help and assistance to the managements as they provide necessary information for controlling the business more intelligently and effectively. It is also helpful in readily identifying all types of wastages, e.g., wastage of material or of money; Also, attention is drawn to inadequacies or inefficiencies in the working of departments or units into which the business may be divided.

## 2. ADVANTAGES OF DEPARTMENTAL ACCOUNTING

The main advantages of departmental accounting are as follows:

1. **Evaluation of performance:** The performance of each department can be evaluated separately on the basis of trading results. An endeavour may be made to push up the sales of that department which is earning maximum profit.
2. **Growth potential of each department:** The growth potential of a department as compared to others can be evaluated.
3. **Justification of capital outlay:** It helps the management to determine the justification of capital outlay in each department.
4. **Judgement of efficiency:** It helps to calculate stock turnover ratio of each department separately, and thus the efficiency of each department can be revealed.
5. **Planning and control:** Availability of separate cost and profit figures for each department facilitates better control. Thus effective planning and control can be achieved on the basis of departmental accounting information.

Basically, an organisation usually divides the work in various departments, which is done on the principle of division of labour. Each department prepares its separate accounts to judge its individual performance. This can improve efficiency of each and every department of the organisation.

### 3. METHODS OF DEPARTMENTAL ACCOUNTING

There are two methods of keeping departmental accounts:

#### 3.1 Accounts of all departments are kept in one book only

To prepare such accounts, it will be necessary first, for the income and expenditure of department to be separately recorded in subsidiary books and then for them to be accumulated under separate heads in a ledger or ledgers. This may be done by having columnar subsidiary books and a columnar ledger. .

#### 3.2 Separate set of books are kept for each department

A separate set of books may be kept for each department, including complete stock accounts of goods received from or transferred to other departments or as also sales.

Nevertheless, even when separate sets of books are maintained for different departments, it will also be necessary to devise a basis for allocation of common expenses among the different departments, if an organisation is interested in determining the separate departmental net profit in addition to the gross profit.

### 4. BASIS OF ALLOCATION OF COMMON EXPENDITURE AMONG DIFFERENT DEPARTMENTS

Expenses should be allocated among different departments on a rational basis while preparing departmental accounts.

**Individual Identifiable Expenses:** Expenses incurred specially for a particular department are charged directly thereto, *e.g.*, insurance charges of stock held by the department.

**Common Expenses:** Common expenses, the benefit of which is shared by all the departments and which are capable of precise allocation are distributed among the departments concerned on some equitable basis considered suitable in the circumstances of the case.

#### Allocation of Expenses

S. No.	Expenses	Basis
1.	Rent, rates and taxes, repairs and	Floor area occupied by each

	maintenance, insurance of building	department (if given) otherwise on time basis
2.	Lighting and Heating expenses (e.g., energy expenses)	Consumption of energy by each department
3.	Selling expenses, e.g., discount, bad debts, selling commission, freight outward, travelling sales manager's salary and other costs	Sales of each department
4.	Carriage inward/ Discount received	Purchases of each department
5.	Wages/Salaries	Time devoted to each department
6.	Depreciation, insurance, repairs and maintenance of capital assets	Value of assets of each department otherwise on time basis
7.	Administrative and other expenses, e.g., salaries of managers, directors, common advertisement expenses, etc.	Time basis or equally among all departments
8.	Labour welfare expenses	Number of employees in each department
9.	PF/ESI contributions	Wages and salaries of each department

**Note:** There are certain expenses and income, most being of financial nature, which cannot be apportioned on a suitable basis; therefore they are recognised in the combined Profit and Loss Account, for example, interest on loan, profit/loss on sale of investment, etc.



## 5. TYPES OF DEPARTMENTS

There are two types of departments: Dependent and Independent Departments.

### 5.1 Independent Departments

Departments which work independently of each other and have negligible inter-department transfers are called Independent Departments.

### 5.2 Dependent Departments

Departments which transfer goods from one department to another department for further processing are called dependent departments. Here, the output of one department becomes the input for the other department. These transfers may be

done at cost or some pre-decided selling price. The price at which this is done is known as transfer price. In these departments, unloading is required if the transfer price is having a profit element. The method of eliminating unrealised profit is being discussed in the succeeding para.



## 6. INTER-DEPARTMENTAL TRANSFERS

Whenever goods or services are provided by one department to another, their cost should be separately recorded and charged to the department benefiting thereby and credited to that providing the goods or services. The totals of such benefits (inter-departmental transfers) should be disclosed in the departmental Profit and Loss Account, to distinguish them from other items of expenditure.

### 6.1 Basis of Inter-Departmental Transfers

Goods and services may be charged by one department to another usually on either of the following three bases:

- (i) Cost,
- (ii) Current market price,
- (iii) Cost *plus* agreed percentage of profit.

### 6.2 Elimination of Unrealised Profit

When profit is added in the inter-departmental transfers the loading included in the unsold inventory at the end of the year is to be excluded before final accounts are prepared so as to eliminate any anticipatory (internal) profit included therein.

### 6.3 Stock Reserve

Unrealised profit included in unsold stock at the end of accounting period is eliminated by creating an appropriate stock reserve by debiting the combined Profit and Loss Account. The amount of stock reserve will be calculated as:

$$\frac{\text{Transfer price of unsold stock} \times \text{Profit included in transfer price}}{\text{Transfer price}}$$

### 6.4 Journal Entry

At the end of the accounting year, the following journal entry will be passed for elimination of unrealised profit (creation of stock reserve):

Profit and Loss Account	Dr.
-------------------------	-----

To Stock Reserve

(Being a provision made for unrealised profit included in closing stock)

In the beginning of the next accounting year, the aforesaid journal entry will be reversed as under:

Stock Reserve	Dr.
---------------	-----

To Profit and Loss Account

(Being provision for unrealised profit reversed.)

### 6.5 Disclosure in Balance Sheet

The unsold closing stock acquired from another department will appear on the assets side of the balance sheet as under:

(An extract of the assets side of the balance sheet)

Current assets	xxx
Stock	xxx
Less: Stock reserve	<u>xxx</u>
	<u>xxx</u>

## 7. MEMORANDUM STOCK AND MEMORANDUM MARK UP ACCOUNT METHOD

Under this method, goods supplied to each department are debited to a Memorandum Departmental Stock account at cost plus a 'mark up' (loading) to give the normal selling price of the goods. The sale proceeds of the department are credited in Memorandum Departmental Stock account and amount of 'Mark up' is credited to the Departmental Mark up Account. When it is necessary to reduce the selling price below the normal selling price, i.e., cost plus mark up, the reduction (mark down) is entered in the Memorandum Stock account as well as in the Mark up account. This method helps to achieve effective control of stock movements of various departments.

## 8. MISCELLANEOUS ILLUSTRATIONS

### Illustration 1

Goods are transferred from Department P to Department Q at a price 50% above cost. If closing stock of Department Q is ₹ 27,000, compute the amount of stock reserve.

### Solution

	₹
Closing Stock of Department Q	27,000
Goods send by Department P to Department Q at a price 50% above cost	
Hence profit of Department P included in the stock will be -	9,000
$\frac{27,000 \times 50}{150} =$	
Amount of the Stock Reserve will be ₹ 9,000.	

### Working Note:

Dept P transfers goods to Dept Q at a profit of 50% of cost. Hence, if cost is ₹ 100/- the profit = ₹ 50 and Transfer Price = ₹ 150. Therefore, the profit of Dept P included in the stock value of Dept Q is one – third of the sale value

### Illustration 2

Z Ltd. has three departments and submits the following information for the year ending on 31<sup>st</sup> March, 20X1:

	A	B	C	Total (₹)
Purchases (units)	6,000	12,000	14,400	
Purchases (Amount)				6,00,000
Sales (Units)	6,120	11,520	14,976	
Selling Price (per unit) ₹	40	45	50	
Closing Stock (Units)	600	960	36	

You are required to prepare departmental trading account of Z Ltd., assuming that the rate of profit on sales is uniform in each case.



## Solution

Departmental Trading Account for the year ended on 31<sup>st</sup> March, 20X1

Particulars		A	B	C	Particulars		A	B	C
		₹	₹	₹			₹	₹	₹
To	Opening Stock (W.N.4)	11,520	8,640	12,240	By	Sales	2,44,800	5,18,400	7,48,800
						A- 6120 x 40			
						B- 11,520 x 45			
						C- 14,976 x 50			
To	Purchases (W.N.2)	96,000	2,16,000	2,88,000	By	Closing Stock (W.N.4)	9,600	17,280	720
To	Gross Profit (b.f.)	<u>1,46,880</u>	<u>3,11,040</u>	<u>4,49,280</u>					
		<u>2,54,400</u>	<u>5,35,680</u>	<u>7,49,520</u>			<u>2,54,400</u>	<u>5,35,680</u>	<u>7,49,520</u>

## Working Notes:

## (1) Profit Margin Ratio

Selling price of unit purchased:		₹
Department A	6,000 x 40	2,40,000
Department B	12,000 x 45	5,40,000
Department C	14,400 x 50	<u>7,20,000</u>
Total Selling Price		15,00,000
Less:	Purchase (Cost) Value	<u>(6,00,000)</u>
Gross Profit		<u>9,00,000</u>
Profit Margin Ratio = $\frac{9,00,000}{15,00,000} \times 100 = 60\%$		

**(2) Statement showing department-wise per unit Cost and Purchase Cost**

	<b>A</b>	<b>B</b>	<b>C</b>
	₹	₹	₹
Selling Price (Per unit) (₹)	40	45	50
Less: Profit Margin @ 60% (₹) Profit Margin is uniform for all depts at 60%	<u>(24)</u>	<u>(27)</u>	<u>(30)</u>
Purchase price per unit (₹)	<u>16</u>	<u>18</u>	<u>20</u>
Number of units purchased	6,000	12,000	14,400
(Purchase cost per unit x Units purchased)	96,000	2,16,000	2,88,000

**(3) Statement showing calculation of department-wise Opening Stock (in Units)**

	<b>A</b>	<b>B</b>	<b>C</b>
Sales (Units)	6,120	11,520	14,976
Add: Closing Stock (Units)	<u>600</u>	<u>960</u>	<u>36</u>
	6,720	12,480	15,012
Less: Purchases (units)	<u>(6,000)</u>	<u>(12,000)</u>	<u>(14,400)</u>
Opening Stock (Units)	<u>720</u>	<u>480</u>	<u>612</u>

**(4) Statement showing department-wise cost of Opening Stock and Closing Stock**

	<b>A</b>	<b>B</b>	<b>C</b>
Cost of Opening Stock (₹)	720 x 16	480 x 18	612 x 20
₹	<u>11,520</u>	<u>8,640</u>	<u>12,240</u>
Cost of Closing Stock	600 x 16	960 x 18	36 x 20
₹	<u>9,600</u>	<u>17,280</u>	<u>720</u>

**Illustration 3**

*Brahma Limited has three departments and submits the following information for the year ending on 31st March, 20X1:*

Particulars	A	B	C	Total (₹)
Purchases (units)	5,000	10,000	15,000	
Purchases (Amount)				8,40,000
Sales (units)	5,200	9,800	15,300	
Selling price (₹ per unit)	40	45	50	
Closing Stock (Units)	400	600	700	

You are required to prepare departmental trading account of Brahma Limited assuming that the rate of profit on sales is uniform in each case.

### Answer

#### Departmental Trading Account for the year ended 31<sup>st</sup> March, 20X1

Particulars	A	B	C	Particulars	A	B	C
	₹	₹	₹		₹	₹	₹
To Opening Stock (W.N.4)	14,400	10,800	30,000	By Sales	2,08,000	4,41,000	7,65,000
				A-5,200 x 40			
				B-9,800 x 45			
				C-15,300 x 50			
To Purchases (W.N.2)	1,20,000	2,70,000	4,50,000	By Closing stock (W.N.4)	9,600	16,200	21,000
To Gross profit (b.f.)	83,200	1,76,400	3,06,000				
	2,17,600	4,57,200	7,86,000		2,17,600	4,57,200	7,86,000

### Working Notes:

#### (1) Profit Margin Ratio

Selling price of units purchased:		₹
Department A	(5,000 units x ₹ 40)	2,00,000
Department B	(10,000 units x ₹ 45)	4,50,000
Department C	(15,000 units x ₹ 50)	7,50,000
Total selling price of purchased units		14,00,000

Less: Purchases	(8,40,000)
Gross profit	<b>5,60,000</b>

$$\text{Profit margin ratio} = \frac{\text{Gross profit}}{\text{Selling price}} \times 100 = \frac{5,60,000}{14,00,000} \times 100 = 40\%$$

**(2) Statement showing department-wise per unit cost and purchase cost**

Particulars	A	B	C
Selling price per unit (₹)	40	45	50
Less: Profit margin @ 40% (₹) Profit margin is uniform for all depts.	(16)	(18)	(20)
Purchase price per unit (₹)	24	27	30
No. of units purchased	5,000	10,000	15,000
Purchases (purchase cost per unit x units purchased)	1,20,000	2,70,000	4,50,000

**(3) Statement showing calculation of department-wise Opening Stock (in units)**

Particulars	A	B	C
Sales (Units)	5,200	9,800	15,300
Add: Closing Stock (Units)	400	600	700
	5,600	10,400	16,000
Less: Purchases (Units)	(5,000)	(10,000)	(15,000)
Opening Stock (Units)	600	400	1,000

**(4) Statement showing department-wise cost of Opening and Closing Stock**

Particulars	A	B	C
Cost of Opening Stock (₹)	600 x 24 14,400	400 x 27 10,800	1,000 x 30 30,000
Cost of Closing Stock (₹)	400 x 24 9,600	600 x 27 16,200	700 x 30 21,000

**Illustration 4**

M/s Omega is a departmental store having three departments X, Y and Z. The information regarding three departments for the year ended 31<sup>st</sup> March, 20X1 are given below:

	X	Y	Z
	₹	₹	₹
Opening Stock	36,000	24,000	20,000
Purchases	1,32,000	88,000	44,000
Debtors at end	15,000	10,000	10,000
Sales	1,80,000	1,35,000	90,000
Closing stock	45,000	17,500	21,000
Value of furniture in each department	20,000	20,000	10,000
Floor space occupied by each department (in sq. ft.)	3,000	2,500	2,000
Number of employees in each Department	25	20	15
Electricity consumed by each department (in units)	300	200	100

The balances of other revenue items in the books for the year are given below:

	Amount (₹)
Carriage inwards	3,000
Carriage outwards	2,700
Salaries	48,000
Advertisement	2,700
Discount allowed	2,250
Discount received	1,800
Rent, Rates and Taxes	7,500
Depreciation on furniture	1,000
Electricity expenses	3,000
Labour welfare expenses	2,400

You are required to prepare Departmental Trading and Profit and Loss Account for the year ended 31<sup>st</sup> March, 20X1 after providing provision for Bad Debts at 5%.

## Solution

**In the Books of M/s Omega  
Departmental Trading and Profit and Loss Account for the year ended 31<sup>st</sup> March, 20X1**

Particulars	Deptt. X ₹	Deptt. Y ₹	Deptt. Z ₹	Total ₹	Particulars	Deptt. X ₹	Deptt. Y ₹	Deptt. Z ₹	Total ₹
To Stock (opening)	36,000	24,000	20,000	80,000	By Sales	1,80,000	1,35,000	90,000	4,05,000
To Purchases	1,32,000	88,000	44,000	2,64,000	By Stock (closing)	45,000	17,500	21,000	83,500
To Carriage Inwards	1,500	1,000	500	3,000					
To Gross Profit c/d (b.f.)	55,500	39,500	46,500	1,41,500					
To Carriage	2,25,000	1,52,500	1,11,000	4,88,500	By Gross Profit	2,25,000	1,52,500	1,11,000	4,88,500
To Electricity	1,200	900	600	2,700	b/d	55,500	39,500	46,500	1,41,500
To Salaries	20,000	16,000	12,000	48,000	By Discount received	900	600	300	1,800
To Advertisement	1,200	900	600	2,700					
To Discount allowed	1,000	750	500	2,250					
To Rent, Rates and Taxes	3,000	2,500	2,000	7,500					
To Depreciation	400	400	200	1,000					
To Provision for Bad Debts @ 5% of debtors	750	500	500	1,750					
To Labour welfare expenses	1,000	800	600	2,400					
To Net Profit (b.f.)	26,350	16,350	29,300	72,000					
	56,400	40,100	46,800	1,43,300		56,400	40,100	46,800	1,43,300

**Working Note:**

Basis of allocation of expenses	
Carriage inwards	Purchases (3:2:1)
Carriage outwards	Turnover (4:3:2)
Salaries	No. of Employees (5:4:3)
Advertisement	Turnover (4:3:2)
Discount allowed	Turnover (4:3:2)
Discount received	Purchases (3:2:1)
Rent, Rates and Taxes	Floor Space occupied (6:5:4)
Depreciation on furniture	Value of furniture (2:2:1)
Labour welfare expenses	No. of Employees (5:4:3)
Electricity expense	Units consumed (3:2:1)
Provision for bad debts	Debtors balances (3:2:2)

**Illustration 5**

M/s X has two departments, A and B. From the following particulars prepare the consolidated Trading Account and Departmental Trading Account for the year ending 31st December, 20X1:

	A ₹	B ₹
Opening Stock [consisting of purchased goods -at cost]	20,000	12,000
Purchases	92,000	68,000
Sales	1,40,000	1,12,000
Wages	12,000	8,000
Carriage	2,000	2,000
Closing Stock:		
(i) Purchased goods	4,500	6,000
(ii) Finished goods	24,000	14,000
Purchased goods transferred:		
by B to A	10,000	
by A to B		8,000
Finished goods transferred:		
by A to B	35,000	

by B to A	40,000
Return of finished goods:	
by A to B	10,000
by B to A	7,000

You are informed that purchased goods have been transferred mutually at their respective departmental purchase cost and finished goods at departmental market price and that 20% of the finished stock (closing) at each department represented finished goods received from the other department.

### Solution

#### M/s X

#### Departmental Trading A/c for the year ending 31st December, 20X1

		Deptt. A.	Deptt. B.			Deptt. A.	Deptt. B.
		₹	₹			₹	₹
To	Stock	20,000	12,000	By	Sales	1,40,000	1,12,000
To	Purchases	92,000	68,000	By	Purchased Goods transferred	8,000	10,000
To	Wages	12,000	8,000	By	Finished goods transferred	35,000	40,000
To	Carriage	2,000	2,000		Return of finished Goods	10,000	7,000
To	Purchased Goods transferred	10,000	8,000	By	Closing Stock:		
To	F.G. transferred	40,000	35,000		Purchased Goods	4,500	6,000
To	Ret. of finished Goods	7,000	10,000		Finished Goods	24,000	14,000
To	Gross profit c/d (b.f.)	38,500	46,000				
		2,21,500	1,89,000			2,21,500	1,89,000



**Consolidated Trading Account for the year ending 31st December, 20X1**

		₹			₹
To	Opening Stock	32,000	By	Sales	2,52,000
To	Purchases	1,60,000	By	Closing Stock:	
To	Wages	20,000		Purchased Goods	10,500
To	Carriage	4,000		Finished Goods	38,000
To	Stock Reserve	2,196			
To	Gross Profit c/d	82,304			
		<u>3,00,500</u>			<u>3,00,500</u>

**Working note:**

	Deptt. A	Deptt. B
Sale	1,40,000	1,12,000
Add : Transfer	<u>35,000</u>	<u>40,000</u>
	1,75,000	1,52,000
Less: Returns	<u>(7,000)</u>	<u>(10,000)</u>
Net Sales plus Transfer	<u>1,68,000</u>	<u>1,42,000</u>

$$\text{Rate of Gross profit} \frac{38,500}{1,68,000} \times 100 = 22.916\% \quad \frac{46,000}{1,42,000} \times 100 = 32.394\%$$

Closing Stock out of transfer (20% of closing stock)	<u>4,800</u>	<u>2,800</u>
---	--------------	--------------

$$\text{Unrealised Profit} \quad 4,800 \times 32.394\% = 1,555 \quad 2,800 \times 22.916\% = 641$$

**Illustration 6**

Department P sells goods to Department S at a profit of 25% on cost and to Department Q at a profit of 15% on cost. Department S sells goods to P and Q at a profit of 20% and 30% on sales respectively. Department Q sells goods to P and S at 20% and 10% profit on cost respectively.

Departmental Managers are entitled to 10% commission on net profit subject to unrealised profit on departmental sales being eliminated. Departmental profits after charging Manager's commission, but before adjustment of unrealised profits are as below:

	₹
Department P	90,000
Department S	60,000
Department Q	45,000

Stock lying at different Departments at the end of the year are as below:

	Figures in ₹		
	<b>DEPARTMENTS</b>		
	<b>P</b>	<b>S</b>	<b>Q</b>
Transfer from P	-	18,000	14,000
Transfer from S	48,000	-	38,000
Transfer from Q	12,000	8,000	-

Find out correct Departmental Profits after charging Managers' Commission.

### Solution

#### Calculation of correct Departmental Profits

	Department P (₹)	Department S (₹)	Department Q (₹)
Profit after charging Manager's Commission	90,000	60,000	45,000
Add: Manager's Commission (1/9)	10,000	6,667	5,000
	1,00,000	66,667	50,000
Less: Unrealised profit on Stock (WN)	(5,426)	(21,000)	(2,727)
Profit Before Manager's Commission	94,574	45,667	47,273
Less: Manager's Commission 10%	(9,457)	(4,567)	(4,727)
Correct Profit after Manager's Commission	85,117	41,100	42,546

**Working Notes:**

	Department P (₹)	Department S (₹)	Department Q (₹)	Total (₹)
Unrealised Profit of:				
Department P	-	$25/125 \times 18,000$ =3,600	$15/115 \times 14,000$ =1,826	5,426
Department S	$20/100 \times 48,000$ =9,600	-	$30/100 \times 38,000$ =11,400	21,000
Department Q	$20/120 \times 12,000$ =2,000	$10/110 \times 8,000$ =727		2,727

**Illustration 7**

M/s. Suman Enterprises has two Departments, Finished Leather and Shoes. Shoes are made by the Firm itself out of leather supplied by Leather Department at its usual selling price. From the following figures, prepare Departmental Trading and Profit & Loss Account for the year ended 31st March, 20X3:

	Finished Leather Department (₹)	Shoes Department (₹)
Opening Stock (As on 01.04.20X2)	30,20,000	4,30,000
Purchases	1,50,00,000	2,60,000
Sales	1,80,00,000	45,20,000
Transfer to Shoes Department	30,00,000	-
Manufacturing Expenses	-	5,00,000
Selling Expenses	1,50,000	60,000
Rent and Warehousing	5,00,000	3,00,000
Stock on 31.03.20X3	12,20,000	5,00,000

The following further information are available for necessary consideration:

- The stock in Shoes Department may be considered as consisting of 75% of Leather and 25% of other expenses.

- (ii) The Finished Leather Department earned a Gross Profit @ 15% in 20X1-X2.  
 (iii) General expenses of the business as a whole amount to ₹ 8,50,000.

### Solution

#### Departmental Trading and Profit and Loss Account for the year ended 31st March, 20X3

Particulars	Finished leather (₹)	Shoes (₹)	Total (₹)	Particulars	Finished leather (₹)	Shoes (₹)	Total (₹)
To Opening stock	30,20,000	4,30,000	34,50,000	By Sales	1,80,00,000	45,20,000	2,25,20,000
To Purchases	1,50,00,000	2,60,000	1,52,60,000	By Transfer to shoes Deptt.	30,00,000	-	30,00,000
To Transfer from Leather Department		30,00,000	30,00,000	By Closing stock	12,20,000	5,00,000	17,20,000
To Manufacturing expenses		5,00,000	5,00,000				
To Gross profit c/d (b.f.)	42,00,000	8,30,000	50,30,000				
	2,22,20,000	50,20,000	2,72,40,000		2,22,20,000	50,20,000	2,72,40,000
To Selling expenses	1,50,000	60,000	2,10,000	By Gross profit b/d	42,00,000	8,30,000	50,30,000
To Rent & warehousing	5,00,000	3,00,000	8,00,000				
To Net profit (b.f.)	35,50,000	4,70,000	40,20,000				
	42,00,000	8,30,000	50,30,000		42,00,000	8,30,000	50,30,000

#### General Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To General expenses	8,50,000	By Net profit	40,20,000
To Unrealised profit (Refer W.N.)	26,625		
To General net profit (Bal. fig.)	31,43,375		
	40,20,000		40,20,000

**Working Note:****Calculation of Stock Reserve**

Rate of Gross Profit of Finished leather Department, for the year 20X2-X3

$$= \frac{\text{Gross Profit}}{\text{Total Sales}} \times 100 = [(42,00,000) / (1,80,00,000 + 30,00,000)] \times 100 = 20\%$$

Closing Stock of Finished leather in Shoes Department = 75%

$$\text{i.e. } ₹ 5,00,000 \times 75\% = ₹ 3,75,000$$

Stock Reserve required for unrealised profit @ 20% on closing stock

$$₹ 3,75,000 \times 20\% = ₹ 75,000$$

Stock reserve for unrealised profit included in opening stock of Shoes dept. @ 15%  
i.e.

$$(₹ 4,30,000 \times 75\% \times 15\%) = ₹ 48,375$$

$$\text{Additional Stock Reserve required during the year} = ₹ 75,000 - ₹ 48,375 = ₹ 26,625$$

**Illustration 8**

*Gram Udyog, a retail store, has two departments, 'Khadi and Silks' for each of which stock account and memorandum 'mark up' accounts are kept. All the goods supplied to each department are debited to the stock account at cost plus a 'mark up', which together make-up the selling-price of the goods and in the account of the sale proceeds of the goods are credited. The amount of 'mark-up' is credited to the Departmental Mark up Account. If the selling price of any goods is reduced below its normal selling price, the reduction 'marked down' is adjusted both in the Stock Account and the Departmental 'Mark up' Account. The rate of 'Mark up' for Khadi Department is 33-1/3% of the cost and for Silks Department it is 50% of the cost.*

*The following figures have been taken from the books for the year ended December 31,20X1:*

	Khadi Deptt.	Silks Deptt.
	₹	₹
Stock as on January 1st at cost	10,500	18,600
Purchases	75,900	93,400
Sales	95,600	1,25,000

- (1) The stock of Khadi on January 1, 20X1 included goods the selling price of which had been marked down by ₹ 1,260. These goods were sold during the year at the reduced prices.
- (2) Certain stock of the value of ₹ 6,900 purchased for the Khadi Department were later in the year transferred to the Silks department and sold for ₹ 10,350. As a result though cost of the goods is included in the Khadi Department the sale proceeds have been credited to the Silks Department.
- (3) During the year 20X1 to promote sales the goods were marked down as follows:
- Cost Marked down

	₹	₹
Khadi	5,600	360
Silk	10,000	2,000

All the goods marked down, were sold except Silks of the value of ₹ 5,000 marked down by ₹ 1,000.

- (4) At the time of stock-taking on December 31, 20X1 it was discovered that Khadi cloth of the cost of ₹ 390 was missing and it was decided that the amount be written off.

You are required to prepare for both the departments for the year 20X1.

- (a) The Memorandum Stock Account; and  
 (b) The Memorandum Mark up Account.

### Solution

#### Silk Stock Account

20X1		₹	20X1	₹
To Balance b/d			By Sales A/c	1,25,000
To Cost	18,600		By Mark-up A/c	2,000
Mark-up @50%	<u>9,300</u>	27,900	By Balance c/d (b.f.)	51,350
To Purchases	93,400			
Mark-up @50%	<u>46,700</u>	1,40,100		
To Khadi A/c	6,900			
Mark-up@50%	3,450	10,350		
		1,78,350		1,78,350

**Silk Mark-up Account**

20X1	₹	20X1	₹
To Stock A/c	2,000	By Balance b/d	9,300
To Profit & Loss A/c (b.f.)	41,000	By Stock A/c	46,700
To Balance c/d [(1/3* of {51,350 + 1,000}) – 1,000]	16,450	By Stock A/c	3,450
	59,450		59,450

\* 1/2 on cost is equal to 1/3 on sales

**Working Notes:**

*Verification of Profit*

	₹	
Sales		1,25,000
Add : Mark down in goods sold		<u>1,000</u>
		<u>1,26,000</u>
Gross Profit 1/3		42,000
Less : Mark down		<u>(1,000)</u>
Gross profit as per books		<u>41,000</u>

**Khadi Stock Account**

20X1			₹	₹	20X1			₹	₹
	To	Balance b/d (10,500+2,240#)		12,740		By	Sales		95,600
	To	Purchases	75,900				Silk Deptt.	6,900	
		Markup @33-1/3%	<u>25,300</u>	1,01,200			Mark-up A/c @33-1/3%	<u>2,300</u>	9,200
						By	Loss of stock A/c	390	
							Mark-up A/c@33-1/3%	<u>130</u>	520
						By	Mark-up A/c		360
						By	Balance c/d (b.f.)		8,260
				1,13,940					1,13,940

# [(10,500 x 33-1/3%) – 1,260] = ₹ 2,240

### Khadi Mark-up Account

20X1		₹	20X1		₹
	To Stock A/c (transfer)	2,300		By Balance b/d	
	To Stock A/c (re-sale)	130		(3,500 – 1,260)	2,240
	To Stock A/c (mark down)	360		By Stock A/c	25,300
	To Profit & Loss A/c	22,685			
	To Balance (1/4 of ₹ 8,260)	2,065			
		27,540			27,540

#### Working Note:

Verification of Profit	₹
Sales as per books	95,600
Add : Mark-down (1,260+360)	<u>1,620</u>
	<u>97,220</u>
Gross Profit on fixed selling price @ 25% on ₹ 97,220	24,305
Less : Mark down	<u>(1,620)</u>
	<u>22,685</u>

## SUMMARY

- **Aspects of Departmental Accounting**

- Computation of unrealised profit if inter-department transfers form part of closing stock.
- Preparation of departmental trading and profit and loss account.
- Monitoring stock movements with help of memorandum mark-up account.

- **Methods of maintaining departmental accounts**

There are two methods of keeping departmental accounts:

- When accounts of all departments are kept at in one book only
- When separate set of books are kept for each department.

- **Classification of Departments:** (i) Dependent departments and (ii) Independent departments.



- **Basis of allocation of departmental expenses:**

S.No.	Expenses	Basis
1.	Rent, rates and taxes, repairs and maintenance, insurance of building	Floor area occupied by each department (if given) otherwise on time basis
2.	Lighting and Heating expenses	Consumption of energy by each department
3.	Selling expenses,	Sales of each department
4.	Carriage inward/ Discount received	Purchases of each department
5.	Wages/Salaries	Time devoted to each department
6.	Maintenance of capital assets	Value of assets of each department otherwise on time basis
7.	Administrative expenses	Time basis or equally among all departments
8.	Labour welfare expenses	Number of employees in each department
9.	PF/ESI contributions	Wages and salaries of each department

- There are certain expenses and income, most being of **financial nature**, which cannot be apportioned on a suitable basis; therefore they are recognised in the combined Profit and Loss Account, for example, interest on loan, profit/loss on sale of investment, etc.
- Goods and services may be charged by one department to another usually on any of the three basis: (i)**Cost**, (ii) **Current market price**,(iii) **Cost plus percentage of profit**.
- When profit is added in the **inter-departmental transfers**, the loading included in the unsold stock at the end of the year is to be excluded before final accounts are prepared so as to eliminate any anticipatory profit included therein. This is done by creating an appropriate stock reserve by debiting the combined Profit and Loss Account.

## TEST YOUR KNOWLEDGE

### MCQs

1. Departmental accounting helps in
  - (a) Evaluation of trading results of each department separately.
  - (b) Effective planning and control on each department.
  - (c) Both (a) and (b)
2. Selling commission expense is apportioned among departments in the proportion of
  - (a) Average stock carried by each department.
  - (b) Number of units sold by each department.
  - (c) Sales of each department.
3. If Department A transfers goods to Department B at a price of 50% above cost, what will be the amount of stock reserve on unsold stock worth ₹9,000 of Department B?
  - (a) 3,000.
  - (b) 4,500.
  - (c) 1,500.
4. Goods and services may be charged by one department to another on
  - (a) Market price.
  - (b) Cost plus agreed percentage of profit.
  - (c) Both (a) and (b)
5. Administrative expenses are apportioned among various departments on basis of
  - (a) Time spent by employees in each department.
  - (b) Value of assets of each department.
  - (c) Sales of each department.
6. Depreciation on assets is apportioned among various departments on basis of
  - (a) Value of assets of each department.
  - (b) Purchases of each department.

- (c) Sales of each department.
7. Expense of rent is apportioned among various departments on basis of
- Sales of each department.
  - Floor area occupied by each department.
  - Either (a) or (b).
8. When profit is added in inter-departmental transfers, unrealised profit included in the closing stock at the year end (before preparing final accounts) is eliminated by
- Creating an appropriate stock reserve.
  - Debiting the combined profit and loss account.
  - Both (a) and (b).
9. If an organisation is interested in determining the separate departmental net profit, then
- Accounts of all departments are kept in one book only.
  - Separate set of books are kept for each department.
  - Departments transfer goods to each other for further processing.

### Theoretical Questions

- Explain the significance of having departmental accounts for a business entity.
- How will you allocate the following expenses among different departments?
  - Rent, rates and taxes, repairs and maintenance, insurance of building.
  - Lighting and Heating expenses (e.g. energy expenses)
  - Selling expenses.

### Practical Problems

#### Question 1

Department A sells goods to Department B at a profit of 50% on cost and to Department C at 20% on cost. Department B sells goods to A and C at a profit of 25% and 15% respectively on sales. Department C charges 30% and 40% profit on cost to Department A and B respectively.

Stock lying at different departments at the end of the year are as under:

...	Department A	Department B	Department C
Transfer from Department A	-	45,000	42,000
Transfer from Department B	40,000	-	72,000
Transfer from Department C	39,000	42,000	-

Calculate the unrealised profit of each department and also total unrealised profit.

### Question 2

Department X sells goods to Department Y at a profit of 25% on cost and to Department Z at 10% profit on cost. Department Y sells goods to X and Z at a profit of 15% and 20% on sales, respectively. Department Z charges 20% and 25% profit on cost to Department X and Y, respectively.

Department Managers are entitled to 10% commission on net profit subject to unrealised profit on departmental sales being eliminated. Departmental profits after charging Managers' commission, but before adjustment of unrealised profit are as under:

	₹
Department X	36,000
Department Y	27,000
Department Z	18,000

Stock lying at different departments at the end of the year are as under:

	Dept. X ₹	Dept. Y ₹	Dept. Z ₹
Transfer from Department X	—	15,000	11,000
Transfer from Department Y	14,000	—	12,000
Transfer from Department Z	6,000	5,000	—

Find out the correct departmental Profits after charging Managers' commission

### Question 3

Department R sells goods to Department S at a profit of 25% on cost and Department T at 10% profit on cost. Department S sells goods to R and T at a profit of 15% and 20% on sales respectively. Department T charges 20% and 25% profit on cost to Department R and S respectively.

Department managers are entitled to 10% commission on net profit subject to unrealised profit on departmental sales being eliminated. Departmental profits after charging manager's commission, but before adjustment of unrealised profit are as under:

		₹
Department	R	54,000
Department	S	40,500
Department	T	27,000

Stock lying at different departments at the end of the year are as under:

	Deptt. R	Deptt. S	Deptt. T
	₹	₹	₹
Transfer from Department R	-	22,500	16,500
Transfer from Department S	21,000	-	18,000
Transfer from Department T	9,000	7,500	-

Find out the correct departmental profits after charging manager's commission.

#### Question 4

Martis Ltd. has several departments. Goods supplied to each department are debited to a Memorandum Departmental Stock Account at cost, plus a fixed percentage (mark-up) to give the normal selling price. The mark-up is credited to a memorandum departmental 'Mark-up account', any reduction in selling prices (mark-down) will require adjustment in the stock account and in mark-up account. The mark up for Department A for the last three years has been 25%. Figures relevant to Department A for the year ended 31st March, 20X2 were as follows:

Opening stock as on 1st April, 20X1, at cost	₹ 65,000
Purchase at cost	₹ 2,00,000
Sales ₹ 3,00,000	

It is further ascertained that :

- (1) Shortage of stock found in the year ending 31.03.20X2, costing ₹ 1,000 were written off.

- (2) Opening stock on 01.04.20X1 including goods costing ₹ 6,000 had been sold during the year and had been marked down in the selling price by ₹ 600. The remaining stock had been sold during the year.
- (3) Goods purchased during the year were marked down by ₹ 1,200 from a cost of ₹ 15,000. Marked-down stock costing ₹ 5,000 remained unsold on 31.03.20X2.
- (4) The departmental closing stock is to be valued at cost subject to adjustment for mark-up and mark-down.

You are required to prepare:

- (i) A Departmental Trading Account for Department A for the year ended 31st March, 20X2 in the books of Head Office.
- (ii) A Memorandum Stock Account for the year.
- (iii) A Memorandum Mark-up Account for the year.

## ANSWERS/ SOLUTIONS

### MCQs

1. (c) 2. (c) 3. (a) 4. (c) 5. (a) 6. (a) 7. (b) 8. (c) 9. (b)

### Theoretical Questions

1. The main advantages of departmental accounting are:
  - (i) Evaluation of performance;
  - (ii) Growth potential of each department
  - (iii) Justification of capital outlay;
  - (iv) Judgement of efficiency and
  - (v) Planning and control.

2.

S. No.	Expenses	Basis
1.	Rent, rates and taxes, repairs and maintenance, insurance of building	Floor area occupied by each department (if given) other wise on time basis
2.	Lighting and Heating	Consumption of energy by each

...	expenses (e.g., energy expenses)	department
3.	Selling expenses	Sales of each department

### Practical Problems

1. Calculation of unrealised profit of each department and total unrealised profit

	<b>Dept. A</b>	<b>Dept. B</b>	<b>Dept. C</b>	<b>Total</b>
	₹	₹	₹	₹
Unrealised Profit of: Department A		45,000 x 50/150 = 15,000	42,000 x 20/120 = 7,000	22,000
Department B	40,000 x .25 = 10,000		72,000 x .15 = 10,800	20,800
Department C	39,000 x 30/130 = 9,000	42,000 x 40/140 = 12,000		<u>21,000</u>
				<u>63,800</u>

2. Calculation of correct Profits

	<b>Department X</b>	<b>Department Y</b>	<b>Department Z</b>
	₹	₹	₹
Profit after charging managers' commission	36,000	27,000	18,000
Add back : Managers' commission (1/9)	<u>4,000</u>	<u>3,000</u>	<u>2,000</u>
	40,000	30,000	20,000
Less : Unrealised profit on stock (Working Note)	<u>(4,000)</u>	<u>(4,500)</u>	<u>(2,000)</u>
Profit before Manager's commission	36,000	25,500	18,000
Less : Commission for Department Manager @ 10%	<u>(3,600)</u>	<u>(2,550)</u>	<u>(1,800)</u>
Departmental Profits after manager's commission	<u>32,400</u>	<u>22,950</u>	<u>16,200</u>

**Working Note :****Stock lying with**

	<i>Dept. X</i>	<i>Dept. Y</i>	<i>Dept. Z</i>	<i>Total</i>
	₹	₹	₹	₹
Unrealised Profit of:				
Department X		$1/5 \times 15,000 = 3,000$	$1/11 \times 11,000 = 1,000$	4,000
Department Y	$0.15 \times 14,000 = 2,100$		$0.20 \times 12,000 = 2,400$	4,500
Department Z	$1/6 \times 6,000 = 1,000$	$1/5 \times 5,000 = 1,000$		2,000

**3. Correct departmental profits**

	<i>Departments</i>		
	<i>R</i>	<i>S</i>	<i>T</i>
	₹	₹	₹
Profit before adjustment of unrealised profits	54,000	40,500	27,000
Add : Managerial commission (1/9)	<u>6,000</u>	<u>4,500</u>	<u>3,000</u>
	60,000	45,000	30,000
Less: Unrealised profit on stock (Refer W.N.)	<u>(6,000)</u>	<u>6,750</u>	<u>(3,000)</u>
	54,000	38,250	27,000
Less: Managers' commission @ 10%	<u>(5,400)</u>	<u>(3,825)</u>	<u>(2,700)</u>
Profit after adjustment of unrealised profits	<u>48,600</u>	<u>34,425</u>	<u>24,300</u>

**Working Notes:****Value of unrealised profit**

	₹
<b>Transfer by department R to</b>	
S department ( $22,500 \times 25/125$ ) = 4,500	
T department ( $16,500 \times 10/110$ ) = <u>1,500</u>	6,000
<b>Transfer by department S to</b>	
R department ( $21,000 \times 15/100$ ) = 3,150	



T department $(18,000 \times 20/100) = \underline{3,600}$	6,750
<b>Transfer by department T to</b>	
R department $(9,000 \times 20/120) = 1,500$	
S department $(7,500 \times 25/125) = \underline{1,500}$	3,000

4.

**(i) Department Trading Account****For the year ending on 31.03.20X2****In the books of Head Office**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Opening Stock	65,000	By Sales	3,00,000
To Purchases	2,00,000	By Shortage	1,000
To Gross Profit c/d (b.f.)	<u>58,880</u>	By Closing Stock	<u>22,880</u>
	<u>3,23,880</u>		<u>3,23,880</u>

**(ii)****Memorandum stock account (for Department A) (at selling price)**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d (₹ 65,000 + 25% of ₹ 65,000)	81,250	By Profit & Loss A/c (Cost of Shortage)	1,000
To Purchases (₹ 2,00,000 + 25% of ₹ 2,00,000)	2,50,000	By Memorandum Departmental Mark up A/c (Load on Shortage) (₹ 1,000 x 25%)	250
		By Memorandum Departmental Mark-up A/c (Mark-down on Current Purchases)	1,200
		By Debtors A/c (Sales)	3,00,000
		By Memorandum Departmental Mark-up A/c (Mark Down on Opening Stock)	600
		By Balance c/d (b.f.)	28,200
	<u>3,31,250</u>		<u>3,31,250</u>

(iii)

**Memorandum Departmental Mark-up Account**

Particulars	₹	Particulars	₹
To Memorandum Departmental Stock A/c (₹ 1,000 × 25/100)	250	By Balance b/d (₹ 81,250 × 25/125)	16,250
To Memorandum Departmental Stock A/c	1,200	By Memorandum Departmental Stock A/c (₹ 2,50,000 × 25/125)	50,000
To Memorandum Departmental Stock A/c	600		
To Gross Profit transferred to Profit & Loss A/c	58,880		
To Balance c/d [(₹ 28,200 + 400*) × 25/125 - ₹ 400]	5,320		
	66,250		66,250

\*[₹ 1,200 × 5,000/15,000] = ₹ 400

**Working Notes:****(i) Calculation of Cost of Sales**

		₹
A	Sales as per Books	3,00,000
B	Add: Mark-down in opening stock (given)	600
C	Add: mark-down in sales out of current Purchases (₹ 1,200 × 10,000 /15,000)	800
D	Value of sales if there was no mark-down (A+B+C)	3,01,400
E	Less: Gross Profit (25/125 of ₹ 3,01,400) subject to Mark Down (₹ 600 + ₹ 800)	(60,280)
F	Cost of sales (D-E)	2,41,120

**(ii) Calculation of Closing Stock**

		₹
A	Opening Stock	65,000
B	Add: Purchases	2,00,000
C	Less: Cost of Sales	(2,41,120)
D	Less: Shortage	(1,000)
E	Closing Stock (A+B-C-D)	22,880

**Note:** It has been assumed that mark up (given in question) is determined as a percentage of cost.