

CA
PAKISTAN



The Institute of
Chartered Accountants
of Pakistan

2015

FINANCIAL ACCOUNTING AND REPORTING I

STUDY TEXT

CAF-05



Financial accounting and reporting I



The Institute of
Chartered Accountants
of Pakistan

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PAKISTAN

Second edition published by
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Bracknell, Berkshire, RG12 1AX United Kingdom
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Syllabus objective and learning outcomes

CERTIFICATE IN ACCOUNTING AND FINANCE

FINANCIAL ACCOUNTING AND REPORTING I

Objective

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

Learning Outcomes

On the successful completion of this paper candidates will be able to:

1	prepare financial statements in accordance with specified international pronouncements.
2	account for simple transactions related to inventories and property, plant and equipment in accordance with international pronouncements.
3	understand the nature of revenue and be able to account for the same in accordance with international pronouncements.
4	prepare financial statements in accordance with specified international pronouncements.
5	understand the fundamentals of accounting for the cost of production.

Grid	Weighting
Preparation of components of financial statements	18-22
Income and expenditure account and preparation of accounts from incomplete records	15-20
Accounting for inventories; and property, plant and equipment	25-35
Revenue accounting	12-18
Branch accounts	8-12
Introduction to cost of production	8-12
Total	100

Contents	Level	Learning Outcomes
Preparation of components of financial statements with adjustments included in the syllabus		
Preparation of statement of financial position (IAS 1)	1	LO1.1.1: Prepare simple statement of financial position in accordance with the guidance in IAS 1 from data and information provided
Preparation of statement of comprehensive income (IAS 1)	1	LO1.2.1: Prepare simple statement of comprehensive income in accordance with the guidance in IAS 1 from data and information provided
Preparation of statement of cash flows (IAS 7)	1	<p>LO 1.3.1: Demonstrate through understanding of cash and cash equivalents, operating, investing and financing activities</p> <p>LO 1.3.2: Calculate changes in working capital to be included in the operating activities</p> <p>LO1.3.3: Compute items which are presented on the statement of cash flows</p> <p>LO1.3.4: Prepare a statement of cash flows of an entity in accordance with IAS 7 using direct and indirect method.</p>
Income and expenditure account	2	LO1.4.1: Prepare simple income and expenditure account using data and information provided

Contents	Level	Learning Outcomes
Preparation of accounts from incomplete records	2	<p>LO1.5.1: Understand situations that might necessitate the preparation of accounts from incomplete records (stock or assets destroyed, cash misappropriation or lost, accounting record destroyed etc.)</p> <p>LO1.5.2: Understand and apply the following techniques used in incomplete record situations:</p> <ul style="list-style-type: none"> • Use of the accounting equation • Use of opening and closing balances of ledger accounts. • Use of a cash and / or bank summary <p>Use of markup on cost and gross and net profit percentage</p>
Accounting for inventories (IAS 2); and property, plant and equipment (IAS-16)		
Application of cost formulas (FIFO/ weighted average cost) on perpetual and periodic inventory system	2	<p>LO2.1.1: Understand and analyze the difference between perpetual and periodic inventory systems</p> <p>LO2.1.2: Understand and analyze the difference between FIFO and weighted average cost formulas and use them to estimate the cost of inventory</p> <p>LO2.1.3: Account for the application of cost formulas (FIFO/ weighted average cost) on perpetual and periodic inventory system</p> <p>LO2.1.4: Identify the impact of inventory valuation methods on profit.</p>
Cost of inventories (cost of purchase, cost of conversions, other costs)	2	<p>LO2.2.1: Calculate cost of inventory in accordance with IAS-2 using data provided including cost of purchase, cost of conversions, and other costs</p> <p>LO2.2.2: Identify relevant and irrelevant cost from data provided.</p>

Contents	Level	Learning Outcomes
Measurement of inventories (lower of cost or net realizable value)	2	<p>LO2.3.1: Describe net realizable value (NRV)</p> <p>LO2.3.2: Explain the situation when the cost of inventories may not be recoverable</p> <p>LO2.3.3: Demonstrate the steps in measuring inventory at lower of cost or NRV</p> <p>LO2.3.4: Post journal entries for adjustments in carrying value (excluding reversal of write downs).</p>
Presentation of inventories in financial statements	2	LO2.4.1: Understand the disclosure requirements and prepare extracts of necessary disclosures (excluding pledged inventories and reversal of write downs).
Initial and subsequent measurement of property, plant & equipment (components of cost, exchange of assets)	1	<p>LO2.5.1: Calculate the cost on initial recognition of property, plant and equipment in accordance with IAS-16 including different elements of cost and the measurement of cost</p> <p>LO2.5.2: Analyse subsequent expenditure that may be capitalised, distinguishing between capital and revenue items.</p>
IAS 2 and IAS-16 (continued)		
Measurement after recognition of property, plant and equipment	1	LO2.6.1: Present property, plant and equipment after recognition under cost model and revaluation model using data and information provided.
Depreciation - depreciable amount, depreciation period and depreciation method	1	<p>LO2.7.1: Define depreciation, depreciable amount and depreciation period</p> <p>LO2.7.2: Calculate depreciation according to the following methods</p> <ul style="list-style-type: none"> • straight-line, • diminishing balance • the units of production <p>LO2.7.3: Compute depreciation for assets carried under the cost and revaluation models using information provided including impairment</p>

Contents	Level	Learning Outcomes
		LO2.7.4: Prepare journal entries and ledger accounts.
De-recognition	1	<p>LO2.8.1: Account for derecognition of property, plant and equipment recognised earlier under cost and revaluation methods</p> <p>LO2.8.2: Post journal entries to account for de-recognition using data provided.</p>
Revenue accounting		
Revenue (IAS-18)	2	<p>LO3.1.1: Describe revenue</p> <p>LO3.1.2: Apply the principle of substance over form to the recognition of revenue</p> <p>LO3.1.3: Describe and demonstrate the accounting treatment (measurement and recognition) for revenue arising from the following transactions and events:</p> <ul style="list-style-type: none"> • sale of goods; • rendering of services • use by others of entity assets yielding interest, royalties and dividends.
Branch accounts		
Branch accounts (excluding foreign branches)	2	<p>LO4.1.1: Describe the special features of branch accounting including differences to routine accounting</p> <p>LO4.1.2: Understand and apply the treatment of branch inventory, branch mark-up, goods sent to branch and branch debtors; in the books of head office</p> <p>LO4.1.3: Prepare trading/income statement of branch.</p>
Introduction to cost of production		
Meaning and scope of cost accounting	2	LO5.1.1: Explain the scope of cost accounting and managerial accounting and compare them with financial accounting.

Contents	Level	Learning Outcomes
Analysis of fixed, variable and semi variable expenses	2	<p>LO5.2.1: Explain using examples the nature and behaviour of costs</p> <p>LO5.2.2: Explain using examples fixed, variable, and semi variable costs.</p>
Direct and indirect cost	2	LO5.3.1: Identify and apply the concept of direct and indirect costs in given scenarios.
Cost estimation using high-low points method and linear regression analysis	2	<p>LO5.4.1: Apply high-low points' method in cost estimation techniques.</p> <p>LO5.4.2: Apply regression analysis for cost estimation.</p>
Product cost and period cost	2	LO5.5.1: Compare and comment product cost and period cost in given scenarios.

IAS 2: Inventories

Contents

- 1 Inventory
- 2 Measurement of inventory
- 3 FIFO and weighted average cost methods

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 2 Account for simple transactions related to inventories and property, plant and equipment in accordance with international pronouncements.

LO2.1.1: *Cost formulas:* Understand and analyse the difference between perpetual and periodic inventory systems.

LO2.1.2: *Cost formulas:* Understand and analyse the difference between FIFO and weighted average cost formulas and use them to estimate the cost of inventory).

LO2.1.3: *Cost formulas:* Account for the application of cost formulas (FIFO/ weighted average cost) on perpetual and periodic inventory system

LO2.1.4: *Cost formulas:* Identify the impact of inventory valuation methods on profit.

LO2.2.1: *Cost of inventories:* Calculate cost of inventory in accordance with IAS-2 using data provided including cost of purchase, cost of conversions, and other costs.

LO2.2.2: *Cost of inventories:* Identify relevant and irrelevant cost from data provided.

LO2.3.1: *Measurement of inventories:* Describe net realizable value (NRV)

LO2.3.2: *Measurement of inventories:* Explain the situation when the cost of inventories may not be recoverable.

LO2.3.3: *Measurement of inventories:* Demonstrate the steps in measuring inventory at lower of cost or NRV.

LO2.3.4: *Measurement of inventories:* Post journal entries for adjustments in carrying value (excluding reversal of write downs)

LO224.1: *Presentation of inventories:* Understand the disclosure requirements and prepare extracts of necessary disclosures (excluding pledged inventories and reversal of write downs).

1 INVENTORY

Section overview

- Definition of inventory
- Periodic inventory system (period end system) – summary
- Perpetual inventory method
- Summary of journal entries under each method
- Inventory counts (stock takes)
- Disclosure requirements for inventory

1.1 Definition of inventory

The nature of inventories varies with the type of business. Inventories are:

- Assets held for sale. For a retailer, these are items that the business sells – its stock-in trade. For a manufacturer, assets held for sale are usually referred to as ‘finished goods’
- Assets in the process of production for sale (‘work-in-progress’ for a manufacturer)
- Assets in the form of materials or supplies to be used in the production process (‘raw materials’ in the case of a manufacturer).

IAS 2: Inventories sets out the requirements to be followed when accounting for inventory.

Recording inventory

In order to prepare a statement of comprehensive income it is necessary to be able to calculate gross profit. This requires the calculation of a cost of sales figure.

There are two main methods of recording inventory so as to allow the calculation of cost of sales.

- Periodic inventory system (period end system)
- Perpetual inventory system

Each method uses a ledger account for inventory but these have different roles.

1.2 Periodic inventory system (period end system) – summary

Opening inventory in the trial balance (a debit balance) and purchases (a debit balance) are both transferred to cost of sales.

This clears both accounts.

Closing inventory is recognised in the inventory account as an asset (a debit balance) and the other side of the entry is a credit to cost of sales.

Cost of sales comprises purchase in the period adjusted for movements in inventory level from the start to the end of the period.

**Illustration: Cost of sales**

	Year 1	Year 2
	Rs.	Rs.
Opening inventory (a debit)	–	X
Purchases (a debit)	X	X
	X	X
Closing inventory (a credit)	(X)	(X)
	(X)	(X)
Cost of sales	X	X

Any loss of inventory is automatically dealt with and does not require a special accounting treatment. Lost inventory is simply not included in closing inventory and thus is written off to cost of sales. There might be a need to disclose a loss as a material item of an unusual nature either on the face of the incomes statement or in the notes to the accounts if it arose in unusual circumstances

1.3 Perpetual inventory method

This is a system where inventory records are continuously updated so that inventory values are always available.

A single account is used to record all inventory movements. The account is used to record purchases in the period and inventory is brought down on the account at each year-end. The account is also used to record all issues out of inventory. These issues constitute the cost of sales.

When the perpetual inventory method is used, a record is kept of all receipts of items into inventory (at cost) and all issues of inventory to cost of sales.

Each issue of inventory is given a cost, and the cost of the items issued is either the actual cost of the inventory (if it is practicable to establish the actual cost) or a cost obtained using a valuation method.

Each receipt and issue of inventory is recorded in the inventory account. This means that a purchases account becomes unnecessary, because all purchases are recorded in the inventory account.

All transactions involving the receipt or issue of inventory must be recorded, and at any time, the balance on the inventory account should be the value of inventory currently held.

**Example:**

Faisalabad Trading had opening inventory of Rs. 10,000.

Purchases during the year were Rs. 30,000.

During the year inventory at a cost of Rs. 28,000 was transferred to cost of sales.

Closing inventory at the end of Year 2 was Rs. 12,000.

The following entries are necessary during the period.

Inventory account			
	Rs.		Rs.
Balance b/d	10,000	Cost of sales	28,000
Cash or creditors (purchases in the year)	30,000		
	<u>40,000</u>	Closing balance c/d	<u>12,000</u>
Opening balance b/d	<u>12,000</u>		<u>40,000</u>

Furthermore, all transactions involving any kind of adjustment to the cost of inventory must be recorded in the inventory account.

**Example:**

Gujrat Retail (GR) had opening inventory of Rs. 100,000.

Purchases during the year were Rs. 500,000. Inventory with a cost of Rs. 18,000 was returned to a supplier. One of the purchases in the above amount was subject to an express delivery fee which cost the company an extra Rs. 15,000 in addition to the above amount.

GR sold goods during the year which had cost Rs. 520,000. Goods which had cost Rs. 20,000 were returned to the company.

Just before the year end goods which had cost Rs. 5,000 were found to have been damaged whilst being handled by GR's staff.

The following entries are necessary during the period.

Inventory account			
	Rs.		Rs.
Balance b/d	100,000	Returns to supplier	18,000
Cash or creditors (purchases in the year)	500,000		
Special freight charge	15,000	Cost of goods sold	500,000
Returns from customers	20,000	Normal loss	5,000
	<u>635,000</u>	Closing balance c/d	<u>112,000</u>
Opening balance b/d	<u>112,000</u>		<u>635,000</u>

Inventory cards

The receipts and issues of inventory are normally recorded on an inventory ledger card (bin card). In modern systems the card might be a computer record.



Example: Inventory ledger card

On 1 January a company had an opening inventory of 100 units.

During the month it made the following purchases:

5 April: 300 units

14 July: 500 units

22 October: 200 units

During the period it sold 800 units as follows:

9 May: 200 units

25 July: 200 units

23 November: 200 units

12 December: 200 units

Each of these can be shown on an inventory ledger card as follows:

	Receipts (units)	Issues (units)	Balance (units)
Date	Units	Units	Units
1 January b/f	100		100
5 April (purchase)	300		300
			<hr/> 400
9 May (issue)		200	(200)
			<hr/> 200
14 July (purchase)	500		500
			<hr/> 700
25 July (issue)		200	(200)
			<hr/> 500
22 Oct (purchase)	200		200
			<hr/> 700
23 November (issue)		200	(200)
			<hr/> 500
12 December (issue)		200	(200)
	<hr/> 1,100	<hr/> 800	<hr/> 300

Inventory ledger cards also usually record cost information. This is covered in section 3 of this chapter.

1.4 Summary of journal entries under each system

Entry	Periodic inventory method	Perpetual inventory method
Opening inventory	Closing inventory as measured and recognised brought forward from last period	Closing balance on the inventory account as at the end of the previous period
Purchase of inventory	Dr Purchases Cr Payables/cash	Dr Inventory Cr Payables/cash
Freight paid	Dr Carriage inwards Cr Payables/cash	Dr Inventory Cr Payables/cash
Return of inventory to supplier	Dr Payables Cr Purchase returns	Dr Payables Cr Inventory
Sale of inventory	Dr Receivables Cr Sales	Dr Receivables Cr Sales and Dr Cost of goods sold Cr Inventory
Return of goods by a supplier	Dr Sales returns Cr Receivables	Dr Sales returns Cr Receivables and Dr Inventory Cr Cost of goods sold
Normal loss	No double entry	Dr Cost of goods sold Cr Inventory
Abnormal loss	Dr Abnormal loss Cr Purchases	Dr Abnormal loss Cr Inventory
Closing inventory	Counted, valued and recognised by: Dr Inventory (statement of financial position) Cr Cost of sales (cost of goods sold)	Balance on the inventory account

1.5 Inventory counts (stock takes)

A stock take is a physical verification of the amount of inventory that a business has.

Each item of inventory is counted and entered onto inventory sheets. The inventory counted can then be valued.

Periodic inventory systems

Inventory counts are vital for the operation of the periodic inventory system as it depends on the closing inventory at the end of each period being recognised in the system of accounts.

Perpetual inventory systems

Inventory counts are also important to the operation of perpetual inventory systems as they identify differences between the balance on the inventory account (the inventory that should be there) and the actual physical quantity of inventory.

The inventory account must be adjusted for any material difference.

Any difference should be investigated. Possible causes of difference between the balance on the inventory account and the physical inventory counted include the following.

- Theft of inventory.
- Damage to inventory with failure to record that damage.
- Mis-posting of inventory receipts or issues (for example posting component A as component B).
- Failure to record a receipt.
- Failure to record an issue.

Timing of inventory counts

Ideally the inventory count takes place on the last day of an accounting period (the reporting date). However, this is not always possible due to the day on which the last day of the accounting period falls or perhaps, not having enough employees to count the inventory at all sites at the same time.

If the inventory is counted at a date that differs from the reporting date the balance must be adjusted for transactions between the two dates.



Example: Timing of inventory counts

Sukkur Trading has a 31 December year end. It carried out an inventory count on 5th January 2014. The count was valued at Rs.2,800,000.

The following transactions took place between the 31 December and 5 January.

1. Sales of goods for Rs. 120,000. These goods cost Rs. 96,000.
2. Purchases of goods for Rs. 136,000.

The inventory at the reporting date is calculated as follows:

	Rs.
Inventory on 5 January	2,800,000
Add back cost of inventory sold since 31 December	96,000
Deduct purchase since 31 December	(136,000)
Inventory at 31 December	2,760,000

1.6 Disclosure requirements for inventory

IAS 2 requires the following disclosures in notes to the financial statements.

- ❑ The accounting policy adopted for measuring inventories, including the cost measurement method used.
- ❑ The total carrying amount of inventories, classified appropriately. (For a manufacturer, appropriate classifications will be raw materials, work-in-progress and finished goods.)
- ❑ The amount of inventories carried at net realisable value or NRV.
- ❑ The amount of inventories written down in value, and so recognised as an expense during the period.
- ❑ Details of any circumstances that have led to the write-down of inventories to NRV.
- ❑ The amount of any reversal of any write-down that is recognized as a reduction in the amount of inventories recognized as expense in the period.
- ❑ The circumstances or events that led to the reversal of a write-down of inventories.

2 MEASUREMENT OF INVENTORY

Section overview

- Introduction
- Cost of inventories
- Net realisable value
- Accounting for a write down

2.1 Introduction

The measurement of inventory can be extremely important for financial reporting, because the measurements affect both the cost of sales (and profit) and also total asset values in the statement of financial position.

There are several aspects of inventory measurement to consider:

- Should the inventory be valued at cost, or might a different measurement be more appropriate?
- Which items of expense can be included in the cost of inventory?
- What measurement method should be used when it is not practicable to identify the actual cost of inventory?

IAS 2: gives guidance on each of these areas.

Measurement rule

IAS 2 requires that inventory must be measured in the financial statements at the **lower** of:

- cost, or
- net realisable value (NRV).

The standard gives guidance on the meaning of each of these terms.

2.2 Cost of inventories

IAS2 states that 'the cost of inventories shall comprise all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

Purchase cost

The **purchase cost** of inventory will consist of the following:

- the purchase price
- plus import duties and other non-recoverable taxes (but excluding recoverable sales tax)
- plus transport, handling and other costs directly attributable to the purchase (carriage inwards), if these costs are additional to the purchase price.

The purchase price **excludes** any settlement discounts, and is the cost after deduction of trade discount.



Example: Purchase cost I

Kasur Consumer Electrics (KCE) buys goods from an overseas supplier.

It has recently taken delivery of 1,000 units of component X.

The quoted price of component X was Rs. 1,200 per unit but KCE has negotiated a trade discount of 5% due to the size of the order.

The supplier offers an early settlement discount of 2% for payment within 30 days and KCE intends to achieve this.

Import duties of Rs. 60 per unit must be paid before the goods are released through custom.

Once the goods are released through customs KCE must pay a delivery cost of Rs. 5,000 to have the components taken to its warehouse.

	Rs.
Purchase price (1,000 × Rs. 1,200 × 95%)	1,140,000
Import duties (1,000 × Rs. 60)	60,000
Delivery cost	5,000
Cost of inventory	<u>1,205,000</u>

The intention to take settlement discount is irrelevant.

Conversion costs

When materials purchased from suppliers are converted into another product in a manufacturing or assembly operation, there are also conversion costs to add to the purchase costs of the materials. Conversion costs must be included in the cost of finished goods and unfinished work in progress.

Conversion costs consist of:

- ❑ costs directly related to units of production, such as costs of direct labour (i.e. the cost of the labour employed to perform the conversion work)
- ❑ fixed and variable **production** overheads, which must be allocated to costs of items produced and closing inventories. (Fixed production overheads must be allocated to costs of finished output and closing inventories on the basis of the **normal production capacity** in the period)
- ❑ other costs incurred in bringing the inventories to their present location and condition.

You may not have studied cost and management accounting yet but you need to be aware of some of the costs that are included in production overheads (also known as factory overheads). Production overheads include:

- ❑ costs of indirect labour, including the salaries of the factory manager and factory supervisors
- ❑ depreciation costs of non-current assets used in production
- ❑ costs of carriage inwards, if these are not included in the purchase costs of the materials

Only production overheads are included in costs of finished goods inventories and work-in-progress. Administrative costs and selling and distribution costs must not be included in the cost of inventory.

Note that the process of allocating costs to units of production is usually called absorption. This is usually done by linking the total production overhead to some production variable, for example, time, wages, materials or simply the number of units expected to be made.



Example: Conversion costs

Kasur Consumer Electrics (KCE) manufactures control units for air conditioning systems.

The following information is relevant:

Each control unit requires the following:

1 component X at a cost of Rs 1,205 each

1 component Y at a cost of Rs 800 each

Sundry raw materials at a cost of Rs. 150.

The company faces the following monthly expenses: Rs.

Factory rent 16,500

Energy cost 7,500

Selling and administrative costs 10,000

Each unit takes two hours to assemble. Production workers are paid Rs. 300 per hour.

Production overheads are absorbed into units of production using an hourly rate. The normal level of production per month is 1,000 hours.

The cost of a single control unit is as follows: Rs.

Materials:

Component X 1,205

Component Y 800

Sundry raw materials 150

2,155

Labour (2 hours × Rs. 300) 600

Production overhead ($\text{Rs. } 16,500 + 7,500 / 1,000 \text{ hours} \times 2 \text{ hours}$) 48

2,803

The selling and administrative costs are not part of the cost of inventory

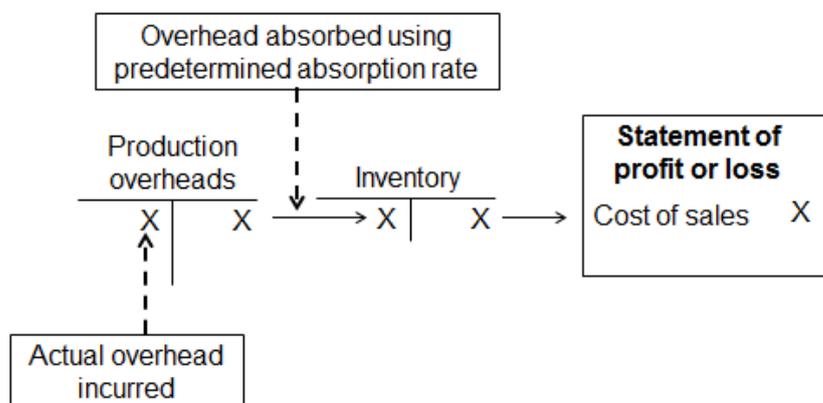
Flow of information

Production overhead is recognised in an expense account in the usual way. Production overhead is then transferred from this account to an inventory account (perhaps via a work-in-progress account) as units are produced.

**Illustration: Production overhead double entry**

	Debit	Credit
Production overhead	X	
Cash/payables		X
Being the recognition of production overhead expense		
Inventory	X	
Production overhead		X
Being the transfer of production overhead into inventory		
Statement of profit or loss (cost of sales)	X	
Inventory		X
Being the transfer of inventory cost to cost of sales		

The flow of information can be represented by the following diagram:

**Illustration: Production overhead double entry**

Normal production capacity

Fixed production overheads must be absorbed based on normal production capacity even if this is not achieved in a period.

Normal capacity is the production expected to be achieved on average over a number of periods or seasons under normal circumstances. The actual level of production may be used if it approximates normal capacity.

The amount of fixed overhead allocated to each unit of production is not increased if actual production capacity falls short of the normal capacity for any reason.

Similarly, the amount of fixed overhead allocated to each unit of production is not decreased if actual production capacity is higher than the normal capacity for any reason.

Usually, the actual fixed production overhead recognised as part of the inventory cost differs from the actual fixed production overhead incurred. Any difference is recognised as an expense or a reduction of an expense (usually cost of sales).

- ❑ Under-absorption (fixed production overhead in inventory is less than fixed production overhead incurred) is a debit to cost of sales.
- ❑ Over-absorption (fixed production overhead in inventory is greater than fixed production overhead incurred) is a credit to cost of sales.



Example: Normal production capacity (under absorption)

A business plans for fixed production overheads of Rs. 1,000,000 per annum.

The normal level of production is 100,000 units per annum.

Due to supply difficulties the business was only able to make 75,000 units in the current year.

Other costs per unit were Rs. 126.

The cost per unit is:	Rs.
Other costs	126
Fixed production overhead <small>(Rs. 1,000,000 / 100,000 units)</small>	10
Unit cost	136

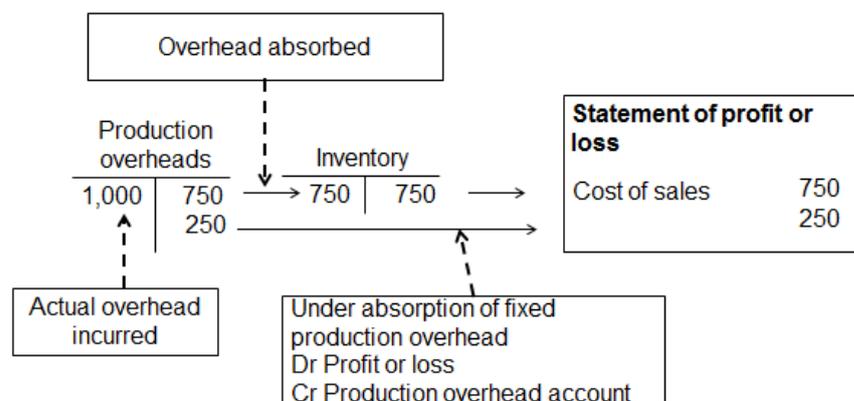
Note:	Rs.
The amount absorbed into inventory is (75,000 × Rs. 10)	750,000
Total fixed production overhead	1,000,000
The amount not absorbed into inventory	250,000

The Rs. 250,000 that has not been included in inventory is expensed (i.e. recognised in the statement of comprehensive income).

This is represented in the following diagram.



Illustration: Production overhead double entry



This may seem a little pointless at first sight. After all the cost incurred of Rs. 1,000 is the same as the cost recognised in the statement of profit or loss (Rs. 750 + Rs. 250). However, the Rs. 250 in the statement of profit or loss is expensed. In other words, it is not part of the cost of inventory.



Example: Normal production capacity (under absorption)

A business plans for fixed production overheads of Rs. 1,000,000 per annum.

The normal level of production is 100,000 units per annum but due to supply difficulties the business was only able to make 75,000 units in the current year.

Other costs per unit were Rs. 126.

The company sold 50,000 of the units leaving a closing inventory of 25,000 units at the year-end.

The cost per unit is:	Rs.
Other costs	126
Fixed production overhead (Rs. 1,000,000 / 100,000 units)	10
Unit cost	<u>136</u>

The cost of sales would be as follows:	Rs.
Production costs (75,000 × Rs. 136)	<u>10,200,000</u>
Under-absorption of fixed production overhead	<u>250,000</u>
Total production costs	10,450,000
Closing inventory (25,000 × Rs. 136)	<u>(3,400,000)</u>
	<u>7,050,000</u>

This is equal to:	Rs.
50,000 × Rs. 136	6,800,000
Plus under-absorbed fixed production overhead	<u>250,000</u>
	<u>7,050,000</u>

The above example considers the situation where the fixed production incurred in the period is more than that absorbed (under-absorption). The opposite could also be true.



Example: Normal production capacity (over-absorption)

A business plans for fixed production overheads of Rs. 1,000,000 per annum.

The normal level of production is 100,000 units per annum.

The business made 110,000 units in the current year.

Other costs per unit were Rs. 126.

The company sold 90,000 units in the period (leaving 20,000 units in inventory at the year-end).

The cost per unit is:	Rs.
Other costs	126
Fixed production overhead ($\text{Rs. } 1,000,000 / 100,000 \text{ units}$)	10
Unit cost	136

Note:	Rs.
The amount absorbed into inventory is ($110,000 \times \text{Rs. } 10$)	1,100,000
Total fixed production overhead	1,000,000
The amount over absorbed into inventory	100,000

The extra Rs. 100,000 that has been included in inventory is credited to the statement of comprehensive income.

The cost of sales would be as follows:	Rs.
Production costs ($110,000 \times \text{Rs. } 136$)	14,960,000
Over-absorption of fixed production overhead	(100,000)
Total production costs	14,860,000
Closing inventory ($20,000 \times \text{Rs. } 136$)	(2,720,000)
	12,140,000

This is equal to:	Rs.
$90,000 \times \text{Rs. } 136$	12,240,000
Less over-absorbed fixed production overhead	100,000
	12,140,000

2.3 Net realisable value



Definition

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

Net realisable value is the amount that can be obtained from selling the inventory in the normal course of business, less any further costs that will be incurred in getting it ready for sale or disposal.

- Net realisable value is usually higher than cost. Inventory is therefore usually valued at cost.
- However, when inventory loses value, perhaps because it has been damaged or is now obsolete, net realisable value will be lower than cost.

The cost and net realisable value should be compared for each separately-identifiable item of inventory, or group of similar inventories, rather than for inventory in total.



Example:

A business has four items of inventory. A count of the inventory has established that the amounts of inventory currently held, at cost, are as follows:

	Rs.		
	Cost	Sales price	Selling costs
Inventory item A1	8,000	7,800	500
Inventory item A2	14,000	18,000	200
Inventory item B1	16,000	17,000	200
Inventory item C1	6,000	7,500	150

The value of closing inventory in the financial statements:

	Lower of:	Rs.
A1	8,000 or (7,800 - 500)	7,300
A2	14,000 or (18,000 - 200)	14,000
B1	16,000 or (17,800 - 500)	16,000
C1	6,000 or (7,000 - 200)	6,000
Inventory measurement		<u>43,300</u>

Net realisable value might be lower than cost so that the cost of inventories may not be recoverable in the following circumstances:

- inventories are damaged;
- inventories have become wholly or partially obsolete; or,
- selling prices have declined.

2.4 Accounting for a write down

When the cost of an item of inventory is less than its net realisable value the cost must be written down to that amount.

Component A1 in the previous example was carried at a cost of Rs. 8,000 but its NRV was estimated to be Rs. 7,300. The item must be written down to this amount. How this is achieved depends on circumstance and the type of inventory accounting system.

Perpetual inventory systems

The situation here is similar to that for inventory loss.

The inventory must be written down in the system by the following journal:



Illustration:

	Debit	Credit
Cost of sales	X	
Inventory		X

Period end system / Periodic inventory system

If the necessity for the write down is discovered during an accounting period then no special treatment is needed. The inventory is simply measured at the NRV when it is included in the year end financial statements. This automatically includes the write down in cost of sales.

If the problem is discovered after the financial statements have been drafted (and before they are finalised) the closing inventory must be adjusted as follows:



Illustration:

	Debit	Credit
Statement of comprehensive income closing inventory (cost of sales)	X	
Inventory in the statement of financial position		X

3 FIFO AND WEIGHTED AVERAGE COST METHODS

Section overview

- Cost formulas
- First-in, first-out method of measurement (FIFO)
- Weighted average cost (AVCO) method
- Profit impact

3.1 Cost formulas

With some inventory items, particularly large and expensive items, it might be possible to recognise the actual cost of each item.

In practice, however, this is unusual because the task of identifying the actual cost for all inventory items is impossible because of the large numbers of such items.

A system is therefore needed for measuring the cost of inventory.

The historical cost of inventory is usually measured by one of the following methods:

- First in, first out (FIFO)
- Weighted average cost (AVCO)



Illustration

On 1 January a company had an opening inventory of 100 units which cost Rs.50 each.

During the month it made the following purchases:

- 5 April: 300 units at Rs. 60 each
- 14 July: 500 units at Rs. 70 each
- 22 October: 200 units at Rs. 80 each.

During the period it sold 800 units as follows:

- 9 May: 200 units
- 25 July: 200 units
- 23 November: 200 units
- 12 December: 200 units

This means that it has 300 units left (100 + 300 + 500 + 200 - (200 + 200 + 200 + 200 + 200)) but what did they cost?

FIFO and AVCO are two techniques that provide an answer to this question.

Note:

- First in, first out (FIFO) tends to be used in periodic inventory systems but may be used in perpetual inventory systems also.
- Weighted average cost (AVCO) is easier to apply when a perpetual inventory system is used.

3.2 First-in, first-out method of measurement (FIFO)

With the first-in, first-out method of inventory measurement, it is assumed that inventory is consumed in the strict order in which it was purchased or manufactured. The first items that are received into inventory are the first items that go out.

To establish the cost of inventory using FIFO, it is necessary to keep a record of:

- ❑ the date that units of inventory are received into inventory, the number of units received and their purchase price (or manufacturing cost)
- ❑ the date that units are issued from inventory and the number of units issued.

With this information, it is possible to put a cost to the inventory that is issued (sold or used) and to identify the cost of the items still remaining in inventory.

Since it is assumed that the first items received into inventory are the first units that are used, it follows that the value of inventory at any time should be the cost of the most recently-acquired units of inventory.



Example: FIFO (returning to the previous example)

On 1 January a company had an opening inventory of 100 units which cost Rs.50 each.

During the month it made the following purchases:

- 5 April: 300 units at Rs. 60 each (= Rs. 18,000)
- 14 July: 500 units at Rs. 70 each (= Rs. 35,000)
- 22 October: 200 units at Rs. 80 each (= Rs. 16,000)

During the period it sold 800 units as follows:

- 9 May: 200 units
- 25 July: 200 units
- 23 November: 200 units
- 12 December: 200 units

The cost of each material issue from store in October and the closing inventory using the FIFO measurement method is as follows:

FIFO measures inventory as if the first inventory sold is always the first inventory purchased.

Consider the flow of units:

	Bf	5	14	22
	(units)	April	July	October
		(units)	(units)	(units)
Purchased	100	300	500	200
Issues on:				
9 May (200)	(100)	(100)		
25 Jul (200)		(200)		
23 Nov (200)			(200)	
12 Dec (200)			(200)	
Closing inventory	—	—	100	200

**Example (continued): Measurement**

	Cost per unit	Rs.
Issues on 9 May		
100 units in opening inventory	50	5,000
100 units purchased on 5 April	60	6,000
Cost of issue		<u>11,000</u>
Issues on 25 July		
200 units purchased on 5 April	60	12,000
Cost of issue		<u>12,000</u>
Issues on 23 November		
200 units purchased on 14 July	70	14,000
Cost of issue		<u>14,000</u>
Issues on 12 December		
200 units purchased on 14 July	70	14,000
Cost of issue		<u>14,000</u>
Closing inventory		
100 units purchased on 14 July	70	7,000
200 units purchased on 22 October	80	16,000
		<u>23,000</u>

This looks more complicated than it needs to be. This is because the cost of each individual issue has been calculated. However, usually we would not be interested in the cost of individual issues so much as the overall cost of sale and closing inventory. When this is the case the calculations become much easier.

This is because the total costs of buying the inventory are known so only the closing inventory has to be measured. This is done assuming that it is from the most recent purchases (because FIFO assumes that the inventory bought earlier has been sold).

**Example (continued): Measuring closing inventory only**

	Rs.
Value of opening inventory	5,000
Purchases in the period (18,000 + 35,000 + 16,000)	69,000
	<u>74,000</u>
Value of closing inventory (31 December)	
(200 purchased on 22 October @ Rs.80)	16,000
(100 purchased on 14 July @ Rs.70)	7,000
	<u>(23,000)</u>
Cost of materials issued in October	<u>51,000</u>

Inventory ledger card

The purchases and issues can be recorded on an inventory ledger card as follows.



Example: Inventory ledger card (FIFO)

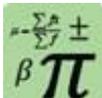
Date	Receipts			Issues			Balance		
	Qty	@	Rs.	Qty	@	Rs.	Qty	@	Rs.
1 Jan b/f	100	50	5,000				100	50	5,000
5 Apr	300	60	18,000				300	60	18,000
							400	50/60	23,000
9 May				100	50	5,000	100	50	5,000
				100	60	6,000	100	60	6,000
				200	50/60	11,000	(200)	50/60	(11,000)
							200	60	12,000
14 Jul	500	70	35,000				500	70	35,000
							700	60/70	47,000
25 Jul				200	60	12,000	(200)	60	12,000
							500	70	35,000
22 Oct	200	80	16,000				200	80	16,000
							700	70/80	51,000
23 Nov				200	70	14,000	(200)	70	(14,000)
							500	70/80	37,000
12 Dec				200	70	14,000	(200)	70	(14,000)
	1,100		74,000	800		51,000	300	70/80	23,000

Note:	1,100	minus	800	equals	300
			74,000	minus	51,000
				equals	23,000

3.3 Weighted average cost (AVCO) method

With the weighted average cost (AVCO) method of inventory measurement it is assumed that all units are issued at the current weighted average cost per unit.

A new average cost is calculated whenever more items are purchased and received into store. The weighted average cost is calculated as follows:



Formula: Calculation of new weighted average after each purchase

$$\frac{\text{Cost of inventory currently in store} + \text{Cost of new items received}}{\text{Number of units currently in store} + \text{Number of new units received}} = \text{New weighted average}$$

Items 'currently in store' are the items in store immediately before the new delivery is received.



Example: FIFO (returning to the previous example)

On 1 January a company had an opening inventory of 100 units which cost Rs.50 each.

During the month it made the following purchases:

- 5 April: 300 units at Rs. 60 each (= Rs. 18,000)
- 14 July: 500 units at Rs. 70 each (= Rs. 35,000)
- 22 October: 200 units at Rs. 80 each (= Rs. 16,000)

During the period it sold 800 units as follows:

- 9 May: 200 units
- 25 July: 200 units
- 23 November: 200 units
- 12 December: 200 units

Required

- (a) What was the cost of the material issued from store in the year, using the weighted average cost (AVCO) measurement method?
- (b) What was the value of the closing inventory on 31 December?

The weighted average method calculates a new average cost per unit after each purchase. This is then used to measure the cost of all issues up until the next purchase.

This can be shown using an inventory ledger card as follows.



Example: Inventory ledger card (weighted average method)

Date	Receipts			Issues			Balance		
	Qty	@	Rs.	Qty	@	Rs.	Qty	@	Rs.
1 Jan b/f	100	50	5,000				100	50	5,000
5 Apr	300	60	18,000				300	60	18,000
							400	57.5	23,000
9 May				200	57.5	11,500	(200)	57.5	(11,500)
							200	57.5	11,500
14 Jul	500	70	35,000				500	70	35,000
							700	66.43	46,500
25 Jul				200	66.43	13,286	(200)	66.43	(13,286)
							500	66.43	33,214
22 Oct	200	80	16,000				200	80	16,000
							700	70.31	49,214
23 Nov				200	70.31	14,062	(200)	70.31	(14,062)
							500	70.31	35,152
12 Dec				200	70.31	14,062	(200)	70.31	(14,062)
	1,100		74,000	800		52,910	300	70/80	21,090

Figures in bold have been calculated as an average cost at the date of a purchase.

Note:	1,100	minus	800	equals	300
			74,000	minus	52,910
				equals	21,090



Summary

	Rs.
Value of opening inventory, 1 October	5,000
Purchases in the period	69,000
	<u>74,000</u>
Value of closing inventory, 31 October (see above)	<u>(21,090)</u>
Cost of materials issued in October	
(See figures above: 11,500 + 13,286 + 14,062 + 14,062)	<u>52,910</u>

3.4 Profit impact

Inventory valuation has a direct effect on profit measurement.

Under the periodic inventory system closing inventory is credited to cost of sales. If the value of closing inventory is increased by Rs. 100 then profit would increase by the same amount.

Under the perpetual inventory system cost of sales is comprised of the transfers from the inventory account and the closing inventory is the balance on the account. However, if the closing inventory balance is changed for whatever reason (say because of a difference between the closing inventory on the account and the actual closing inventory measured) the difference impacts cost of sales and hence gross profit. In other words profit is affected by the value assigned to closing inventory.

The figures derived from the cost formula examples above can be used to demonstrate the profit impact of different inventory value.



Example: Profit impact of inventory valuation

The company in the previous examples has sales of Rs. 100,000 in the year.

	Rs.	Rs.
Sales	100,000	100,000
Cost of sales:		
Opening inventory	5,000	5,000
Purchases	69,000	69,000
	74,000	74,000
Closing inventory:		
FIFO	(23,000)	
AVCO		(21,090)
Cost of sales	(51,000)	(52,910)
Gross profit	49,000	47,810

The profit difference is entirely due to how closing inventory is measured under each system.

IAS 16: Property, plant and equipment

Contents

- 1 Initial measurement of property, plant and equipment
- 2 Depreciation and carrying amount
- 3 Methods of calculating depreciation
- 4 Revaluation of property, plant and equipment
- 5 Derecognition of property, plant and equipment
- 6 Disclosure requirements of IAS 16
- 7 Question problems

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 2 Account for simple transactions related to inventories and property, plant and equipment in accordance with international pronouncements.

LO2.5.1: *Initial measurement and subsequent measurement:* Calculate the cost on initial recognition of property, plant and equipment in accordance with IAS-16 including different elements of cost and the measurement of cost.

LO2.5.2: *Initial measurement and subsequent measurement:* Analyse subsequent expenditure that may be capitalised, distinguishing between capital and revenue items.

LO2.6.1: *Measurement after recognition:* Present property, plant and equipment after recognition under cost model and revaluation model using data and information provided.

LO2.7.1: *Depreciation:* Define depreciation, depreciable amount and depreciation period.

LO2.7.2: *Depreciation:* Calculate depreciation according to the following methods: straight-line; diminishing balance; and units of production.

LO2.7.3: *Depreciation:* Compute depreciation for assets carried under the cost and revaluation models using information provided including impairment.

LO2.7.4: *Depreciation:* Prepare journal entries and ledger accounts.

LO2.8.1: *De-recognition:* Account for derecognition of property, plant and equipment recognised earlier under cost and revaluation methods.

LO2.8.2: *De-recognition:* Post journal entries to account for de-recognition using data provided.

1 INITIAL MEASUREMENT OF PROPERTY, PLANT AND EQUIPMENT

Section overview

- Introduction
- Initial measurement
- Exchange transactions
- Subsequent expenditure
- Components of cost
- Measurement after initial recognition

1.1 Introduction

Rules on accounting for property, plant and equipment are contained in **IAS 16 Property, plant and equipment**.



Definitions

Property, plant and equipment are tangible items that:

- are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and
- are expected to be used during more than one period.

1.2 Initial measurement

Property, plant and equipment are initially recorded in the accounts of a business at their cost.



Definition

Cost is the amount of cash or cash equivalents paid and the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction.

The cost of an item of property, plant and machinery consists of:

- its purchase price after any trade discount has been deducted, plus any import taxes or *non-refundable* sales tax; plus
- the directly attributable costs of 'bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management' (IAS 16 **Property, plant and machinery**). These directly attributable costs may include:
 - employee costs arising directly from the installation or construction of the asset
 - the cost of site preparation
 - delivery costs ('carriage inwards')
 - installation and assembly costs
 - testing costs
 - professional fees directly attributable to the purchase.

- When the entity has an obligation to dismantle and remove the asset at the end of its life, its initial cost should also include an estimate of the costs of dismantling and removing the asset and restoring the site where it is located.

The cost of a non-current asset cannot include any administration costs or other general overhead costs.



Example: Cost

A company has purchased a large item of plant.

The following costs were incurred.

List price of the machine	1,000,000
Trade discount given	50,000
Delivery cost	100,000
Installation cost	125,000
Cost of site preparation	200,000
Architect's fees	15,000
Administration expense	150,000

Local government officials have granted the company a license to operate the asset on condition that the company will remove the asset and return the site to its former condition at the end of the asset's life.

The company has recognised a liability of Rs. 250,000 in respect of the expected clearance cost.

The cost of the asset is as follows:

Purchase price of the machine (1,000,000 – 50,000)	950,000
Delivery cost	100,000
Installation cost	125,000
Cost of site preparation	200,000
Architect's fees	15,000
Decommissioning cost	250,000
	1,640,000

The definition of 'cost' for property, plant and equipment has close similarities with the cost of inventories, although property, plant and equipment will often include more items of 'other expense' within cost.

For example when a business entity acquires a new building the cost of the building might include professional fees such as the fees for an architect and surveyor.

Costs are no longer recognised when the item is ready for use. This is when it is in the location and condition necessary for it to be capable of operating in the manner intended by management.

1.3 Exchange transactions

An asset may be acquired in exchange for another asset. The cost of such an asset is measured at its fair value unless:

- ❑ the exchange transaction lacks commercial substance; or
- ❑ the fair value of neither the asset received nor the asset given up is reliably measurable.

If the new asset is measured at fair value, the fair value of the asset given up is used to measure the cost of the asset received unless the fair value of the asset received is more clearly evident.

If the new asset is not measured at fair value, its cost is measured at the carrying amount of the asset given in exchange for it. This would be the case when the exchange lacked commercial substance or when the fair value of either asset cannot be measured.

Lack of commercial substance

The determination of whether an exchange transaction has commercial substance depends on the extent to which future cash flows are expected to change as a result of the transaction. If there is minimal impact on future cash flows then the exchange lacks commercial substance.

1.4 Subsequent expenditure

Subsequent expenditure relating to non-current assets, after their initial acquisition, should be capitalised if it meets the criteria for recognising an asset.

In practice, this means that expenditure is capitalised if it:

- ❑ improves the asset (for example, by enhancing its performance or extending its useful life); or
- ❑ is for a replacement part (provided that the part that it replaces is treated as an item that has been disposed of).

Repairs and maintenance expenditure is revenue expenditure. It is recognised as an expense as it is incurred, because no additional future economic benefits will arise from the expenditure.

A basic rule is that improvements are capitalised but repairs are expensed. You may have to correct situations when an amount spent has not been treated correctly. This is covered in section 6 of this chapter.

1.5 Components of cost

IAS 16 requires that each part of an asset that has a cost that is significant in relation to the total cost of the item must be depreciated separately. This means that the cost of an asset might be split into several different assets and each depreciated separately.



Illustration: Cost

A company has purchased a new Gulf Stream jet for Rs.5,500 million.

The company has identified the following cost components and useful lives in respect of this jet.

	Rs. million	Useful lives
Engines	2,000	3 years
Airframe	1,500	10 years
Fuselage	1,500	20 years
Fittings	500	5 years
	5,500	

1.6 Measurement after initial recognition

IAS 16 allows a choice of accounting treatments after initial recognition.

All items of property, plant and equipment in a class can be accounted for using one of two models:

- ❑ Cost model - Property, plant and equipment is carried at cost less any accumulated depreciation and any accumulated impairment losses.
- ❑ Revaluation model - Property, plant and equipment is carried at a revalued amount. This is the fair value at the date of the revaluation less any subsequent accumulated depreciation and any accumulated impairment losses.

The above choice must be applied consistently. A business cannot carry one item of property, plant & equipment at cost and revalue a similar item. However, a business can use different models for different classes of property, plant & equipment. For example, companies might use the cost model for plant and equipment but use the revaluation model for property.

This chapter proceeds to explain the depreciation which is an important component of both models before continuing to explain the revaluation model in more detail.

2 DEPRECIATION AND CARRYING AMOUNT

Section overview

- Depreciation
- Accounting for depreciation
- Reviews of the remaining useful life and expected residual value
- Impairment

2.1 Depreciation

A business invests in assets in order to generate profit.

The accruals concept results in the recognition of revenue and the cost of earning that revenue in the statement of comprehensive income in the same accounting period.

Depreciation is an expense that matches the cost of a non-current asset to the benefit earned from its ownership. It is calculated so that a business recognises the full cost associated with a non-current asset over the entire period that the asset is used. In effect, the cost of the asset is transferred to the statement of comprehensive income over the life of the asset. This may be several years.

Depreciation is a method of spreading the cost of a non-current asset over its expected useful life (economic life), so that an appropriate portion of the cost is charged in each accounting period.



Definitions (from IAS 16)

Depreciation: The systematic allocation of the depreciable amount of an asset over its useful life.

Depreciable amount: The cost of an asset (or its revalued amount, in cases where a non-current asset is revalued during its life) less its residual value.

Residual value: The expected disposal value of the asset (after deducting disposal costs) at the end of its expected useful life.

Useful life: The period over which the asset is expected to be used by the business entity.

Carrying amount: The amount at which an asset is recognised after deducting any accumulated depreciation and accumulated impairment losses. (Net book value (NBV) is a term that is often used instead of carrying amount).



Example: Depreciation

An item of equipment cost Rs. 300,000 and has a residual value of Rs. 50,000 at the end of its expected useful life of four years.

Depreciation is a way of allocating the depreciable amount of Rs. 250,000 (= Rs. 300,000 - Rs. 50,000) over the four years of the asset's expected life.

Depreciation is charged as an expense in the statement of comprehensive income each year over the life of the asset unless it relates to an asset being used to construct another asset or assets. In this case the depreciation is capitalised as part of the cost of that other assets.

Most property, plant and equipment must be depreciated, although there are some exceptions to this rule. For example, land is not usually depreciated because it has an indefinite useful life.

Land and buildings

Separable assets are dealt with separately for accounting purposes, even when they are acquired together.

- Land - normally has an unlimited life and is therefore not depreciated.
- Buildings – normally have a limited life and are therefore depreciable assets.

Commencement of depreciation

Depreciation of an asset begins when that asset is available for use. This means when the asset is in the location and condition necessary for it to be capable of operating in the manner intended by management.

This might be before the asset is actually used.

Residual value

In practice, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount.

However, in some cases, the residual value may be equal to or greater than the asset's carrying amount. In this case the depreciation charge would be zero.

2.2 Accounting for depreciation

The double entry for depreciation is carried out using two accounts (for each category of non-current asset).



Illustration: Depreciation double entry

	Debit	Credit
Depreciation expense	X	
Accumulated depreciation		X

The balance on the depreciation expense account is taken to the statement of comprehensive income as an expense for the period.

The accumulated depreciation account contains all of the depreciation recognised to date. When the final statement of financial position is prepared it is deducted from the cost of the assets. The non-current asset figure in the statement of financial position is made up of two figures, the cost less accumulated depreciation.

The balance on the accumulated depreciation account is carried forward as a (credit) balance at the end of the period and appears in the statement of financial position as a deduction from the cost of the property, plant and equipment. The figure that appears in the statement of financial position is known as the **carrying amount** (or **net book value**).



Illustration: Carrying amount of a non-current asset

	Rs.	
Non-current asset at cost	X	
Less accumulated depreciation	<u>(X)</u>	
Carrying amount (net book value)	<u>X</u>	This figure appears on the face of the statement of financial position

Accounts in the ledger for property, plant and equipment and accumulated depreciation

There are separate accounts in the general ledger for each category of property, plant and equipment (for example, an account for land and buildings, an account for plant and machinery, an account for office equipment, an account for motor vehicles, and so on) and the accumulated depreciation for each of these categories of property, plant and equipment.

This means that each category of property, plant and equipment can be shown separately in the financial statements.



Example: Accounting for depreciation

A company purchases a non-current asset in Year 1 for Rs. 90,000.

In Year 1, the depreciation charge is Rs. 15,000.

These transactions should be recorded as follows:

Asset account			
Year 1	Rs.		Rs.
Cash/creditors	90,000	Balance c/f	90,000
	<u>90,000</u>		<u>90,000</u>
Year 2			
Balance b/f	90,000		
Accumulated depreciation account			
Year 1	Rs.		Rs.
Balance c/f	15,000	Depreciation account	15,000
	<u>15,000</u>		<u>15,000</u>
Year 2		Balance b/f	15,000
Depreciation account			
Year 1	Rs.		Rs.
Accumulated depreciation	15,000	Statement of comprehensive income	15,000
	<u>15,000</u>		<u>15,000</u>

At the end of Year 1, the carrying amount of the asset in the statement of financial position is:

	Rs.
Non-current asset at cost (or valuation)	90,000
Less: Accumulated depreciation	<u>(15,000)</u>
Carrying amount	<u>75,000</u>

**Example continued:**

The depreciation charge In Year 2 is also Rs. 15,000.

The ledger accounts in Year 2 will be as follows:

Asset account			
Year 2	Rs.		Rs.
Balance b/f	90,000	Balance c/f	90,000
	90,000		90,000
Year 3			
Balance b/f	90,000		
Accumulated depreciation account			
Year 2	Rs.		Rs.
Balance c/f	30,000	Balance b/f	15,000
	30,000	Depreciation account	15,000
			30,000
Year 3		Balance b/f	30,000
Depreciation account			
Year 2	Rs.		Rs.
Accumulated depreciation	15,000	Statement of comprehensive income	15,000
	15,000		15,000

At the end of Year 2, the carrying amount of the asset in the statement of financial position is:

	Rs.
Non-current asset at cost (or valuation)	90,000
Less: Accumulated depreciation	(30,000)
Carrying amount	60,000

**Practice question****1**

An item of equipment cost Rs. 40,000 at the beginning of Year 1. It has an expected life of 5 years.

The annual depreciation charge is Rs. 8,000.

Complete the following ledger accounts for Years 1 and 2 and calculate the carrying amount of the asset at the end of each period.

- a equipment account
- b accumulated depreciation of equipment account
- c depreciation of equipment account

2.3 Reviews of the remaining useful life and expected residual value

Review of useful Life

IAS 16 requires useful lives and residual values to be reviewed at each year-end. Any change is a change in accounting estimate. The carrying amount (cost minus accumulated depreciation) of the asset at the date of change is written off over the (revised) remaining useful life of the asset.



Example:

Chiniot Engineering owns a machine which originally cost Rs. 60,000 on 1 January 2010.

The machine was being depreciated over its useful life of 10 years on a straight-line basis and has no residual value.

On 31 December 2013 Chiniot Engineering revised the total useful life for the machine to eight years (down from the previous 10).

Required

Calculate the depreciation charge for 2013 and subsequent years.



Answer

The change in accounting estimate is made at the end of 2013 but may be applied to the financial statements from 2013 onwards.

	Rs.
Cost on 1 January 2010	60,000
Depreciation for 2010 to 2012 ($60,000 \times 3/10$)	<u>(18,000)</u>
Carrying amount at end of 2012	<u>42,000</u>

Remaining useful life at the end of 2012 = 8 - 3 years = 5 years.

Depreciation for 2013 and subsequent years = Rs. 42,000 ÷ 5 years = Rs. 8,400.

Residual value

The residual value of an item of property, plant and equipment must be reviewed at least at each financial year end and if expectations differ from previous estimates the depreciation rate for the current and future periods is adjusted

A change in the asset's residual value is accounted for prospectively as an adjustment to future depreciation.

**Practice question****2**

A machine was purchased three years ago on 1 January Year 2. It cost Rs.150,000 and its expected life was 10 years with an expected residual value of Rs.30,000.

Due to technological changes, the estimated life of the asset was re-assessed during Year 5. The total useful life of the asset is now expected to be 7 years and the machine is now considered to have no residual value.

The financial year of the entity ends on 31 December.

What is the depreciation charge for the year ending 31 December Year 5?

2.4 Impairment

Both the cost model and the revaluation model refer to impairment losses.

IAS 36 *Impairment of assets* contains detailed guidance on impairment.

**Definition**

Impairment loss: The amount by which the carrying amount of an asset (or a cash-generating unit) exceeds its recoverable amount.

An impairment loss is a write down in the value of an asset to its recoverable amount. IAS 36 operates to ensure that assets are carried in the financial statements at no more than their recoverable amount. (This is very similar to the rule that requires inventory to be measured at the lower of cost and net realisable value).

The recoverable amount of an asset is defined as the higher of its:

- ❑ Fair value less costs to sell (the amount that would be received for the asset in an orderly transaction between market participants less costs of selling it); and
- ❑ Value in use (the present value of future cash flows from using an asset, including its eventual disposal).

You will not be asked to compute these figures in the exam but you might be given the two amounts and be expected to identify the recoverable amount and account for any impairment loss.

**Example: Impairment**

The following information relates to 3 assets.

	Asset 1	Asset 2	Asset 3
Carrying amount	80,000	120,000	140,000
Value in use	150,000	105,000	107,000
Fair value less cost to sell	60,000	90,000	110,000
Recoverable amount	150,000	105,000	110,000
Impairment loss	nil	15,000	30,000

Approach

Impairment of an asset should be identified and accounted for as follows.

- ❑ At the end of each reporting period, a business should assess whether there are any indications that an asset may be impaired.
- ❑ If there are such indications, the business should estimate the asset's recoverable amount.
- ❑ When the recoverable amount is less than the carrying amount of the asset, the carrying amount should be written down to this amount. The amount by which the value of the asset is written down is an impairment loss.
- ❑ This impairment loss is recognised as a loss for the period.
- ❑ Depreciation charges for the impaired asset in future periods should be adjusted to allocate the asset's revised carrying amount, minus any residual value, over its remaining useful life (revised if necessary).

There is no specific guidance on the double entry needed to record impairment. One way of accounting for it is to set up an accumulated impairment loss account and account for it just like depreciation.

3 METHODS OF CALCULATING DEPRECIATION

Section overview

- Introduction
- Straight-line method
- Reducing balance method
- Depreciation by the number of units produced
- Review of depreciation method

3.1 Introduction

The depreciation method used should reflect the way in which the economic benefits of the asset are consumed by the business over time.

The main choice is between the straight line method and the reducing balance method (also known as the diminishing balance method).

The reducing balance method is often chosen for assets such as vehicles which lose greater amounts of value in their early years. The reducing balance method reflects this with larger depreciation charges in earlier years.

3.2 Straight-line method



Definition: Straight line depreciation

Where the depreciable amount is charged in equal amounts to each reporting period over the expected useful life of the asset.

$$\text{Depreciation charge for the year} = \frac{\text{Cost of asset less expected residual value}}{\text{Expected useful life (years)}}$$

With the straight-line method, the annual depreciation charge is the same for each full financial year over the life of the asset (unless the asset is subsequently re-valued during its life).

This is the most common method in practice, and the easiest to calculate.



Example: Straight line depreciation

A machine cost Rs. 250,000. It has an expected economic life of five years and an expected sale value of Rs. 50,000 at the end of that time.

Annual depreciation is:

$$\text{Depreciation charge} = \frac{250,000 - 50,000}{5 \text{ years}} = \text{Rs. 40,000 per annum}$$


Example: Straight line depreciation – mid-year acquisition

A machine cost Rs. 250,000. It has an expected economic life of five years.

It is expected that the machine will have a zero scrap value at the end of its useful life.

The machine was bought on the 1st September and the company has a 31st December year end.

The depreciation charge in the first year of ownership is:

$$\text{Depreciation charge} = \frac{250,000}{5 \text{ years}} \times \frac{4}{12} = \text{Rs. 16,667}$$

Depreciation as a percentage of cost

Another way of stating straight-line depreciation is to express the annual depreciation charge as a percentage of the cost of the asset.

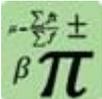

Example: Depreciation as a percentage of cost

An asset has an expected life of 10 years and zero residual value.

If straight-line depreciation is used, the annual depreciation charge is 10% of the cost of the asset.

An asset has an expected life of six years and a residual value equal to 10% of its cost

If straight-line depreciation is used the annual depreciation charge is 15% of cost each year $((100\% - 10\%)/6 \text{ years})$.


Formula: Calculating percentage depreciation

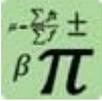
$$\text{Depreciation percentage} = \frac{\text{Cost} - \text{residual value}}{\text{Cost}} \times \frac{1}{\text{Useful life}} \times 100$$

3.3 Reducing balance method



Definition: Reducing balance method

Where the annual depreciation charge is a fixed percentage of the carrying amount of the asset at the start of the period.



Formula: Reducing balance depreciation

$$\text{Depreciation charge for the year} = \text{Carrying amount at the start of the year} \times \text{Fixed \%}$$

The annual depreciation charge is highest in Year 1 and lowest in the final year of the asset's economic life.



Example: Reducing balance method

A machine cost Rs. 100,000 on the first day of an accounting period. It has an expected life of five years, and it is to be depreciated by the reducing balance method at the rate of 30% each year.

Annual depreciation and carrying amount over the life of the asset will be as follows.

Year	Carrying amount at start of year Rs.	Annual depreciation charge (at 30% of the reducing balance) Rs.	Carrying amount at end of year Rs.
1	100,000	30,000	70,000
2	70,000	21,000	49,000
3	49,000	14,700	34,300
4	34,300	10,290	24,010

Note that the depreciation in any year can be calculated by multiplying the previous year's charge by (1 - the reducing balance percentage).

1	$100,000 \times 30\%$	30,000
2	$30,000 \times 70\%$	21,000
3	$21,000 \times 70\%$	14,700
4	$14,700 \times 70\%$	10,290

This is a useful short cut but be careful because it only works if the previous year's depreciation was for the whole year.

**Example: Reducing balance method**

A machine cost Rs. 100,000 on 30 September.

The company has a 31 December year end.

It has an expected life of five years, and it is to be depreciated by the reducing balance method at the rate of 30% each year.

Annual depreciation and carrying amount over the life of the asset will be as follows.

Year	Carrying amount at start Rs.		Annual depreciation charge Rs.	Carrying amount at end Rs.
1	100,000	$\times 30\% \times \frac{3}{12}$	7,500	92,500
2	92,500	$\times 30\%$	27,750	64,750
3	64,750	$\times 30\%$	19,425	45,325
4	45,325	$\times 30\%$	13,598	31,727

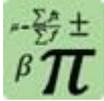
Note that the depreciation in the year after the first full year's depreciation (year 2) can be calculated by multiplying the previous year's charge by (1 - the reducing balance percentage).

3	$27,750 \times 70\%$	19,425
4	$19,425 \times 70\%$	13,598

Calculating the reducing balance

The reducing balance reduces the cost of an asset down to its expected residual value over its expected useful life.

The reducing balance percentage can be calculated using the following formula.



Formula: Calculation of reducing balance percentage

$$x = \sqrt[n]{\frac{\text{Residual value}}{\text{Cost}}} - 1$$

Where:

x = The reducing balance percentage

n = Expected useful life.



Example: Reducing balance

An asset cost Rs. 10,000 and has an expected residual value of Rs. 2,000 at the end of its expected useful life which is 5 years.

The reducing balance percentage is calculated as follows.

$$x = \sqrt[n]{\frac{\text{Residual value}}{\text{Cost}}} - 1 = \sqrt[5]{\frac{2,000}{10,000}} - 1 = 0.275 \text{ or } 27.5\%$$

This percentage reduces Rs.10,000 to Rs. 2,000 over 5 years.

Year	Carrying amount at start of year Rs.	Annual depreciation charge (at (27.5% reducing balance) Rs.	Carrying amount at end of year Rs.
1	10,000	2,750	7,250
2	7,250	1,994	5,256
3	5,256	1,445	3,811
4	3,811	1,048	2,763
5	2,763	763	2,000

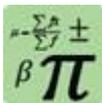
Note that the depreciation charge in year 5 contains a rounding difference of 3.

3.4 Depreciation by number of units produced



Definition

Where depreciation is calculated by expressing the useful life of an asset in terms of its expected total output and allocating the annual charge to depreciation based on actual output.



Formula: Depreciation by number of units produced

$$\text{Depreciation charge} = \frac{\text{Cost} - \text{residual value}}{\text{Total expected production over the life of the asset}} \times \text{Number of units produced in period}$$



Example: Number of units produced

A machine cost Rs. 500,000.

It is expected to produce 5,000,000 units over its useful life.

47,850 units were made in the first year of production.

The depreciation charge in the first year of ownership is:

$$= \frac{\text{Rs. } 500,000}{5,000,000} \times 47,850 = \text{Rs. } 4,785$$

3.5 Review of depreciation method

The depreciation method applied to property, plant and equipment must be reviewed periodically and, if there has been a significant change in the expected pattern of economic benefits from those assets, the method is changed to reflect the changed pattern.

Where there is a change in the depreciation method used, this is a change in accounting estimate. A change of accounting estimate is applied from the time of the change, and is not applied retrospectively. The carrying amount (cost minus accumulated depreciation) of the asset at the date of the change is written off over the remaining useful life of the asset.



Example:

Marden Fabrics owns a machine which originally cost Rs. 30,000 on 1 January 2010. It has no residual value.

It was being depreciated over its useful life of 10 years on a straight-line basis.

At the end of 2013, when preparing the financial statements for 2013, Marden Fabrics decided to change the method of depreciation, from straight-line to the reducing balance method, using a rate of 25%.

Required

Calculate the depreciation charge for 2013.

**Answer**

The change in accounting estimate is made at the end of 2013, but is applied to the financial statements from 1 January 2013. The reducing balance method of depreciation is applied to the 2013 statements.

	Rs.
Cost on 1 January 2010	30,000
Depreciation for 2010 to 2012 ($30,000 \times 3/10$)	<u>(9,000)</u>
Carrying amount at end of 2012	<u>21,000</u>

Depreciation for 2013 will therefore be Rs. $21,000 \times 25\% =$ Rs. 5,250.

**Practice questions****3**

- An item of equipment cost Rs. 1,260,000. It has an expected useful life of six years and an expected residual value of Rs. 240,000. Using the straight-line method of depreciation:
 - What is the annual depreciation charge?
 - What will be the carrying amount of the asset after four years?
- The financial year of a company is 1st January to 31st December. A non-current asset was purchased on 1st May for Rs. 60,000. Its expected useful life is five years and its expected residual value is zero. It is depreciated by the straight-line method.
 - What will be the charge for depreciation in the year of acquisition if a proportion of a full year's depreciation is charged, according to the period for which the asset has been held?
- A non-current asset cost Rs. 64,000. It is depreciated by the reducing balance method, at the rate of 25% each year.
 - What is the annual depreciation charge in Year 1, Year 2 and Year 3?
- An office property cost Rs. 5 million, of which the land value is Rs. 2 million and the cost of the building is Rs. 3 million. The building has an estimated life of 50 years.
 - What is the annual depreciation charge on the property, using the straight-line method?

4 REVALUATION OF PROPERTY, PLANT AND EQUIPMENT

Section overview

- Revaluation and the entity's accounting policy
- Accounting for revaluation
- Changing the carrying amount of a revalued asset
- Depreciation of a re-valued asset
- Realisation of the revaluation surplus
- Revaluation model: the frequency of revaluations

4.1 Revaluation and the entity's accounting policy

Property, plant and equipment is recognised at cost when it is first acquired.

IAS 16 allows a business to choose one of two measurement models for its property, plant and equipment after acquisition. The same model should be applied to all assets in the same class.

The two measurement models for property, plant and equipment after acquisition are:

- the **cost model** (i.e. cost less accumulated depreciation)
- the **revaluation model** (i.e. revalued amount less accumulated depreciation since the most recent revaluation).

For example, a company's policy might be to value all its motor vehicles at cost, but to apply the revaluation model to all its land and buildings.

Revaluation model – Issues

The following accounting issues have to be addressed when using the revaluation model:

- What happens to the other side of the entry when the carrying amount of an asset is changed as a result of a revaluation adjustment? An asset value may increase or decrease. What happens in each case?
- How is the carrying amount of the asset being revalued changed?. The carrying amount is located in two accounts (cost and accumulated depreciation) and it is the net amount that must be changed so how is this done?
- How often should the revaluation take place?

4.2 Accounting for revaluation

When a non-current asset is re-valued, its 'carrying amount' in the statement of financial position is adjusted from carrying amount to its fair value (normally current market value) at the date of the revaluation.

How the carrying amount is changed will be addressed later. This section concentrates on the other side of the entry.

Straightforward cases

Suppose an asset is carried at cost is to be revalued for the first time.

- ❑ An increase in value is credited to other comprehensive income. Such amounts are then accumulated in equity under the heading of revaluation surplus.
- ❑ A decrease in value is debited as an expense to the statement of comprehensive income.



Example: Upward revaluation

Land was purchased for 100 on the first day of the 2013 accounting period.

The business applies the IAS 16 revaluation model to the measurement of land after initial recognition.

The land was revalued to 130 at the end of the first year of ownership.

	Land	Other compreh ensive income	statement of comprehens ive income
At start	100	–	–
Adjustment	30	30 Cr	
31/12/13	130	30 Cr	

The surplus is taken to other comprehensive income

Double entry:

	Debit	Credit
Land	30	
Revaluation surplus		30

Extract from the statement of financial position as at 31/12/13

ASSETS	
Non-current assets	
Property, plant and equipment	130
EQUITY AND LIABILITIES	
Revaluation surplus	30



Example: Downward revaluation

Land was purchased for 100 on the first day of the 2013 accounting period.

The business applies the IAS 16 revaluation model to the measurement of land after initial recognition.

The land was revalued to 90 at the end of the first year of ownership.

	Land	Other compreh ensive income	statement of comprehens ive income
At start	100	–	–
Adjustment	(10)		10Dr
31/12/13	90		

Double entry:

	Debit	Credit
Statement of comprehensive income	10	
Land		10

Complication

An asset might be carried at an amount lower than its original cost as a result of being revalued downwards. If the asset is later revalued upwards, the revaluation increase is recognised in the statement of **comprehensive income** to the extent of the previously recognised expense. That part of any increase above the previously recognised expense is recognised in other comprehensive income in the usual way.

Similarly, an asset might be carried at an amount higher than its original cost as a result of being revalued upwards. If the asset is later revalued downwards, the revaluation decrease is recognised in other comprehensive income to the extent of the previously recognised surplus. That part of any decrease above the previously recognised surplus is recognised in the statement of **comprehensive income** the usual way.

**Example: Downward revaluation**

A business purchased a plot of land on the first day of the 2013 accounting period. The business applies the IAS 16 revaluation model to the measurement of land after initial recognition. The business has a policy of revaluing land annually.

The initial amount recognised and the year end values are shown below:

	Rs.
Measurement on initial recognition	100
Valuation as at:	
31 December 2013	130
31 December 2014	110
31 December 2015	95
31 December 2016	116

The double entries are as follows

As at 31 December 2013	Debit	Credit
Land (130 – 100)	30	
Other comprehensive income		30

As at 31 December 2014	Debit	Credit
Other comprehensive income	20	
Land (110 – 130)		20

The fall in value reverses a previously recognised surplus. It is recognised in OCI to the extent that it is covered by the surplus.

As at 31 December 2015	Debit	Credit
Other comprehensive income	10	
Statement of comprehensive income	5	
Land (95 – 110)		15

The fall in value in part reverses a previously recognised surplus. It is recognised in OCI to the extent that it is covered by the surplus. This reduces the revaluation surplus to zero.

Any amount not covered by the surplus is recognised as an expense in the statement of comprehensive income.

As at 31 December 2016	Debit	Credit
Land (116 – 95)	21	
Statement of comprehensive income		5
Other comprehensive income		16

A rise in value that reverses a previously recognised expense is recognised in the statement of comprehensive income to the extent that it reverses the expense. Any amount above this is recognised in other comprehensive income.

**Example (continued) – Overview**

	Land	Other comprehensive income	Statement of comprehensive income
At start	100	–	–
Double entry	30	30 Cr	
31/12/13	130		
b/f	130		
Adjustment	(20)	20Dr	–
31/12/14	110		
b/f	110		
Adjustment	(15)	10Dr	5Dr
31/12/15	95		
b/f	95		
Adjustment	21	16Cr	5Cr
31/12/16	116		

4.3 Changing the carrying amount of the asset.

In the previous example land was revalued. Land is not depreciated so the carrying amount of land is represented in a single account. This made it easy to change:

The carrying amount of depreciable assets is the net of balances on two separate accounts. The double entry to revalue the asset must take this into account.

A simple approach (and one that accords with IAS 16) is as follows:

- ❑ **Step 1:** Transfer the accumulated depreciation to the asset account. The result of this is that the balance on the asset account is now the carrying amount of the asset and the accumulated depreciation account in respect of this asset is zero.
- ❑ **Step 2:** Change the balance on the asset account to the revalued amount.

**Example:**

A building owned by a company is carried at Rs.8,900,000 (Cost of Rs. 9m less accumulated depreciation of Rs.100,000). The company's policy is to apply the revaluation model to all its land and buildings.

A current valuation of this building is now Rs.9.6 million.

Step 1	Rs. (000)	Rs. (000)
Accumulated depreciation	100	
Asset		100
Step 2		
Asset (Rs.9.6 – Rs.8.9m)	700	
Other comprehensive income		700
Alternatively this could be done with a single journal		
Asset (Rs.9.6 – Rs.9m)	600	
Accumulated depreciation	100	
Other comprehensive income		700

**Example:**

An office building was purchased four years ago for Rs.3 million.

The building has been depreciated by Rs.100,000.

It is now re-valued to Rs.4 million. Show the book-keeping entries to record the revaluation.

**Answer**

Building account			
	Rs.		Rs.
Opening balance b/f	3,000,000	Accumulated depreciation	100,000
Revaluation account	1,100,000	Closing balance c/f	4,000,000
	4,100,000		4,100,000
Opening balance b/f	4,000,000		
Accumulated depreciation of building account			
	Rs.		Rs.
Building account	100,000	Opening balance b/f	100,000
Revaluation surplus			
	Rs.		Rs.
		Revaluation account	1,100,000

**Practice question****4**

A company owns a building which was purchased three years ago for Rs.1 million. The building has been depreciated by Rs.60,000.

It is now to be re-valued to Rs.2 million. Show the book-keeping entries to record the revaluation.

4.4 Depreciation of a re-valued asset

After a non-current asset has been re-valued, depreciation charges are based on the new valuation.

**Example:**

An asset was purchased three years ago, at the beginning of Year 1, for Rs.100,000.

Its expected useful life was six years and its expected residual value was Rs.10,000.

It has now been re-valued to Rs.120,000. Its remaining useful life is now estimated to be three years and its estimated residual value is now Rs.15,000.

The straight-line method of depreciation is used.

Required

- What is the transfer to the revaluation surplus at the end of Year 3?
- What is the annual depreciation charge in Year 4?
- What is the carrying amount of the asset at the end of Year 4?

**Answer**

Annual depreciation originally (for Years 1 – 3)
= Rs.(100,000 – 10,000)/6 years = Rs.15,000.

	Rs.
Cost	100,000
Less: Accumulated depreciation at the time of revaluation (= 3 years x Rs.15,000)	(45,000)
Carrying amount at the time of the revaluation	55,000
Re-valued amount of the asset	120,000
Transfer to the revaluation surplus	65,000

Revised annual depreciation = Rs.(120,000 – 15,000)/3 years = Rs.35,000.

The annual depreciation charge in Year 4 will therefore be Rs.35,000.

	Rs.
Re-valued amount	120,000
Less: depreciation charge in Year 4	(35,000)
Carrying amount at the end of Year 4	85,000

4.5 Realisation of the revaluation surplus

All assets eventually disappear from the statement of financial position either by becoming fully depreciated or because the company sells them.

If nothing were done this would mean that there was a revaluation surplus on the face of the statement of financial position that related to an asset that was no longer owned. IAS 16 allows (but does not require) the transfer of a revaluation surplus to retained earnings when the asset to which it relates is derecognised (realised).

This might happen over several years as the asset is depreciated or at a point in time when the asset is sold.

Revalued assets being depreciated

Revaluation of an asset causes an increase in the annual depreciation charge. The difference is known as excess depreciation:

Excess depreciation is the difference between:

- ❑ the depreciation charge on the re-valued amount of the asset, and
- ❑ depreciation that would have been charged on historical cost.

Each year a business might make a transfer from the revaluation surplus to the retained profits equal to the amount of the excess depreciation.



Illustration:

	Debit	Credit
Revaluation surplus	X	
Retained earnings		X

Revalued assets being sold

When a revalued asset is sold the business might transfer the balance on the revaluation surplus in respect of the asset into retained earnings. The journal entry would be the same as above.

**Example:**

An asset was purchased two years ago at the beginning of Year 1 for Rs.600,000. It had an expected life of 10 years and nil residual value.

Annual depreciation is Rs.60,000 (= Rs.600,000/10 years) in the first two years.

At the end of Year 2 the carrying value of the asset -Rs.480,000.

After two years it is re-valued to Rs.640,000.

Double entry: Revaluation

	Debit	Credit
Asset (Rs.640,000 – Rs.600,000)	40	
Accumulated depreciation	120	
Other comprehensive income		160

Each year the business is allowed to make a transfer between the revaluation surplus and retained profits:

Double entry: Transfer

	Debit	Credit
Revaluation surplus ^(160/8)	20	
Retained profits		20

4.6 Revaluation model: the frequency of revaluations

When the revaluation model is applied to the measurement of property, plant and equipment, the frequency of revaluations should depend on the volatility in the value of the assets concerned. When the value of assets is subject to significant changes (high volatility), annual revaluations may be necessary.

5 DERECOGNITION OF PROPERTY, PLANT AND EQUIPMENT

Section overview

- Gain or loss on disposal of a non-current asset
- Accounting for the disposal of property, plant and equipment
- Disposal of property, plant and equipment: part-exchange of an old asset

5.1 Gain or loss on disposal of a non-current asset

Property, plant and equipment are eventually disposed of:

- by sale, or
- if they have no sale value, through disposal as scrap.

Disposal can occur at any time, and need not be at the end of the asset's expected useful life.

The effect of a disposal on the statement of financial position (or accounting equation) is that:

- the asset (at cost or valuation) is no longer in the statement of financial position, and
- the accumulated depreciation on the asset is also no longer in the statement of financial position.

The carrying amount of the asset is therefore removed from the accounting equation.

There is a gain or loss on disposal of the asset, as follows:



Illustration: Gain or loss on disposal

		Rs.
Sale proceeds on disposal		X
Less Disposal costs		(X)
Net disposal value		X
Asset at cost	X	
Less: Accumulated depreciation	(X)	
Carrying amount at date of disposal	—	(X)
Gain /loss on disposal		X

**Example:**

A non-current asset originally cost Rs.75,000. Accumulated depreciation is Rs.51,000.

The asset is now sold for Rs.18,000. Disposal costs are Rs.500.

What is the gain or loss on disposal?

**Answer**

Gain or loss on disposal	Rs.	Rs.
Sale proceeds on disposal		18,000
Less Disposal costs		(500)
Net disposal value		<u>17,500</u>
Asset at cost	75,000	
Less: Accumulated depreciation	<u>(51,000)</u>	
Carrying amount at date of disposal		<u>(24,000)</u>
Loss on disposal		<u>(6,500)</u>

**Practice question****5**

A non-current asset cost Rs.96,000 and was purchased on 1 June Year 1. Its expected useful life was five years and its expected residual value was Rs.16,000. The asset is depreciated by the straight-line method.

The asset was sold on 1 September Year 3 for Rs.68,000. There were no disposal costs.

It is the company policy to charge depreciation on a monthly basis.

The financial year runs from 1 January to 31 December.

What was the gain or loss on disposal?

**Practice question****6**

A non-current asset was purchased on 1 June Year 1 for Rs.216,000. Its expected life was 8 years and its expected residual value was Rs.24,000. The asset is depreciated by the straight-line method. The financial year is from 1 January to 31 December.

The asset was sold on 1 September Year 4 for Rs.163,000. Disposal costs were Rs.1,000.

It is the company policy to charge a proportionate amount of depreciation in the year of acquisition and in the year of disposal, in accordance with the number of months for which the asset was held.

What was the gain or loss on disposal?

5.2 Accounting for the disposal of property, plant and equipment

In the general ledger the gain or loss on disposal of a non-current asset is recorded in a **disposal of asset account**. The double entry transactions required are as follows – for an asset recorded at cost rather than at a re-valued amount.

Step 1: Transfer the cost of the non-current asset from the asset account to the disposal account:

Step 2: Transfer the accumulated depreciation on the asset from the accumulated depreciation account to the disposal account:



Illustration:

	Debit	Credit
Disposal account	X	
Non-current asset account (cost of the asset)		X
Accumulated depreciation account (or Allowance for depreciation account)	X	
Disposal account		X

The carrying amount of the asset is now in the disposal account.

Step 3: Record the disposal costs in the disposal account.



Illustration:

	Debit	Credit
Disposal account (disposal expenses)	X	
Bank or Payables account		X

Step 4: Record the sale proceeds in the disposal account:



Illustration:

	Debit	Credit
Bank or Receivables account	X	
Disposal account (sale proceeds)		X

Step 5: The balance on the disposal account is the gain or loss on disposal. This is transferred to the statement of comprehensive income.

**Example:**

A non-current asset cost Rs.82,000 when purchased. It was sold for Rs.53,000 when the accumulated depreciation was Rs.42,000. Disposal costs were Rs.2,000.

Required

Show the book-keeping entries to record the disposal.

**Answer****Disposal of asset account**

	Rs.		Rs.
Non-current asset account	82,000	Accumulated depreciation account	42,000
Disposal expenses (Bank)	2,000	Sales value (Receivables)	53,000
Gain on disposal (statement of comprehensive income)	11,000		
	95,000		95,000

Non-current asset account

	Rs.		Rs.
Opening balance	82,000	Disposal account	82,000

Accumulated depreciation account

	Rs.		Rs.
Disposal account	42,000	Opening balance	42,000

Receivables account

	Rs.		Rs.
Disposal account (sale value of disposal)	53,000		

Bank account

	Rs.		Rs.
		Disposal account (disposal expenses)	2,000

Statement of comprehensive income

	Rs.		Rs.
		Disposal account (gain on disposal)	11,000

Non-current asset accounts in the general ledger are usually maintained for a category of assets rather than for individual assets. This means that when a non-current asset is disposed of, there will be a closing balance to carry forward on the asset account and the accumulated depreciation account.

**Example:**

In the previous example, suppose that the balance on the non-current asset account before the disposal was Rs.500,000 and the balance of the accumulated depreciation account was Rs.180,000.

The accounting entries would be as follows:

Property, plant and equipment account

	Rs.		Rs.
Opening balance b/f	500,000	Disposal account	82,000
		Closing balance c/f	418,000
	500,000		500,000
Opening balance b/f	418,000		

Accumulated depreciation account

	Rs.		Rs.
Disposal account	42,000	Opening balance b/f	180,000
Closing balance c/f	138,000		
	180,000	Opening balance b/f	180,000
			138,000

**Practice question****7**

A motor vehicle cost Rs.80,000 two years ago. It has been depreciated by the reducing balance method at 25% each year. It has now been disposed of for Rs.41,000. Disposal costs were Rs.200.

The balance on the motor vehicles account before the disposal was Rs.720,000 and the balance on the accumulated depreciation of motor vehicles account was Rs.250,000.

Show the book-keeping entries to record the disposal.

5.3 Disposal of property, plant and equipment: part-exchange of an old asset

Sometimes, a supplier will agree to take an old asset in part-exchange for the sale of a new asset. The customer is said to receive a trade-in allowance on his old asset.

This practice is quite common, for example, with motor vehicles. A business entity may buy a new motor vehicle from a car dealer, and the car dealer will take an old motor vehicle in part-exchange for the new one.



Example: Trade-in allowance

Entity X has several motor cars that are accounted for as property, plant and equipment.

On 2 January Year 5, Entity X bought a new car.

The new car had a cash price of Rs.50,000.

Instead of taking Rs. 50,000, the car dealer agreed to accept a car owned by Entity X in part-exchange plus a cash price of Rs. 46,000 in full payment for the new car.

Entity X has traded in the previously owned car for an allowance of Rs. 4,000.

In effect, Entity X has sold the previously owned car for Rs. 4,000.

Accounting for the purchase of the new asset

As explained in section 1.3 of this chapter when an asset is acquired in exchange for another asset (or in exchange for another asset plus cash) the cost of the new asset is measured at its fair value unless:

- the exchange transaction lacks commercial substance; or
- the fair value of neither the asset received nor the asset given up is reliably measurable.

If the new asset is measured at fair value, the fair value of the asset given up is used to measure the cost of the asset received unless the fair value of the asset received is more clearly evident.

In the case of transactions involving a trade in allowance, the fair value of the asset being given up is measured as the value of the allowance (price reduction received).



Example: Cost of new asset

Entity X bought a new car with a cash price of Rs.50,000 but paid for it with Rs. 46,000 cash plus another car which it had owned for some time.

The cost of the new car received is as follows:

	Rs.
Cash paid	46,000
Trade-in allowance on previously owned car	4,000
Cost of new car	50,000

Accounting for the sale of the previously owned asset

Disposals of assets in part-exchange for a new asset are accounted for in much the same way as disposals of property, plant and equipment for cash. The only difference is that:

- ❑ The disposal value of the old asset is the amount that the seller of the new asset allows in part-exchange for the new asset.
- ❑ The cost of the new asset is the full purchase price, but the double entry is partly to bank/payables (for the cash payment) and partly to the disposal account for the old asset (for the part-exchange value).



Example:

Entity X has several motor cars that are accounted for as property, plant and equipment.

As at 1 January Year 5, the cost of the entity's cars was Rs.200,000 and the accumulated depreciation was Rs.80,000.

On 2 January Year 5, Entity X bought a new car costing Rs.50,000.

The car dealer accepted a car owned by Entity X in part-exchange, and the part-exchange value of this old car was Rs.4,000.

This car originally cost Rs.30,000 and its accumulated depreciation is Rs.25,000.

Required

- (a) Calculate the gain or loss on disposal of the old car
- (b) Show how the purchase of the new car and the disposal of the old car will be recorded in the ledger accounts of Entity X.



Answer

(a)

	Rs.	Rs.
Sale proceeds on disposal (part-exchange value)		4,000
Less Disposal costs		0
Net disposal value		4,000
Asset at cost	30,000	
Less: Accumulated depreciation	(25,000)	
Carrying amount at date of disposal		(5,000)
Loss on disposal		(1,000)

**Answer**

(b)

Disposal of asset account

	Rs.		Rs.
Motor vehicles account	30,000	Accumulated depreciation account	25,000
		Motor vehicles account	
		(Trade-in value)	4,000
		Loss on disposal (statement of comprehensive income)	1,000
	30,000		30,000

Motor vehicles account

	Rs.		Rs.
1 January			
Opening balance	200,000	Disposal account	30,000
Cost of new car:			
Bank (50,000 – 4,000)	46,000		
Disposal of asset account	4,000	Closing balance	220,000
	50,000		
	250,000		250,000
2 January			
Opening balance	220,000		

Accumulated depreciation account

	Rs.		Rs.
1 January			
Disposal account	25,000	Opening balance	80,000
Closing balance	55,000		
	80,000		80,000
2 January			
		Opening balance	55,000

Bank account

	Rs.		Rs.
		Motor vehicles account	46,000
		(Cash paid for new car)	

Statement of comprehensive income

	Rs.		Rs.
Disposal account (Loss on disposal)	1,000		

**Practice question****8**

A company has several motor cars that are accounted for as non-current assets. As at 1 January Year 2, the cost of the cars was Rs.120,000 and the accumulated depreciation was Rs.64,000.

During January the company bought a new car costing Rs.31,000 and was given a part-exchange allowance against an old car of Rs.8,000. The car being part exchanged originally cost Rs.28,000 and its accumulated depreciation is Rs.18,000.

Required

- (a) Calculate the gain or loss on disposal of the old car
- (b) Show how the purchase of the new car and the disposal of the old car will be recorded in the ledger accounts.

6 DISCLOSURE REQUIREMENTS OF IAS 16

Section overview

- Disclosure requirements of IAS 16

6.1 Disclosure requirements of IAS 16

IAS 16 **Property, plant and equipment** requires the following disclosures in the notes to the financial statements, for each major class of property, plant and equipment.

- The measurement bases used (cost or revaluation model)
- The depreciation methods used
- The useful lives or depreciation rates used
- Gross carrying amounts and the accumulated depreciation at the beginning and at the end of the period
- A reconciliation between the opening and closing values for gross carrying amounts and accumulated depreciation, showing:
 - Additions during the year
 - Disposals during the year
 - Depreciation charge for the year
 - Assets classified as held for sale in accordance with IFRS 5
 - Acquisitions of assets through business combinations
 - Impairment losses
 - The effect of revaluations.

The following is an example of how a simple table for tangible non-current assets may be presented in a note to the financial statements.

An entity must also disclose:

- the existence and amounts of restrictions on title, and property, plant and equipment pledged as security for liabilities;
- the amount of expenditures recognised in the carrying amount of an item of property, plant and equipment in the course of its construction;
- the amount of contractual commitments for the acquisition of property, plant and equipment; and

**Illustration:**

	Property	Plant and equipment	Total
Cost	Rs. m	Rs. m	Rs. m
At the start of the year	7,200	2,100	9,300
Additions	920	340	1,260
Disposals	(260)	(170)	(430)
At the end of the year	7,860	2,270	10,130
 Accumulated depreciation			
At the start of the year	800	1,100	1,900
Depreciation expense	120	250	370
Accumulated depreciation on disposals	(55)	(130)	(185)
At the end of the year	865	1,220	2,085
 Carrying amount			
At the start of the year	6,400	1,000	7,400
At the end of the year	6,995	1,050	8,045

Disclosures for assets stated at revalued amounts

When items of property, plant and equipment are stated at revalued amounts the following must be disclosed:

- the effective date of the revaluation;
- whether an independent valuer was involved;
- for each revalued class of property, plant and equipment, the carrying amount that would have been recognised had the assets been carried under the cost model; and
- the revaluation surplus, indicating the change for the period and any restrictions on the distribution of the balance to shareholders.

Additional disclosures encouraged by IAS 16

IAS 16 encourages disclosure of the following information as users of financial statements might find it to be useful.

- the carrying amount of temporarily idle property, plant and equipment;
- the gross carrying amount of any fully depreciated property, plant and equipment that is still in use;
- the carrying amount of property, plant and equipment retired from active use and held for disposal; and
- when the cost model is used, the fair value of property, plant and equipment when this is materially different from the carrying amount.

7 QUESTION PROBLEMS

Section overview

- Multiple assets
- Working backwards
- Correcting errors

7.1 Multiple assets

Exam questions on property, plant and equipment usually involve multiple assets with the need to keep track of additions and disposals in a period.

In any one year the charge for depreciation will be made up as follows:



Illustration: Make-up of depreciation charge

	Rs.
Depreciation of assets held for the whole year (these are assets held at the start less disposals)	X
Depreciation of assets sold in the year (up to the date of sale)	X
Depreciation of assets bought in year (from the date of purchase)	X
Depreciation charge for the year	<u> </u> <u> </u> X

It is often useful to construct a working to calculate the depreciation charge for different components of the asset base.

**Example: Depreciation of several assets (straight line)**

A business has entered into the following transactions involving plant and equipment over the last three years.

1 January 2011	Bought several items of plant and equipment for Rs. 800,000.
30 June 2012	Bought several items of plant and equipment for Rs. 500,000.
28 February 2013	Bought several items of plant and equipment for Rs. 240,000.
31 March 2013	Sold some of the items which it had purchased on 1 January 2011. These items had cost Rs. 300,000.

The company depreciates assets on a straight line basis at 10% per annum.

The depreciation in 2011, 2012 and 2013 can be calculated as follows:

	Depreciation:		
	2011	2012	2013
2011 purchase (Rs. 800,000)			
$800,000 \times 10\%$ (2011 and 2012)	80,000	80,000	
In 2013 this must be split:			
Assets retained:			
$500,000 \times 10\%$			50,000
Assets sold:			
$300,000 \times 10\% \times \frac{3}{12}$			7,500
			57,500
2012 purchase (Rs. 500,000)			
$500,000 \times 10\% \times \frac{6}{12}$		25,000	
$500,000 \times 10\%$			50,000
2013 purchase (Rs. 200,000)			
$240,000 \times 10\% \times \frac{10}{12}$			20,000
Depreciation charge	80,000	105,000	127,500

Depreciation on the assets sold:

$$300,000 \times 10\% \times 2.25 \left(2 + \frac{3}{12}\right) = \text{Rs. } 67,500$$

Examples are always more complicated when depreciation is calculated using the reducing balance method.

**Example: Depreciation of several assets (reducing balance)**

A business has entered into the following transactions involving plant and equipment over the last three years.

1 January 2011	Bought several items of plant and equipment for Rs. 800,000.
30 June 2012	Bought several items of plant and equipment for Rs. 500,000.
28 February 2013	Bought several items of plant and equipment for Rs. 240,000.
31 March 2013	Sold some of the items which it had purchased on 1 January 2011. These items had cost Rs. 300,000.

The company depreciates assets using 20% reducing balance.

The depreciation in 2011, 2012 and 2013 can be calculated as follows:

	Depreciation:		
	2011	2012	2013
2011 purchase (Rs. 800,000)			
800,000 × 20%	160,000		
(800,000 – 160,000) × 20%		128,000	
In 2013 the carrying amount of the asset (800,000 – 160,000 – 128,000 = 512,000) must be split:			
Assets retained (512,000 × ⁵⁰⁰ / ₈₀₀):			64,000
320,000 × 20%			9,600
Assets sold: (512,000 × ³⁰⁰ / ₈₀₀):			
192,000 × 20% × ³ / ₁₂			73,600
2012 purchase (Rs. 500,000)			
500,000 × 20% × ⁶ / ₁₂		50,000	
(500,000 – 50,000) × 20%			90,000
2013 purchase (Rs. 200,000)			
240,000 × 20% × ¹⁰ / ₁₂			40,000
Depreciation charge	160,000	178,000	203,600
Depreciation on the assets sold:		Rs.	
300,000 × 20%		60,000	
(300,000 – 60,000) × 20%		48,000	
(300,000 – 60,000 – 48,000) × 20% × ³ / ₁₂		9,600	
		117,600	

7.2 Working backwards

A question may require you to construct figures by working backwards from information provided. Such questions might provide information at the end of a period and ask you to construct the ledger accounts that resulted in the information. Alternatively, the question might reveal only one side of a double entry and require you to construct the other.

Solving such questions requires a strong understanding of the measurement rules for depreciation and of double entry principles.

Each question has different features. The following example illustrates some of these.



Example

Accumulated depreciation			
Rs.		Rs.	
		1 January: Balance b/f	200,000
31 August: Disposal	30,667		
31 December Balance c/f	384,000	31 December Charge for the year	214,667
	414,667		414,667
Disposal			
Rs.		Rs.	
		31 August: Cash	75,000
31 August: Cost	100,000	31 August: Disposal	30,667
Profit on disposal	5,667		
	105,667		105,667

Further information:

Assets are depreciated at 20% reducing balance.

The accumulated depreciation at the start of the year represents depreciation charged on assets owned from the beginning of the previous period.

The assets disposed of were all owned at the start of the year.

There were additions this year on 31 March.

Required: Construct the cost account for this category of non-current assets



Example

Step 1: Draw the cost T account and fill in any easy detail (double entries that you know about from the other accounts, narrative for other entries etc.)

Cost	
Rs.	Rs.
1 January: Balance b/f	
31 March: Additions	
	31 August: Disposal 100,000
	31 December
	Balance c/f

You should now try to calculate the missing figures in order of difficulty



Example

Step 2: Calculate the opening balance.

The question tells us that the opening accumulated depreciation is that charged on assets owned from the beginning of the previous period.

If this statement is true, there cannot have been any additions or disposals last year.

Therefore the accumulated depreciation (Rs. 200,000) is 20% of the assets held at the start of last year and these were still held at the end of the year.

Grossing this up provides the cost of assets.

$$\text{Rs. } 200,000 \times \frac{100}{20} = \text{Rs. } 1,000,000.$$

Cost	
Rs.	Rs.
1 January: Balance b/f 1,000,000	
31 March: Additions	
	31 August: Disposal 100,000
	31 December
	Balance c/f

**Example****Step 3: Calculate the depreciation on additions.**

The question gives the depreciation charge for the year.

The total charge is the sum of depreciation on assets held for the whole year plus assets up to the date of disposal plus assets from the date of purchase.

The question gives the total and gives information which allows you to calculate the first two. Therefore the depreciation on assets from the date of purchase can be found as a balancing figure.

This can be grossed up to give the cost of the additions.

	Rs.
Depreciation on assets held for the whole year (1,000,000 – 100,000) × 80% × 20%	144,000
Depreciation on assets sold (1 January to 31 August) 100,000 × 80% × 20% × ⁸ / ₁₂	10,667
Depreciation on assets purchased (31 March to 31 December) – a balancing figure	60,000
Total depreciation charge for the year	214,667

Step 4: Gross up the depreciation on additions to find the cost of additions

Rs. 60,000 is $20\% \times \frac{9}{12}$ of the cost.

But $20\% \times \frac{9}{12} = 15\%$

Therefore the cost = Rs.60,000 × $\frac{100}{15}$ = Rs. 400,000

Step 5: Complete the T account.

Cost			Rs.
	Rs.		Rs.
1 January: Balance b/f	1,000,000		
31 March: Additions	400,000		
	1,400,000	31 August: Disposal	100,000
		31 December	
		Balance c/f	1,300,000
			1,400,000

7.3 Errors

Questions often feature mistakes made in terms of a transaction incorrectly classified as capital or as repair.



Example: Error: Repair Incorrectly capitalised

The balance on a business's plant account as at 31 December is as follows.

	Rs.
Cost	1,200,000
Accumulated depreciation	(500,000)
Carrying amount	<u>700,000</u>

The company has discovered that a repair which cost Rs. 200,000 was incorrectly capitalised on 31 July.

Depreciation is charged at 15% reducing balance.

Correction of the error:

The amount capitalised would have been depreciated so the amount must be removed from cost and the depreciation incorrectly charged must be removed.

The correcting journals are:

	Dr	Cr
Statement of comprehensive income: line item to which repairs are charged	200,000	
Plant – cost		200,000
and		
Accumulated depreciation ($200,000 \times 15\% \times \frac{5}{12}$)	12,500	
Statement of comprehensive income: Depreciation expense		12,500

The impact on the carrying amount of the plant is as follows:

	Before (Rs.)		After (Rs.)
Cost	1,200,000	(200,000)	1,000,000
Accumulated depreciation	(500,000)	12,500	(487,500)
Carrying amount	<u>700,000</u>		<u>512,500</u>

**Example: Errors: Asset incorrectly expensed**

The balance on a business's plant account as at 31 December is as follows.

	Rs.
Cost	1,200,000
Accumulated depreciation	(500,000)
Carrying amount	<u>700,000</u>

The company has discovered that on 31 July an amount of Rs. 200,000 was charged to the statement of comprehensive income but it should have been capitalised.

Depreciation is charged at 15% reducing balance.

Correction of the error:

The amount must be capitalised and depreciated.

The correcting journals are:

	Dr	Cr
Plant – cost	200,000	
Statement of comprehensive income: line item to which repairs are charged		200,000

and

Statement of comprehensive income:

Depreciation expense	12,500	
Accumulated depreciation ($200,000 \times 15\% \times \frac{5}{12}$)		12,500

The impact on the carrying amount of the plant is as follows:

	Before (Rs.)		After (Rs.)
Cost	1,200,000	200,000	1,400,000
Accumulated depreciation	<u>(500,000)</u>	<u>(12,500)</u>	<u>(512,500)</u>
Carrying amount	<u>700,000</u>		<u>887,500</u>

SOLUTIONS TO PRACTICE QUESTIONS

Solution		1	
a			
Equipment account			
YEAR 1	Rs.		Rs.
Cash	40,000	Balance c/d	40,000
	40,000		40,000
YEAR 2			
Balance b/d	40,000	Balance c/d	40,000
	40,000		40,000
Balance b/d	40,000		
b			
Equipment – accumulated depreciation			
YEAR 1	Rs.		Rs.
		Depreciation (40,000 / 5)	8,000
Balance c/d	8,000		8,000
	8,000		8,000
YEAR 2			
Balance b/d		Balance b/d	8,000
Balance b/d	16,000	Depreciation (40,000 / 5)	8,000
	16,000		16,000
		Balance b/d	16,000
c			
Depreciation expense			
YEAR 1	Rs.		Rs.
		To statement of comprehensive income	8,000
Acc. depreciation	8,000		8,000
	8,000		8,000
YEAR 2			
Acc. depreciation	8,000	To statement of comprehensive income	8,000
	8,000		8,000
Carrying amounts at:			
	Year 1 (Rs.)	Year 2 (Rs.)	
Cost	40,000	40,000	
Accumulated depreciation	8,000	16,000	
Carrying amount	32,000	24,000	

Solution**2**

Original depreciation = $(150,000 - 30,000) / 10 = \text{Rs.}12,000$ per annum

Carrying amount at start of year 5 = $150,000 - (12,000 \times 3) = \text{Rs.}114,000$

If the total useful life is anticipated to be 7 years then there are four years remaining.

Depreciation charge for year 5 = $\text{Rs.}114,000 / 4 = \text{Rs.}28,500$

Solutions**3**

1 Annual depreciation = $\text{Rs.}(1,260,000 - 240,000) / 6 \text{ years} = \text{Rs.}170,000$.

After 4 years:

	Rs.
Asset at cost	1,260,000
Less accumulated depreciation: Rs. 170,000 x 4)	680,000
Carrying amount	<u>580,000</u>

2 Annual depreciation = $\text{Rs.}(60,000 - 0) / 5 \text{ years} = \text{Rs.}12,000$.

Charge in the year of acquisition = $\text{Rs.} 12,000 \times 8 \text{ months} / 12 \text{ months} = \text{Rs.} 8,000$

3

	Rs.
Cost of the asset	64,000
Year 1 depreciation (25%)	(16,000)
Carrying amount at the end of year 1	<u>48,000</u>
Year 2 depreciation (25%)	(12,000)
Carrying amount at the end of year 2	<u>36,000</u>
Year 3 depreciation (25%)	(9,000)
Carrying amount at the end of year 3	<u>27,000</u>

4 Annual depreciation = $\text{Rs.}(3,000,000) / 50 \text{ years} = \text{Rs.}60,000$.

(Land is not depreciated (except in certain circumstances).)

Solution**4**

a	Building account	
	Rs.(000)	Rs.(000)
Balance b/d	1,000	
Revaluation surplus (Rs.2m - Rs. 1m)	1,000	
	<u>2,000</u>	
Balance b/d	2,000	
		Balance c/d
		<u>2,000</u>

b Accumulated depreciation			
	Rs.(000)		Rs.(000)
Revaluation surplus	60	Balance b/d	60
	<u>60</u>		<u>60</u>
c Revaluation surplus			
YEAR 1	Rs.(000)		Rs.(000)
Balance c/d	1,060	Building account	1,000
	<u>1,060</u>	Accumulated depreciation	60
		Balance b/d	<u>1,060</u>

Solution		5	
Annual depreciation = Rs.(96,000 – 16,000)/5 years = Rs.16,000.			
Monthly depreciation = Rs. 16,000/12 = Rs. 1,333.33.			
	Rs.	Rs.	
Disposal value less disposal costs		68,000	
Cost of the asset	96,000		
Accumulated depreciation at the time of disposal (= 27 months × Rs. 1,333.33)	<u>(36,000)</u>		
Carrying amount at the date of disposal		60,000	
Gain on disposal		<u>8,000</u>	

Solutions		6	
Annual depreciation = Rs.(216,000 – 24,000)/8 years = Rs.24,000.			
	Rs.	Rs.	
Disposal value		163,000	
Less disposal costs		<u>(1,000)</u>	
		162,000	
Accumulated depreciation at the time of disposal			
Year to 31 December Year 1: (Rs.24,000 × 7/12)	14,000		
Years 2 and 3: (Rs.24,000 × 2 years)	48,000		
Year to 31 December Year 4: (Rs.24,000 × 8/12)	16,000		
	<u>78,000</u>		
Cost of the asset	216,000		
Carrying amount at the date of disposal		138,000	
Gain on disposal		<u>24,000</u>	

Solution**7**

	Rs.	Rs.
Cost of the asset	80,000	
Year 1 depreciation (× 25%)	(20,000)	20,000
Carrying amount at end of Year 1	<u>60,000</u>	
Year 2 depreciation (× 25%)	(15,000)	<u>15,000</u>
Accumulated depreciation at date of disposal		<u>35,000</u>

Disposal account

	Rs.		Rs.
Motor vehicles account	80,000	Accumulated depreciation	35,000
Bank (disposal costs)	200	Receivables	41,000
		Statement of comprehensive income (loss on disposal)	<u>4,200</u>
	<u>80,200</u>		<u>80,200</u>

b**Motor vehicles**

	Rs.		Rs.
Opening balance b/d	720,000	Disposal of asset account	80,000
		Closing balance c/d	<u>640,000</u>
	<u>720,000</u>		<u>720,000</u>
Opening balance b/d	640,000		

c**Accumulated depreciation on motor vehicles**

	Rs.		Rs.
Disposal of asset account	35,000	Opening balance b/f	250,000
Closing balance c/d	<u>215,000</u>		<u>250,000</u>
	<u>250,000</u>	Opening balance b/d	215,000

Solution**8**

	Rs.	Rs.
Sale proceeds on disposal (part-exchange value)		8,000
Asset at cost	28,000	
Less: Accumulated depreciation	<u>(18,000)</u>	
Carrying amount at date of disposal		<u>(10,000)</u>
Loss on disposal		<u>(2,000)</u>

Disposal account

	Rs.		Rs.
Motor vehicles account	28,000	Accumulated depreciation account	18,000
		Motor vehicles account (Trade-in value)	8,000
		Loss on disposal	<u>2,000</u>
	<u>28,000</u>		<u>28,000</u>

b**Motor vehicles**

	Rs.		Rs.
Opening balance	120,000	Disposal account	28,000
Bank (31,000 - 8,000)	23,000		
Disposal of asset account	8,000	Closing balance	<u>123,000</u>
	<u>151,000</u>		<u>151,000</u>
Opening balance	151,000		

c**Accumulated depreciation on motor vehicles**

	Rs.		Rs.
Disposal account	18,000	Opening balance	64,000
Closing balance	46,000		
	<u>64,000</u>		<u>64,000</u>
		Opening balance	46,000

IAS 18: Revenue

Contents

- 1 Recognition in the financial statements
- 2 IAS 18: Revenue

INTRODUCTION

Learning outcomes

LO 3 **Understand the nature of revenue and be able to account for the same in accordance with international pronouncements.**

LO3.1.1: *Revenue (IAS-18):* Describe revenue.

LO3.1.2: *Revenue (IAS-18):* Apply the principle of substance over form to the recognition of revenue.

LO3.1.3: *Revenue (IAS-18):* Describe and demonstrate the accounting treatment (measurement and recognition) for revenue arising from the following transactions and events: sale of goods; rendering of services; and use by others of entity assets yielding interest, royalties and dividends.

1 RECOGNITION IN THE FINANCIAL STATEMENTS: IASB CONCEPTUAL FRAMEWORK

Section overview

- Probability of future economic benefit flowing in or out
- Reliability of measurement
- Recognition of assets, liabilities, income and expenses

The IASB Conceptual Framework states that an element (asset, liability, equity, income or expense) should be recognised in the statement of financial position or statement of comprehensive income when it:

- meets the definition of an element; and also
- satisfies certain criteria for recognition.

Items that fail to meet the criteria for recognition should not be included in the financial statements. However, some of these items may have to be disclosed as additional details in a **note** to the financial statements.

The criteria for recognition are as follows:

- It must be **probable** that the future economic benefit associated with the item will flow either into or out of the entity.
- The item should have a cost or value that can be measured reliably.

1.1 Probability of future economic benefit flowing in or out

The concept of probability relates to the degree of certainty or uncertainty that the future economic benefit associated with the item will flow into or out of the entity.

The degree of certainty or uncertainty should be assessed on the basis of the evidence available at the time the financial statements are prepared.

For example, if it is considered fairly certain that a trade receivable will be paid at a future date, it is appropriate to recognise the receivable as an asset in the statement of financial position. However, there is probably a reasonable degree of certainty that some trade receivables will become bad debts and the economic benefit will not flow into the entity. It would then be appropriate to recognise an 'expense' for the expected reduction in economic benefits (as an allowance for doubtful debts).

1.2 Reliability of measurement

An item should be recognised in the financial statements only if it has a cost or value that can be measured with reliability.

In many cases, the value of an item has to be estimated because its value is not known with certainty. Using reasonable estimates is an essential part of preparing financial statements, and provided that the estimates are reasonable, it is appropriate to recognise items in the financial statements.

However, if it is not possible to make a reasonable estimate, the item should be excluded from the statement of financial position and statement of comprehensive income.

An item that cannot be estimated with reliability at one point in time might be estimated with greater certainty at a later time, when it would then be appropriate to include it in the financial statements.

1.3 Recognition of assets, liabilities, income and expenses

Recognition of assets

An asset is recognised in the statement of financial position when there is an increase in future economic benefits relating to an increase in an asset (or a reduction in a liability) which can be measured reliably.

An asset should not be recognised when expenses have been incurred but it is unlikely that any future economic benefits will flow to the entity. Instead, the item should be treated as an expense, and its cost should be 'written off'.

Recognition of liabilities

A liability is recognised when it is **probable** that an outflow of resources that embody economic benefits will result from the settlement of a present obligation, and the amount of the obligation can be measured reliably.

Recognition of income

Income is recognised in the statement of comprehensive income when an increase in future economic benefit arises from an increase in an asset (or a reduction in a liability) and this can be measured reliably.

Note that this approach to income recognition is based on changes in assets or liabilities in the statement of financial position. It is what has been called a 'balance sheet approach' to income and expense recognition. Income is recognised as an increase in an asset (for example, cash or trade receivables) or a simultaneous reduction in a liability (for example a bank overdraft).

Recognition of expenses

Expenses are recognised in the statement of comprehensive income when a decrease in future economic benefit arises from a decrease in an asset or an increase in a liability, which can be measured reliably.

2 IAS 18: REVENUE

Section overview

- The purpose of IAS 18
- Measurement of revenue
- Substance over form
- Revenue recognition from the sale of goods
- Revenue recognition from providing a service
- Revenue recognition from sales of goods with service agreements
- Other revenue recognition: interest, royalties and dividends

2.1 The purpose of IAS 18

Revenue is recognised in the statement of comprehensive income when:

- ❑ there is an increase in future economic benefits related to an increase in an asset or a decrease in a liability, **and**
- ❑ this increase in economic benefits can be reliably measured.

Revenue is income that arises in the ordinary course of activities and it is referred to by a variety of different names including sales, fees, interest, dividends and royalties.

IAS 18 **Revenue** defines revenue as ‘the gross inflow of economic benefits during the period in the course of the ordinary activities of an entity, when those inflows result in increases in equity, other than increases relating to contributions from equity participants.’

It adds that revenue relates only to economic benefits receivable by the entity for its own account. Amounts collected on behalf of a third party, such as sales tax collected on behalf of the government, must be excluded from revenue because they do not result in an increase in equity.

2.2 Measurement of revenue

IAS 18 states that revenue must be measured at ‘the fair value of the consideration received or receivable’. Broadly speaking, this is the fair market price less any volume rebates (discount allowed for buying in large quantities) or ‘trade discount allowed’.

- ❑ If a sale is a cash sale, the revenue is the immediate proceeds of the sale.
- ❑ If a sale is a normal credit sale, the revenue is the expected future receipt.

However, in some cases when the payment is deferred, the fair value might be less than the amount of cash that will eventually be received.

The difference between the nominal sale value and the fair value of the consideration is recognised as interest income.

**Example: Deferred consideration**

An enterprise sells a machine on 1 January 2014. The terms of sale are that the enterprise will receive Rs. 5 million on 31 December 2016 (2 years later).

An appropriate discount rate is 6%

1 January 2014 – Initial recognition

Initial measurement of the consideration $\text{Rs. } 5\text{m} \times \frac{1}{(1+0.06)^2} = \text{Rs. } 4,449,982$

	Debit	Credit
Receivables	4,449,982	
Revenue		4,449,982

31 December 2015

Recognition of interest revenue $\text{Rs. } 4,449,982 @ 6\% = 266,999$

	Debit	Credit
Receivables	266,999	
Revenue – interest		266,999

Balance on the receivable		Rs.
Balance brought forward		4,449,982
Interest revenue recognised in the period		266,999
Carried forward		<u>4,716,981</u>

31 December 2016

Recognition of interest revenue $\text{Rs. } 4,716,981 @ 6\% = 283,019$

	Debit	Credit
Receivables	283,019	
Revenue – interest		283,019

Balance on the receivable		Rs.
Balance brought forward		4,716,981
Interest revenue recognised in the period		283,019
Consideration received		<u>(5,000,000)</u>
Carried forward		<u>–</u>

2.3 Substance over form

The concept of 'substance over form' requires that the legal form of a transaction be ignored if the substance or economic reality differs thereof. A lease agreement (the legal document) is typical example of this concept.

Another very common example of a transaction is a sale transaction that takes place on extended credit terms either without charging interest or charging an unusually low rate of interest. In substance, it actually involves more than one transaction:

- ❑ a sale has taken place which is measured at the present value of the cash received; and
- ❑ interest at a market rate is being charged which is measured as the amount to be received less the present value thereof.

Another typical example is where a single amount is paid for an item, where a 'free service' is included with the item purchased.

Where a revenue transaction is entered into with a customer who is offered extended credit terms, the measurement of the revenue must reflect the time value of money, if it is material.

This means that, even if the revenue transaction states that there is no interest charged or reflects a very low interest charge, the interest income should be separated from the total revenue to be received and measured using the effective interest rate method and apportioned for time.

For example a sale on extended credit where the legal documents show 'SALE' and include a clause to the effect that no interest is charged and another clause that states that the customer need only pay for the goods in three years time, it is in substance two transactions:

- ❑ Sale of goods: to be measured at the cash price (or present value of future receipts); and
- ❑ Interest income: to be measured using the effective interest method, apportioned over time, using an imputed rate of interest (a market interest rate or simply the rate that discounts the future receipts to the cash sales price).

In other words, in the above example income from a sale and income from interest is recognised.

**Example: Sale on extended credit terms**

On 30 June 20X1 Hashim Limited sells goods to a customer on extended credit terms. The customer is required to pay Rs. 1 000, in full and final settlement, on 30 June 20X2. The cash sales price is Rs. 909 (present value using a discount rate of 10%).

The financial year-end is 31 December.

Required:

Provide all related journal entries in Hashim Limited's general journal assuming that:

- A. The effects of the extended credit terms *are not* considered to be material.
 B. The effects of the extended credit terms *are* considered to be material.

A. Solution to example if sale on extended credit terms – not material

20X1 Journals	Debit	Credit
30 June 20X1		
Accounts receivable	1 000	
Sales income		1 000

Recording the sale of goods (extended credit terms immaterial)

20X2 Journals	Debit	Credit
30 June 20X2		
Bank	1 000	
Accounts receivable		1 000

Recording the receipt of the amount due by the customer**B. Solution to example if sale on extended credit terms – material**

20X1 Journals	Debit	Credit
30 June 20X1		
Accounts receivable	909	
Sales income		909

Recording the sale of goods (extended credit terms material)**31 December 20X1**

Accounts receivable	(1 000 – 909) x 6 / 12; OR	45	
Interest income	(909 x 10% x 6/12)		45

Recording the interest earned on sale on extended terms: 300 / 10 x 6m**20X2 Journals****30 June 20X2**

Accounts receivable	(1 000 – 909) x 6 / 12; OR	46	
Interest income	(909 x 10% x 6/12)		46

Recording the interest earned on sale on extended terms: 300 / 10 x 4m

Bank	1 000	
Accounts receivable		1 000

Recording the receipt of the amount due by the customer

For your interest – the effective interest rate table is shown below:

Year	Amount outstanding at the beginning of the year	Interest recognised per year	Receipt due at the end of the year	Amount outstanding at the end of the year
1	909 (given)	91	(1 000)	0

Comment: Notice that the effective annual interest is 91, but it has been apportioned for time since the year-end falls within the 12-month extended settlement period.

**Example: sale on extended credit terms over 2 years**

Shahid Limited sold a plant to a customer on 1 September 20X1 for Rs 300,000 payable at the end of 31 August 20X3.

A market related interest rate is 10%.

Required:

Provide all journal entries in Chief Limited's general journal for each year ended 31 December.

Solution to example sale on extended credit terms over 3 years

Comment: This is an exercise that reinforces the steps when dealing with extended credit:

- 1) calculate the cash selling price (present value of future payments); then
- 2) draw up the effective interest rate table; and then
- 3) apportion the interest for time, if the receipts are not expected at year-end..

W1. Calculation of the amount outstanding on date of sale (present value of future instalments)

	Instalment		PV Factor		Present values
1	0 (given)		0.9090909	NOTE 1	0
2	300 000 (given)		0.8264467	NOTE 1	247 934
	<u>300 000</u>				<u>247 934</u>

NOTE 1: PV Factors: $1 / 1.1 = 0.9091$ and $0.9091 / 1.1 = 0.8264$

W2. Effective interest rate table

Year	Amount outstanding at the beginning of the year		Interest revenue per 12 months	Receipt due at the end of the year	Amount outstanding at the end of the year
1	247 934	W1	24 793	(0)	272 727
2	272 727		27 273	(300 000)	0
			<u>52 066</u>	<u>(300 000)</u>	

Comment: Notice that the sales revenue (the original present value) of Rs. 247,934 plus the interest revenue of Rs. 52,066 equals the total to be received: Rs. 300,000.

	Debit	Credit
20X1 Journals		
1 September 20X1		
Accounts receivable W1	247 934	
Sales revenue		247 934
<i>Recording the sale of goods (extended credit terms material)</i>		
<hr/>		
31 December 20X1		
Accounts receivable	6 198	
Interest revenue (W2: 24 793 x 3/12)		6 198
<i>Recording the interest earned on sale on extended terms:</i>		
<hr/>		
20X2 Journals		
31 December 20X2		
Accounts receivable	25 413	
Interest revenue (W2: 24 793 x 9/12 + W2: 27 273 x 3/12)		25 413
<i>Recording the interest earned on sale on extended terms:</i>		
<hr/>		
20X3 Journals		
31 August 20X2		
Accounts receivable	20 455	
Interest revenue (W2: 27 273 x 9/12)		20 455
<i>Recording the interest earned on sale on extended terms:</i>		
<hr/>		
Bank <i>Instalment received</i>	300 000	
Accounts receivable		300 000
<i>Instalment received in full and final settlement</i>		
<hr/>		
Comment: Notice that although the terms of the sale spanned 2 years, the interest revenue of 52 066 (W2) was recognised over 3 years (see journals) due to the fact that the dates of the sale and the final receipt did not coincide with the year-end: 6 198 + 25 413 + 20 455.		

**Example: sales income and interest income**

A customer purchases an item, on 2 January 20X1, to be paid for over a period of 3 years:

End of year 20X1	40 000
End of year 20X2	50 000
End of year 20X3	29 700

The present value of these payments (using a discount rate of 10%) amounts to 100 000.

All the recognition criteria are met. The year end is 31 December.

Required:

- A. Calculate the amount of sales revenue from the sale transaction and interest revenue from the financing transaction to be recognised over the period of three years.
- B. Show the related journal entries for the year ended 31 December 20X1, 20X2 and 20X3.

Solution to example: sales income and interest income (calculations)

20X1 Journals	Debit	Credit
1 January 20X1		
Debtors (A)	100 000	
Sales (I)		100 000
<i>Sales revenue recognised at the beginning of 20X1</i>		
<hr/>		
31 December 20X1		
Debtors (A)	10 000	
Interest (I)		10 000
<i>Interest revenue recognised over the period of 20X1</i>		
<hr/>		
Bank	40 000	
Debtors (A)		40 000
<i>Receipt of first instalment in 20X1</i>		
<hr/>		
20X2 Journals		
31 December 20X2		
Debtors (A)	7 000	
Interest (I)		7 000
<i>Interest revenue recognised over the period of 20X2</i>		
<hr/>		
Bank	50 000	
Debtors (A)		50 000
<i>Receipt of instalment in 20X2</i>		
<hr/>		
20X3 Journals		
31 December 20X3		
Debtors (A)	2 700	
Interest (I)		2 700
<i>Interest revenue recognised over the period of 20X3</i>		
<hr/>		
Bank	29 700	
Debtors (A)		29 700
<i>Receipt of instalment in 20X3</i>		
<hr/>		

2.4 Revenue recognition from the sale of goods

IAS 18 says that an entity may recognise revenue from the sale of goods only when **all** of the following conditions have been met:

- ❑ The entity has transferred to the buyer the 'significant risks and rewards of ownership of the goods'. This normally occurs when legal title to the goods or possession of the goods passes to the buyer.
- ❑ The entity does not retain effective control over the goods sold, or retain a continuing management involvement to the degree usually associated with ownership.
- ❑ The amount of revenue can be measured reliably.
- ❑ It is probable that economic benefits associated with the transaction will flow to the entity.
- ❑ The costs incurred (or to be incurred) for the transaction can be measured reliably.

Risks and rewards of ownership

Transfer of risks and rewards of ownership is critical to revenue recognition. Usually risks and rewards are transferred at the same time as legal title or possession passes to the buyer. However this is not always the case.

If legal title passes but risk and rewards are retained, a sale is not recognised.

- ❑ an entity may retain obligations for unsatisfactory performance not covered by normal warranty provisions;
- ❑ the receipt of revenue may be contingent on the buyer selling the goods on;
- ❑ goods are to be installed and the installation is a significant part of the contract and remains uncompleted; or,
- ❑ the buyer has the right to rescind and the seller is uncertain about the outcome.

If legal title does not pass but the risks and rewards do, a sale is recognised.

- ❑ A seller may retain the legal title to the goods to protect the collectability of the amount due but if the entity has transferred the significant risks and rewards of ownership, the transaction is a sale and revenue is recognised.
- ❑ A seller may offer a refund if the customer is not satisfied.
 - revenue is recognised at the time of sale provided the seller can reliably estimate future returns;
 - the seller recognises a liability for returns based on previous experience and other relevant factors.

Cost recognition

Revenue and expenses must be recognised simultaneously.

Expenses can normally be measured reliably when other conditions for revenue recognition have been satisfied.

Revenue cannot be measured when the related expenses cannot be measured reliably. In such cases proceeds should be recognised as a liability not a sale.

Illustrations

The implementation guidance to IAS 18 includes specific guidance on how the rules in the standard would be applied to revenue recognition in a series of circumstances.

The following examples are based on this guidance.



Example: Simple transaction

X Plc has received an order for a “grade 1” widget machine under the following terms for a sale price of Rs. 100,000 with delivery on 30 September.
When should X Plc recognise revenue from this sale?

Analysis:

Assuming that there are no significant risks or rewards remaining with X Plc; and that X Plc will have no continuing involvement with the units, the risks and rewards of ownership pass to the customer when the machine is delivered.

Revenue should be recognised on delivery being 30 September.



Example: Sale with right of inspection

X Plc has received an order for a “grade 1” widget machine under the following terms for a sale price of Rs. 100,000 with delivery on 30 September.

The customer has the right to inspect and test the delivery before accepting the goods.

When should X Plc recognise revenue from this sale?

Analysis:

Assuming that there are no significant risks or rewards remaining with X Plc; and that X Plc will have no continuing involvement with the units the risks and rewards of ownership pass to the customer upon completion of inspection and testing and acceptance by the customer.



Example: Goods supplied on sale or return basis

Goods are sold by a manufacturer to a retailer.

The retailer has the right to return the goods if he is unable to sell them. (The goods are supplied on a ‘sale or return’ basis.)

Analysis:

The manufacturer retains significant risks of ownership until the retailer sells the goods.

Revenue should be recognised when the customer sells the goods, and not before.

Lay away sales

This is a term given to a situation where goods are delivered only when the buyer makes the final payment in a series of instalments.

Goods are delivered only when the buyer makes the final payment in a series of instalments.

Revenue from such sales is recognised when the goods are delivered.

However, revenue may be recognised earlier, i.e. when a significant deposit is received, provided the goods are on hand, identified and ready for delivery to the buyer, when experience indicates that most such sales will actually proceed to completion.



Example: Lay away sales

On 1 September, X Plc sold a “grade 1” widget machine for Rs. 100,000 to be received in four equal monthly instalments. The first instalment is payable on 30 September and the last on 31 December.

Analysis:

Revenue would be recognised on 31 December.



Example: Lay away sales

On 1 September, X Plc sold a “grade 1” widget machine for Rs. 100,000 to be received in two equal instalments. The first instalment is paid on 1 September and the second is payable on 31 December.

The customer has placed several similar orders with X Plc in the past and always fulfilled the contract.

X Plc has several “grade 1” widget machines in inventory and has set one aside for this customer.

Analysis:

Revenue is recognised on 1 September. The first instalment represents a significant deposit, goods are on hand and ready for delivery and experience indicates most such sales proceed to completion.

Subscriptions to publications

Where a series of publications is subscribed to and each publication is of a similar value revenue is recognised on a straight-line basis over the period in which the publications are despatched

If the value of each publication varies revenue is recognised on the basis of the sales value in relation to the estimated sales value of all items covered by the subscription



Example: Subscriptions to publications

A publisher of a monthly magazine has received Rs. 480,000 in annual subscriptions in advance and has produced four issues by the year end 31 March 2015.

The advance payments are non-refundable.

What revenue should be recognised for the year ended 31 March 2015?

Analysis:

Revenue for the magazines should be recognised in the periods in which they are despatched.

The revenue recognised in the year ended 31 March 2015 = Rs. 120,000 (Rs. 480,000 \times $\frac{3}{12}$).

The fact that the amount received is non-refundable does not affect how revenue is recognised.

Revenue recognition and substance

Financial statements must present fairly the effects of the transactions entered into by an entity. This means that preparers must observe the principle of 'substance over form' by recognising the economic substance of transactions where this is different from their legal form.

Sale and repurchase agreement

This is an agreement whereby the seller agrees to repurchase the same goods at a later date.

Such a transaction may or may not be a sale depending on the substance of the agreement.

If it is not a sale it is treated as a secured loan.



Example: Sale and repurchase agreement

X Plc is in the forestry business. It cuts wood and seasons it for 3 to 4 years before selling it to furniture manufacturers.

X Plc sells 1,000 tonnes of wood to a bank for Rs. 10,000 per tonne (which is below cost).

X Plc has a contract under which it will buy the wood back from the bank in two years' time for Rs. 10,000,000 plus interest.

The wood will never leave X Plc's premises.

When should X Plc recognise the revenue from this transaction?

Analysis:

Never because this is not a real sale.

There are a series of features which indicate that this is not a real sale. The facts that the sale is for less than cost, it is to an unusual customer for this type of transaction and that the wood never leaves the premises are all indicative that this is not a real sale transaction. However, the most important feature in the fact pattern is that X Plc has a contract under which it will buy the wood back at the sale proceeds plus a lender's return.

X Plc has borrowed cash using its inventory as security.

X Plc must recognise the "sale proceeds" as a liability (Dr Cash / Cr Liability).

2.5 Revenue recognition from providing a service

When an entity provides a service to a customer, and the outcome of the transaction can be estimated reliably, revenue should be recognised by reference to the stage of completion of the transaction at the reporting date.

The recognition of revenue by reference to the stage of completion of a transaction may be referred to as the '**percentage of completion method**'.

IAS 18 states that the outcome of a service transaction can be estimated reliably when **all** the following conditions apply.

- The amount of revenue can be measured reliably.
- It is probable that the economic benefits associated with the transaction will flow to the service provider.
- The stage of completion of the transaction at the reporting date can be measured reliably.
- The costs already incurred for the transaction and the costs that will be incurred to complete the transaction can be measured reliably.

There is no single approach specified for determining the stage of completion. An entity must use an approach that measures reliably the services performed.

Possible approaches include (but are not limited to):

- surveys of work performed;
- services performed to date as a percentage of total services to be performed; or
- the proportion of costs incurred to date to the estimated total costs of the transaction.

When services are performed by an indeterminate number of acts over a specified period of time, revenue is recognised on a straight-line basis over the specified period unless there is evidence that some other method better represents the stage of completion.

If a specific act is much more significant than any other acts, revenue is recognised only on execution of that act.



Example: Providing a service

X Plc is engaged on a contract to develop new computer software for a customer.

The contract has not been completed by the reporting date (31 December 2015).

X Plc is reasonably certain of the outcome to this contract.

The total revenue from the contract will be Rs. 700,000 and total costs are expected to be Rs. 400,000. Costs of Rs. 150,000 have been incurred to date.

A plc measure percentage completion by comparing costs incurred to date against total expected costs.

What revenue should be recognised for the year ended 31 December 2015?

Analysis:

Revenue in the current period should be Rs. 262,500 (Rs.700,000 × $\frac{150,000}{400,000}$).

Costs of Rs. 150,000 should also be recognised as cost of sales.

Outcome cannot be measured reliably

If the outcome cannot be measured reliably, an entity should recognise the revenue only to the extent of the expenses recognised that are recoverable.

This is often the case in the early stages of a contract.



Example: Providing a service

X Plc is engaged on a contract to develop new computer software for a customer. The contract has not been completed by the reporting date (31 December 2015). The total revenue from the contract will be Rs. 700,000.

Costs of Rs. 120,000 have been incurred to date. It is not yet certain what stage of completion has been reached, or what the further costs to completion will be.

What revenue should be recognised for the year ended 31 December 2015?

Analysis:

Revenue in the current period should be Rs. 120,000 and matching costs should be Rs. 120,000, so that there is neither a profit nor a loss in the current financial period

When it is not probable that the costs incurred will be recovered, revenue is not recognised. The costs incurred are recognised as an expense.

Tuition fees

Revenue should be recognised over a period of time (the period of instruction), in line with the way the services are provided over that period of time



Example: Tuition providers

A firm of accountants pay a tuition provider in advance to provide training for 10 trainees over a 3 year period.

The fee is structured at Rs. 1,000 per day.

The advance payment is non-refundable if any of the trainees leave the accountant's employment

When should the tuition provider recognise the fee?

Analysis:

Fees should be recognised at Rs. 1,000 per training day given.

If a trainee leaves his job the tuition provider should recognise the balance of the fee for that person immediately.

Any amount unrecognised should be shown as a liability.

Advertising commissions

Media commissions (e.g. payment for a series of adverts) should be recognised when the related advertisement or commercial appears before the public

Agency

A person or company might act for another company. In this case the first company is said to be an agent of the second company and the second company is described as the principal.

An agent might sell goods for a principal and collect the cash from the sale. The agent then hands the cash to the principal after deducting an agency fee.

The agent is providing a selling service to the principal. The agent should not recognise the whole sale price of the goods but only the fee for selling them.

An entity acts as principal only where it is exposed to the significant risks and rewards associated with the sale of goods. If this is not the case the entity is acting as agent. The risks and rewards to be considered include responsibility for fulfilling the order, inventory risk, ability to set the selling price and credit risk.



Example: Agency

Peshawar Sales Factors (PSF) distributes goods for Marden Manufacturing (MM) under an agreement with the following terms.

1. PSF is given legal title to the goods by MM and sells them to the retailers.
2. MM sets the selling price and PSF is given a fixed margin on all sales.
3. MM retains all product liability and is responsible for any manufacturing defects.
4. PSF has the right to return inventory to MM without penalty.
5. PSF is not responsible for credit risk on sales made.

During the year ended 31 December 2015 MM transferred legal title of goods to PSF which cost MM Rs. 1,000,000. These are to be sold at a mark-up of 20%. PSF is entitled to 5% of the selling price of all goods sold.

As at 31 December PSF had sold 90% of the goods and held the balance of the inventory in its warehouse. All amounts had been collected by PSF but the company has not yet remitted any cash to MM.

Analysis:

In substance PSF is acting as an agent for MM. MM retains all significant risks and rewards of ownership of the goods transferred to PSF.

PSF would recognise:	Dr	Cr
Cash ($90\% \times (\text{Rs. } 1,000,000 \times 120\%)$)	1,080,000	
Revenue ($5\% \times 90\% \times (\text{Rs. } 1,000,000 \times 120\%)$)		54,000
Liability		1,026,000
MM would recognise:	Dr	Cr
Receivable	1,026,000	
Revenue		1,026,000

MM would also recognise the unsold inventory in as part of its closing inventory.

Franchising



Definition: Franchise

Franchising is a form of business by which the owner (franchisor) of a product, service or method obtains distribution through affiliated dealers (franchisees).

The franchisor provides the franchisees with a licensed right to carry out a business activity under the franchisor's name. The franchisee owns a business which from the outside looks as if it is part of a much larger entity.

The franchisor provides services such as training and marketing and supplies inventory to the franchisee. The franchisee pays a fee for the services.



Example: Franchise

Subway is a large international franchise with many outlets in Pakistan.

Each outlet is owned by an investor and operated under the Subway umbrella.

The franchisor must recognise franchise fees in a way that reflects the purpose for which the fee is charged.



Example: Franchising

Juicy Kebab of Lamb (JKL) is a successful food retailing business.

It has expanded greatly by offering people the opportunity to open JKL outlets across Pakistan and in other countries.

Any person setting up a franchise must pay JKL an initial fee of Rs. 2,000,000 and a quarterly fee of 15% of gross revenue.

The initial fee covers:

1. Training (Rs. 100,000)
2. Supply and installation of assets (cookers, shop fittings, signage, etc. – Rs. 500,000);
3. Management assistance over first year of the business (Rs. 10,000 per month);
4. Advertising costs (covering local advertising for the launch of the business (Rs.200,000) and a contribution to JKL national advertising over the first two years of the business (Rs.45,000 per month).

Analysis:

JKL would recognise revenue as follows:

Training – as the training is delivered (reflecting the pattern of delivery)

Supply and installation of assets – On completion of installation of each asset.

Management service – On a monthly basis.

Advertising costs:

Local advertising – as the advertising is delivered

National advertising – On a monthly basis or to reflect advertising activity.

Quarterly fee – As earned in relation to sales made.

2.6 Revenue recognition from sales of goods with service agreements

Sometimes it is necessary to apply the recognition criteria to the separately identifiable components of a single transaction in order to reflect the substance of the transaction.

When the selling price of a product includes an identifiable amount for subsequent servicing, that amount is deferred and recognised as revenue over the period during which the service is performed.

The amount deferred should be sufficient to cover both the cost of servicing and a reasonable profit.



Example: Servicing in selling price

X Plc sells a new system to a client and invoices Rs.800,000.

This price includes after-sales support for the next 2 years with an estimated cost Rs. 35,000 each year.

The normal gross profit margin for such support is 17.5%.

How should the revenue be recognised?

Analysis:

The Rs. 800,000 must be split between the amount received for the system and the amount received for providing the service.

The amount for the system would be recognised in the usual way (on delivery or acceptance by the client). The revenue for providing the service is deferred and recognised over the period of service.

The revenue for providing the service is calculated to cover the costs and provide a margin of 17.5%.

	Rs.
Revenue deferred (after sales support)	
2 years × Rs.35,000/0.825	84,848
Revenue for sale of system	715,152
Total revenue	800,000

2.7 Other revenue recognition: interest, royalties and dividends

Revenue from interest, royalties and dividends should be recognised when it is probable that the benefits will flow to the entity and the amount of the revenue can be measured reliably.

IAS 18 contains the following guidance.

Interest

Interest income should be recognised on a time proportion basis that takes into account the effective yield on the interest-earning asset.



Example: Interest

X Plc has made a loan of Rs. 1,000,000.

It will receive interest at 5% in the first 2 years and then interest at 7% in the third and fourth year. All interest is received at the year ends.

The loan (Rs. 1,000,000) will be repaid at the end of the fourth year.

The effective yield on the loan is 5.9424%.

Interest income is recognised as follows:

Year	b/f	Interest	Cash	c/f
1	1,000,000	59,424	(50,000)	1,009,424
2	1,009,424	59,983	(50,000)	1,019,407
3	1,019,407	60,577	(70,000)	1,009,984
4	1,009,984	60,017	(1,070,000)	0

The journals in year 1 would be:

	Debit	Credit
Receivables	1,000,000	
Cash		1,000,000

Being: initial recognition of loan receivable

Cash (interest received)	50,000	
Receivables		50,000

Being: Nominal interest received.

Receivables	59,424	
Statement of comprehensive income		59,424

Being: Interest income recognised at the effective rate.

Royalties

Revenue from royalties should be recognised on an accruals basis, in accordance with the terms of the royalty agreement.



Example: Royalties

Peshawar Software Design (PSD) has developed a strategy game that is played on mobile phones. PSD has a 31 December year end.

Pineapple Inc. a major multi-national manufacturer pre-installs the game on the smart phones which they manufacture and pays PSD a royalty of Rs. 50 per smart phone sold.

The payment is made based on Pineapple Inc.'s monthly sales. Cash is received two weeks after the end of each month.

In December Pineapple's monthly sales were 1,800,000 units.

PSD would recognise revenue of Rs. 90,000,000 ($1,800,000 \times \text{Rs. } 50$) in December.

Receivables	90,000,000	
Revenue		90,000,000

Dividends

Revenue from dividends should be recognised when the right to receive the dividend is established.



Example: Dividends

Karachi International Investments (KII) owns shares in two foreign companies.

It owns 5% of the ordinary shares of Overseas Inc. and 10% of shares in Foreign Ltd. These companies operate in different jurisdictions.

The directors of Foreign Ltd declared a dividend that would translate into Rs.2,000,000 on 15 November 2015. Foreign Ltd operates in a jurisdiction where the declaration of a dividend must be approved by the shareholders in a general meeting. Foreign Ltd will hold the next shareholders' meeting in February.

The directors of Overseas Inc. declared a dividend that would translate into Rs.1,000,000 on 21 December 2015. Overseas Inc. operates in a jurisdiction where there is no requirement for further approval before a dividend is paid.

What amount of dividend income should Karachi International Investments recognise in its 13 December 2015 financial statements?

	Rs.
Dividend from Foreign Ltd	nil
KII's right to receive dividend from Foreign Ltd will only be established if it is approved in the February meeting. If this is the case KII will recognise its share of the dividend in 2016.	
Dividend from Overseas Inc. (Rs. 1,000,000 × 5%)	50,000
KII's right to receive the dividend is established by the declaration of the directors	
	50,000

Preparation of financial statements

Contents

- 1 The components of financial statements
- 2 Structure and content of the statement of financial position
- 3 Structure and content of the statement of comprehensive income
- 4 Technique of preparing financial statements
- 5 Accounting for taxation
- 6 Accounting for share issues
- 7 Financial statements – specimen formats

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 1 Prepare financial statements in accordance with specified international pronouncements.

LO1.1.1: *Preparation of statements of financial position:* Prepare simple statement of financial position in accordance with the guidance in IAS 1 from data and information provided

LO1.2.1: *Preparation of statement of comprehensive income:* Prepare simple statement of comprehensive income in accordance with the guidance in IAS 1 from data and information provided

1 THE COMPONENTS OF FINANCIAL STATEMENTS

Section overview

- Preparing financial statements
- The format of published accounts

1.1 Preparing financial statements

The basic approach to preparing a statement of financial position and a statement of comprehensive income in practice can be summarised as follows.

- The balances on all the accounts in the general ledger (nominal ledger or main) are extracted into a trial balance. (A list of balances on all ledger accounts for assets, liabilities, capital, income and expenses).
- Adjustments are made for 'year-end' items, such as:
 - depreciation charges for non-current assets;
 - accruals and prepayments for expense items;
 - adjusting the allowance for bad (irrecoverable) debts;
 - closing inventory; and
 - other items and transactions not yet recorded or incorrectly recorded.
- The adjusted income and expense balances are entered into a statement of comprehensive income to establish the profit or loss for the period.
- The adjusted asset, liability and capital balances, together with the retained profit for the year, are entered into a statement of financial position as at the end of the reporting period.

This process can be used to prepare the statement of comprehensive income and statement of financial position of a sole proprietor, a partnership or a company.

It is likely that you will be given a trial balance with information about missing or incorrectly treated items. You will then be asked to construct a statement of financial position and a statement of comprehensive income.

1.2 The format of published accounts

Some entities must publish financial statements in accordance with International Financial Reporting Standards International Accounting Standards).

IAS 1: Presentation of Financial Statements, sets out the rules on the form and content of financial statements which such entities must comply with.

IAS 1 specifies what published 'general-purpose' financial statements should include, and provides a format for a statement of financial position, statement of comprehensive income, and statement of changes in equity.

The objective of general-purpose financial statements is to provide information about the financial position of the company, and its financial performance and cash flows, that is useful to a wide range of users in making economic decisions.

A complete set of financial statements consists of:

- ❑ a statement of financial position as at the end of the period;
- ❑ a statement of comprehensive income for the period (made up of a statement of profit or loss and a statement of other comprehensive income);
- ❑ a statement of changes in equity for the period;
- ❑ a statement of cash flows statement of cash flows (dealt with in the next chapter); and
- ❑ notes to these statements, consisting of a summary of significant accounting policies used by the entity and other explanatory notes.

Further requirements include:

- ❑ Financial statements should present fairly the financial position, financial performance and cash flows of the entity.
- ❑ Comparative information for the immediately preceding accounting period should be disclosed (you will not be asked to provide comparative information).
- ❑ Each component of the financial statements must be properly identified with the following information displayed prominently:
 - the name of the reporting entity
 - the date of the end of the reporting period or the period covered by the statement, whichever is appropriate
 - the currency in which the figures are reported
 - the level of rounding used in the figures (for example, whether the figures thousands of rupees or millions of rupees).

This syllabus examines only the preparation of statements of financial position and statements of comprehensive income. The other detail given above is for completeness.

Note: IAS 1 does not specify what the statements must be called and allows the use of other terminology. For example a statement of financial position is often called a balance sheet and a statement of profit or loss is often called an income statement.

2 STRUCTURE AND CONTENT OF THE STATEMENT OF FINANCIAL POSITION

Section overview

- Introduction
- Current and non-current assets and liabilities
- Current assets
- Current liabilities
- Information to be presented on the face of the statement of financial position

2.1 Introduction

IFRS uses terms which are incorporated into this study text. However, it does not forbid the use of other terms and you might see other terms used in practice.

IAS 1 sets out the requirements for information that must be presented in the statement of financial position or in notes to the financial statements, and it also provides implementation guidance. This guidance includes an illustrative format for a statement of financial position. This format is not mandatory but you should learn it and use it wherever possible.

2.2 Current and non-current assets and liabilities

Current and non-current items should normally be presented separately in the statement of financial position, so that:

- current and non-current assets are divided into separate classifications; and
- current and non-current liabilities are also classified separately.

As a general rule, an amount is 'current' if it is expected to be recovered or settled no more than 12 months after the end of the reporting period.

2.3 Current assets

IAS 1 states that an asset should be classified as a current asset if it satisfies **any** of the following criteria:

- The entity expects to realise the asset, or sell or consume it, in its normal operating cycle.
- The asset is held for trading purposes.
- The entity expects to realise the asset within 12 months after the reporting period.
- It is cash or a cash equivalent unless the asset is restricted from being used for at least 12 months after the reporting date. (Note: An example of 'cash' is money in a current bank account. An example of a 'cash equivalent' is money held in a term deposit account with a bank.)

All other assets should be classified as non-current assets.

This definition allows inventory or trade receivables to qualify as current assets, even if they may not be realised into cash within 12 months, provided that they will be realised in the entity's normal operating cycle or trading cycle.

The operating cycle of an entity is the time between the acquisition of assets for processing and their realisation in cash or cash equivalents. When the entity's normal operating cycle is not clearly identifiable, it is assumed to be twelve months. This is almost always the case.

2.4 Current liabilities

IAS 1 also states that a liability should be classified as a current liability if it satisfies **any** of the following criteria:

- The entity expects to settle the liability in its normal operating cycle.
- The liability is held primarily for the purpose of trading. This means that all trade payables are current liabilities, even if settlement is not due for over 12 months after the end of the reporting period.
- It is due to be settled within 12 months after the end of the reporting period.
- The entity does **not** have the unconditional **right** to defer settlement of the liability for at least 12 months after the end of the reporting period.

All other liabilities should be classified as non-current liabilities.

2.5 Information to be presented on the face of the statement of financial position

IAS 1 provides a list of items that, **as a minimum**, must be shown on the face of the statement of financial position as a 'line item' (in other words, on a separate line in the statement):

Assets

- (a) Property, plant and equipment
- (b) Investment property
- (c) Intangible assets
- (d) Long-term financial assets, such as long-term holdings of shares in other companies, with the exception of item (e) below
- (e) Investments accounted for using the equity method (not in this syllabus)
- (f) Biological assets
- (g) Inventories
- (h) Trade and other receivables
- (i) Cash and cash equivalents.

Liabilities

- (j) Trade and other payables
- (k) Provisions
- (l) Financial liabilities, excluding any items in (j) and (k) above: (for example, bank loans)
- (m) Liabilities (but possibly assets) for current tax, as required by **IAS 12: Income Taxes**
- (n) Deferred tax liabilities (but possibly assets). These are always non-current.

Equity

- (o) Issued capital and reserves attributable to the **owners** of the entity. (The term 'owners', refers to the **equity holders**.)

Additional line items should be included in the statement of financial position when presenting them separately and is 'relevant to an understanding of the entity's financial position.

Information to be shown on the face of the statement of financial position or in notes

Some of the line items in the statement of financial position should be sub-classified into different categories, giving details of how the total figure is made up. This sub-classification may be presented either:

- as additional lines on the face of the statement of financial position (adding up to the total amount for the item as a whole) or
- in notes to the financial statements.

For example:

- Tangible non-current assets should be divided into sub-categories, as required by **IAS 16: Property, Plant and Equipment**.
- Receivables should be sub-classified into trade receivables, receivables from related parties, prepayments and other amounts.
- Inventories are sub-classified in accordance with **IAS 2: Inventories** into categories such as merchandise, materials, work-in-progress and finished goods.


Example: statement of financial position of an individual entity

IAS 1 does not specify what the exact format of the statement of financial position should be. However, it includes an illustrative statement of financial position in Guidance to implementing the Standard (which is an appendix to the Standard).

The example below is based on that example. Illustrative figures are included.

Statement of financial position of ABCD Entity as at 31 December 20XX

	Rs. m	Rs. m
Assets		
Non-current assets		
Property, plant and equipment	205.1	
Intangible assets	10.7	
Investments	6.8	
	222.6	222.6
Current assets		
Inventories	17.8	
Trade and other receivables	13.3	
Other current assets	2.0	
Cash and cash equivalents	0.7	
	33.8	33.8
Total assets		256.4
Equity and liabilities		
Share capital	50.0	
Retained earnings (accumulated profits)	60.6	
Other components of equity	31.9	
	142.5	142.5
Non-current liabilities		
Long-term borrowings	30.0	
Deferred tax	4.5	
	34.5	
Current liabilities		
Trade and other payables	67.1	
Short-term borrowings (bank overdraft)	3.2	
Current portion of long-term borrowing	5.0	
Current tax payable	4.1	
	79.4	
Total liabilities		113.9
Total equity and liabilities		256.4

3 STRUCTURE AND CONTENT OF THE STATEMENT OF COMPREHENSIVE INCOME

Section overview

- A single statement or two statements
- Information to be presented on the face of the statement of comprehensive income
- Analysis of expenses by their function
- Analysis of expenses by their nature

3.1 A single statement or two statements

The statement of comprehensive income provides information about the performance of an entity in a period. It consists of two parts:

- a statement of profit or loss – a list of income and expenses which result in a profit or loss for the period; and
- a statement of other comprehensive income – a list of other gains and losses that have arisen in the period.

IAS 1 allows an entity to present the two sections in a single statement or in two separate statements. If two separate statements are used they should include all the information that would otherwise be included in the single statement of comprehensive income.

The statement of profit or loss shows the components of profit or loss, beginning with 'Revenue' and ending with 'Profit (or Loss)' for the period after tax.

Examples of other comprehensive income

In this syllabus the only gains and losses that are recognised in the statement of other comprehensive income are those arising on the revaluation of property, plant and equipment under the rules in IAS 16. This was covered in more detail in chapter 3 of this text.

There are many other transactions which must be recognised in the statement of other comprehensive income but these are not in the scope of this syllabus. You will study them in papers at a higher level.

Definition of total comprehensive income

Total comprehensive income during a period is the sum of:

- the profit or loss for the period and
- other comprehensive income.

3.2 Information to be presented on the face of the statement of comprehensive income

As a **minimum**, IAS 1 requires that the statement of comprehensive income should include line items showing the following amounts for the financial period:

- (a) revenue
- (b) finance costs (for example, interest costs)
- (c) tax expense
- (d) an amount related to the profit or loss from discontinued operations (IFRS5)
- (e) profit or loss
- (f) each component of 'other comprehensive income
- (g) total comprehensive income.

Additional line items should be presented on the face of the statement of comprehensive income when it is relevant to an understanding of the entity's financial performance.



Example: statement of comprehensive income of an individual entity

IAS 1 does not specify formats.

The example below is based on a suggested presentation included in the implementation guidance to IAS 1.

XYZ Entity: Statement of comprehensive income for the year ended 31 December 20XX

	Rs. 000
Revenue	678
Cost of sales	250
Gross profit	428
Other income	44
Distribution costs	(98)
Administrative expenses	(61)
Other expenses	(18)
Finance costs	(24)
Profit before tax	271
Taxation	(50)
PROFIT FOR THE YEAR	221
Other comprehensive income	
Gains on property revaluation	46
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	267

Information to be shown on the face of the statement of comprehensive income (or the statement of profit or loss, if separate) or in the notes

The following information may be shown either on the face of the statement of comprehensive income or in a note to the financial statements:

- material items** of income and expense
- an **analysis of expenses**, providing either:
 - expenses analysed by their nature, or
 - expenses analysed by the function that has incurred them.

IAS 1 encourages entities to show this analysis of expenses on the face of the statement of comprehensive income, rather than in a note to the accounts.

Material items that might be disclosed separately include:

- a write-down of inventories from cost to net realisable value, or a write-down of items of property, plant and equipment to recoverable amount
- the cost of a restructuring of activities
- disposals of items of property, plant and equipment
- discontinued operations
- litigation settlements
- a reversal of a provision.

3.3 Analysis of expenses by their function

When expenses are analysed according to their function, the functions are commonly 'cost of sales', 'distribution costs', 'administrative expenses' and 'other expenses'. This method of analysis is also called the 'cost of sales method'.

In practice, most entities use this method.

An example of a statement of comprehensive income, showing expenses by function (cost of sales, distribution costs, administrative expenses) is as follows.



Example: Analysis of expenses by function

The following is an extract from the accounts of Entity Red for the year to 30 June 20X5, after the year-end adjustments had been made:

	Debit	Credit
	Rs. 000	Rs. 000
Cost of sales	6,214	
Distribution costs	3,693	
Revenue		14,823
Other expenses	248	
Administrative expenses	3,901	
Other income		22

Required

Show the first part of Entity Red's statement of comprehensive income using the 'cost of sales' analysis method.

Entity Red: Statement of comprehensive income for the year ended 30 June 20X5

	Rs. 000
Revenue	14,823
Cost of sales	6,214
Gross profit	8,609
Other income	22
Distribution costs	(3,693)
Administrative expenses	(3,901)
Other expenses	(248)
Profit before tax	789

The basis for separating these costs between the functions would be given in the question.

3.4 Analysis of expenses by their nature

When expenses are analysed according to their nature, the categories of expenses will vary according to the nature of the business.

In a manufacturing business, expenses would probably be classified as:

- ❑ raw materials and consumables used;
- ❑ staff costs ('employee benefits costs'); and
- ❑ depreciation.

Items of expense that on their own are immaterial are presented as 'other expenses'.

There will also be an adjustment for the increase or decrease in inventories of finished goods and work-in-progress during the period.

Other entities (non-manufacturing entities) may present other expenses that are material to their business.

An example of a statement of comprehensive income, showing expenses by their nature, is shown below, with illustrative figures included.



Example: Analysis of expenses by nature

The following is an alternative method of presenting the accounts of Entity Red.

	Rs. 000
Increase in inventories of finished goods and work-in-progress	86
Revenue	14,823
Raw materials and consumables	5,565
Depreciation	1,533
Other income	22
Staff costs	4,926
Other operating expenses	2,118

Required

Show the first part of Entity Red's statement of comprehensive income using the 'nature of expenditure' method, down to the operating profit level.

Entity Red: Statement of comprehensive income for the year ended 30 June 20X5

	Rs. 000	Rs. 000
Revenue		14,823
Other income		22
		14,845
Changes in inventories of finished goods and work-in-progress (reduction = expense, increase = negative expense)	(86)	
Raw materials and consumables used	5,565	
Staff costs (employee benefits costs)	4,926	
Depreciation and amortisation expense	1,533	
Other operating expenses	2,118	
		14,056
Profit before tax		789

4 TECHNIQUE OF PREPARING FINANCIAL STATEMENTS

Section overview

- Introduction
- Preparation of financial statements: Approach 1
- Preparation of financial statements: Approach 2

4.1 Introduction

In this exam you will be expected to prepare a statement of financial position and statement of comprehensive income from a trial balance. These questions are usually quite time pressured so you need to develop a good technique in order to execute such tasks in an effective way.

The rest of this chapter use the following example to illustrate how such questions might be approached. You will need to choose an approach and practice it.

The example includes several straightforward year-end adjustments for illustrative purposes. In the exam you will face more complicated adjustments than these.

You will have come across the content of this section in your previous studies. If you are comfortable with the preparation of basic statements of financial position and statements of profit or loss from a trial balance then you may not need this section. It is simply provided to provide you with a refresher of basic technique.

**Example:****ABC – Trial balance as at 31 December 2013**

	Rs.	Rs.
Sales		428,000
Purchases	304,400	
Wages and salaries	64,000	
Rent	14,000	
Heating and lighting	5,000	
Inventory as at 1 January 2013	15,000	
Drawings	22,000	
Allowance for doubtful debts		4,000
Non-current assets	146,000	
Accumulated depreciation:		32,000
Trade receivables	51,000	
Trade payables		42,000
Cash	6,200	
Capital as at 1 January 2013		121,600
	627,600	627,600

Further information:

- a) Rs. 400 is owed for heating and lighting expenses.
- b) Rs. 700 has been prepaid for rent.
- c) It is decided that a bad debt of Rs. 1,200 should be written off, and that the allowance for doubtful debts should be increased to Rs. 4,500.
- d) Depreciation is to be provided for the year at 10% on cost
- e) Inventory at 31 December 2013 was valued at Rs. 16,500.

The journals

The business needs to process the following double entries to take account of the “further information” given above.



Example: Closing journals

	Debit	Credit
a) Accrual		
Heating and lighting expense	400	
Accrual		400
Being: Accrual for heating and lighting expense		
b) Rent prepayment		
Prepayment	700	
Rent expense		700
Being: Adjustment to account for rent prepayment		
c) Bad and doubtful debt		
Bad and doubtful debt expense	1,200	
Receivables		1,200
Being: Write off of bad debt		
Bad and doubtful debt expense	500	
Allowance for doubtful debts		500
Being: Increase in the allowance for doubtful debts		
d) Depreciation		
Depreciation expense	14,600	
Accumulated depreciation		14,600
Being: Depreciation for the year (10% of 146,000)		
e) Closing inventory		
Inventory (asset)	16,500	
Inventory (cost of sales)		16,500
Being: Recognition of inventory at the year-end		

These journals are only given to explain the double entry required. You should never write something like this in a preparation of financial statements question. It uses up too much time. You want to do double entry rather than write journals.

The chapter continues to show two possible approaches that you might follow. You do not have to do either. If you decide on a way that suits you then use it.

If you attend courses your lecture will show you how to do this. They are very experienced. Do as they advise.

4.2 Preparation of financial statements: Approach 1

Step 1: Perform double entry on the face of the question and open up new accounts as you need them in any space that you have. (DO NOT COPY OUT THE TRIAL BALANCE).

After this your question paper should look something like the following (with the double entries are shown in bold italics):



Example: ABC – Trial balance as at 31 December 2013

	Rs.	Rs.
Sales		428,000
Purchases	304,400	
Wages and salaries	64,000	
Rent	14,000	<i>700^b</i>
Heating and lighting	5,000 + <i>400^a</i>	
Inventory as at 1 January 2013	15,000	
Drawings	22,000	
Allowance for doubtful debts		4,000+ <i>500^c</i>
Non-current assets	146,000	
Accumulated depreciation:		32,000 + <i>14,600^d</i>
Trade receivables	51,000	<i>1,200^c</i>
Trade payables		42,000
Cash	6,200	
Capital as at 1 January 2013		121,600
	627,600	627,600
<i>Accruals</i>		<i>400^a</i>
<i>Prepayments</i>	<i>700^b</i>	
<i>Bad and doubtful debt expense</i>	<i>1200^c + 500^c</i>	
<i>Depreciation expense</i>	<i>14,600^d</i>	
<i>Closing inventory (asset)</i>	<i>16,500^e</i>	
<i>Closing inventory (cost of sales)</i>		<i>16,500^e</i>

Step 2: Draft pro-forma financial statements including all of the accounts that you have identified. (A pro-forma is a skeleton document into which you can copy numbers later)

Step 3: Copy the numbers from the trial balance into the pro-forma statements. Note that if a number copied onto the financial statements is made up of a number provided in the original trial balance that has been adjusted, you must show the marker what you have done. This may involve adding in an additional explanation below the main answer or may be shown on the face of the statements.

Step 4: Calculate profit for the year.

Step 5: Complete statement of financial position by adding profit to the opening capital, deducting drawings to find the closing capital.

The final answer might look like this:



Example: ABC – Statement of financial position

	Rs.	Rs.
Assets		
Non-current assets		
Cost	146,000	
Accumulated depreciation (32,000 + 14,600)	(46,600)	
	<u> </u>	99,400
Current assets		
Inventories	16,500	
Trade receivables (51,000 – 1,200)	49,800	
Allowance for doubtful debts (4,000 + 500)	(4,500)	
	45,300	
Prepayments	700	
Cash	6,200	
	<u> </u>	68,700
Total assets		<u>168,100</u>
Equity and liabilities		
Capital		
At start of year	121,600	
Profit for the year	26,100	
Drawings	(22,000)	
	<u> </u>	125,700
Current liabilities		
Trade payables	42,000	
Accruals (and prepaid income)	400	
	<u> </u>	42,400
Total equity and liabilities		<u>168,100</u>


Example: ABC – Statement of comprehensive income (statement of profit or loss)

	Rs.	Rs.
Revenue		428,000
Cost of sales		
Opening inventory	15,000	
Purchases	304,400	
	<u>319,400</u>	
Closing inventory	<u>(16,500)</u>	
		<u>(302,900)</u>
Gross profit		125,100
Expenses:		
Wages and salaries	64,000	
Depreciation (W1)	14,600	
Rent (14,000 – 700)	13,300	
Heating and lighting (5,000 + 400)	5,400	
Bad and doubtful debts (1,200 + 500)	<u>1,700</u>	
		<u>(99,000)</u>
		<u>26,100</u>

Workings

W1 – Depreciation: 10% of 146,000 = 14,600

4.3 Preparation of financial statements: Approach 2

Step 1: Draft pro-forma financial statements including all of the accounts that you have identified from reading the question. Leave spaces in case you have missed an account that you might need to insert later.

Step 2: Copy the numbers from the trial balance into the pro-forma statements. If you know that a number is not to be adjusted then you can copy it straight to its destination. Otherwise set up bracketed workings next to the narrative in the pro-forma.

After step 2 your answer might look like this:



Example: ABC – Statement of financial position

	Rs.	Rs.
Assets		
Non-current assets		
Cost	146,000	
Accumulated depreciation (32,000)	_____	
Current assets		
Inventories		
Trade receivables (51,000)	□	
Allowance for doubtful debts (4,000)	□	
Prepayments		
Cash	6,200	

Total assets		_____

Equity and liabilities		
Capital		
At start of year	121,600	
Profit for the year		
Drawings	(22,000)	

Current liabilities		
Trade payables	42,000	
Accruals (and prepaid income)	_____	
Total equity and liabilities		_____


Example: ABC – Statement of comprehensive income (statement of profit or loss)

	Rs.	Rs.
Revenue		428,000
Cost of sales		
Opening inventory	15,000	
Purchases	304,400	
	319,400	
Closing inventory		
Gross profit		
Expenses:		
Wages and salaries	64,000	
Depreciation		
Rent (14,000		
Heating and lighting (5,000		
Bad and doubtful debts		

Step 3: Perform double entry on the face of your answer.

Step 4: Complete the bracketed workings and copy totals into their final destinations.

Step 5: Calculate profit for the year.

Step 6: Complete statement of financial position by adding profit to the opening capital, deducting drawings to find the closing capital.

The final answer might look like this:



Example: ABC – Statement of financial position

	Rs.	Rs.
Assets		
Non-current assets		
Cost	146,000	
Accumulated depreciation (32,000 + 14,600)	(46,600)	
	<hr/>	99,400
Current assets		
Inventories	16,500	
Trade receivables (51,000 – 1,200)	49,800	
Allowance for doubtful debts (4,000 + 500)	(4,500)	
	45,300	
Prepayments	700	
Cash	6,200	
	<hr/>	68,700
Total assets		<hr/> <hr/> 168,100
Equity and liabilities		
Capital		
At start of year	121,600	
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Drawings	(22,000)	
	<hr/>	125,700
Current liabilities		
Trade payables	42,000	
Accruals (and prepaid income)	400	
	<hr/>	42,400
Total equity and liabilities		<hr/> <hr/> 168,100


Example: ABC – Statement of comprehensive income (statement of profit or loss)

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Closing inventory	<u>(16,500)</u>	
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Gross profit		125,100
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Depreciation (W1)	14,600	
Rent (14,000 – 700)	13,300	
Heating and lighting (5,000 + 400)	5,400	
Bad and doubtful debts (1,200 + 500)	<u>1,700</u>	
		<u>(99,000)</u>
		<u>26,100</u>

Workings

W1 – Depreciation: 10% of 146,000 = 14,600

5 ACCOUNTING FOR TAXATION

Section overview

- Taxation on profits
- Taxation in the statement of comprehensive income
- Taxation in the statement of financial position

5.1 Taxation on profits

A company is a legal person, and is liable to pay tax on the profits that it makes. This tax is called income tax in international accounting standards.

The statement of comprehensive income and statement of financial position of a sole trader or partnership are prepared without any concern for taxation on profits. The taxation of the income of sole traders and partners is not a concern of their businesses, and is not recorded in the financial accounts of the business.

Companies are different, because the company has a liability for taxation that is reported in its statement of comprehensive income and statement of financial position.

- The statement of comprehensive income reports the amount of taxation on the profit of the company for the year. This is deducted in reaching a figure for profit after taxation.
- The statement of financial position reports the amount of taxation that the company owes to the tax authorities as at the end of the reporting period.

5.2 Taxation in the statement of comprehensive income

Taxation in the statement of comprehensive income might relate to the profit or loss section or to other comprehensive income. Tax is recognised in each section as appropriate.

The tax charge that relates to profit or loss is a charge against profits after interest. The profit after tax is added to the retained earnings reserve.



Example:

	Rs.
Profits from operations	460,000
Interest	(60,000)
Profit before tax	<u>400,000</u>
Tax	<u>(100,000)</u>
Profit after tax	<u>300,000</u>

The profit after tax is added to the retained earnings (accumulated profits) brought forward at the start of the year to give a total which appears on the face of the statement of financial position at the year end (unless there are any other transfers into or out of this amount, for example, dividend payments).

Over-estimate or under-estimate of tax from the previous year

When the financial statements are prepared, the tax charge on the profits for the year is likely to be an estimate. The figure for tax on profits in the statement of comprehensive income is therefore not the amount of tax that will eventually be payable, because it is only an estimate. The actual tax charge, agreed with the tax authorities some time later, is likely to be different.

In these circumstances, the tax charge for the year is adjusted for any under-estimate or over-estimate of tax in the previous year.

- ❑ An under-estimate of tax on the previous year's profits is added to the tax charge for the current year.
- ❑ An over-estimate of tax on the previous year's profits is deducted from the tax charge for the current year.



Example:

	Rs.	Rs.
Profit from operations		460,000
Interest		(60,000)
Profit before tax		<u>400,000</u>
Tax:		
Adjustment for under-estimate of tax in the previous year	3,000	
Tax on current year profits	<u>100,000</u>	
Tax charge for the year		<u>(103,000)</u>
Profit after tax		<u>297,000</u>

5.3 Taxation in the statement of financial position

The taxation charge for the year is the liability that the company expects to pay. The timing of tax payments on profits varies from one country to another, depending on the tax rules in each country. The actual amount of tax payable, and reported in the statement of financial position as a current liability (taxation payable), is calculated as follows:



Illustration:

	Rs.
Tax payable at the beginning of the year	X
Tax charge for the year	X
	<u>X</u>
Tax payments made during the year	<u>(X)</u>
Tax payable at the end of the year	<u>X</u>

**Example:**

Fresh Company has a financial year ending on 31 December. At 31 December Year 5 it had a liability for income tax (= tax on its profits) of Rs. 77,000. The tax on profits for the year to 31 December Year 6 was Rs. 114,000.

The tax charge for the year to 31 December Year 5 was over-estimated by Rs. 6,000.

During the year to 31 December Year 6, the company made payments of Rs. 123,000 in income tax.

Required

Calculate:

- the tax charge for the year to 31 December Year 6, to include in the statement of comprehensive income
- the liability for income tax as at 31 December Year 6, to include in the balance sheet.

**Answer**

(a)

Tax:	Rs.
Adjustment for over-estimate of tax in the previous year	(6,000)
Tax on current year profits	114,000
Taxation charge for the year	<u>108,000</u>

(b)

	Rs.
Tax payable at the beginning of the year	77,000
Tax charge for the year	108,000
	<u>185,000</u>
Tax payments made during the year	(123,000)
Tax payable at the end of the year	<u>62,000</u>

The tax payable will appear as a current liability in the statement of financial position.

6 ACCOUNTING FOR SHARE ISSUES

Section overview

- Issue of equity shares

6.1 Issue of equity shares

When an entity issues new ordinary shares:

- the issued shares become a part of equity, and
- the entity receives cash from the issue, or possibly assets other than cash (for which a carrying value is determined).

The issue price of new equity shares is usually higher than their face value or nominal value. The difference between the nominal value of the shares and their issue price is accounted for as share premium, and credited to a share premium reserve. (This reserve is a part of equity).



Illustration: Share issue double entry

	Debit	Credit
Bank (cash received)	X	
Share capital (nominal value of shares issued)	X	
Share premium (with the excess of the issue price of the shares over their nominal value)		X

Transaction costs of issuing new equity shares for cash should be debited directly to equity.

The costs of the issue, net of related tax benefit, are set against the share premium account. (If there is no share premium on the issue of the new shares, issue costs should be deducted from retained earnings).



Example:

A company issues 200,000 shares of Rs. 25 each at a price of Rs. 250 per share. Issue costs are Rs. 3,000,000.

The share issue would be accounted for as follows:

	Dr (Rs. 000)	Cr (Rs. 000)
Cash (200,000 × 250)	50,000	
Share capital (200,000 × 25)		5,000
Share premium (200,000 × 250 – 25)		45,000
Share premium		3,000
Cash	3,000	

7 FINANCIAL STATEMENT – SPECIMEN FORMATS

Section overview

- Statement of comprehensive income (analysis of expenses by function)
- Statement of comprehensive income (analysis of expenses by nature)
- Statement of financial position

IAS 1 does not specify formats for financial statements. However, it includes illustrative statements in an appendix to the Standard).

The illustrations below are based on the illustrative examples but have been modified to exclude some items not in this syllabus.

7.1 Statement of comprehensive income (analysis of expenses by function)



Illustration: Statement of comprehensive income (analysis of expenses by function)

	Rs. m
Statement of comprehensive income for the year ended 31 December 2013	
Revenue	X
Cost of sales	(X)
Gross profit	X
Other income	X
Distribution costs	(X)
Administrative expenses	(X)
Other expenses	(X)
Finance costs	(X)
Profit before tax	X
Taxation	(X)
PROFIT FOR THE YEAR	X
Other comprehensive income	
Gains on property revaluation	X
Other gains and losses	X
Other comprehensive income for the year	X
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	X

7.2 Statement of comprehensive income (analysis of expenses by nature)



Illustration: Statement of comprehensive income (analysis of expenses by function)

Statement of comprehensive income for the year ended 31 December 2013

	Rs. m	
Revenue	X	
Other income	X	
Changes in inventories of finished goods and work-in-progress	<u>X</u>	
Raw materials and consumables used	X	
Staff costs (employee benefits costs)	(X)	
Depreciation and amortisation expense	(X)	
Other expenses	(X)	
Finance costs	<u>(X)</u>	
Profit before tax	X	
Taxation	<u>(X)</u>	
PROFIT FOR THE YEAR	X	
Other comprehensive income		
Gains on property revaluation	<table border="1" style="display: inline-table;"><tr><td style="text-align: center;">X</td></tr></table>	X
X		
Other gains and losses	<table border="1" style="display: inline-table;"><tr><td style="text-align: center;">X</td></tr></table>	X
X		
Other comprehensive income for the year	<u>X</u>	
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u><u>X</u></u>	

7.3 Statement of financial position



Illustration: Statement of financial position format

Statement of financial position as at 31 December 2013

	Rs. m	Rs. m
Assets		
Non-current assets		
Property, plant and equipment		X
Intangible assets		X
Investments		X
<i>Total non-current assets</i>		X
Current assets		
Inventories		X
Trade and other receivables		X
Other current assets		X
Cash and cash equivalents		X
<i>Total current assets</i>		X
Total assets		X
Equity and liabilities		
Share capital		X
Retained earnings (accumulated profits)		X
Other components of equity		X
<i>Total equity</i>		X
Non-current liabilities		
Long-term borrowings	X	
Deferred tax	X	
<i>Total non-current liabilities</i>	X	
Current liabilities		
Trade and other payables	X	
Short-term borrowings (bank overdraft)	X	
Current portion of long-term borrowing	X	
Current tax payable	X	
<i>Total current liabilities</i>	X	
<i>Total liabilities</i>		X
Total equity and liabilities		X

IAS 7: Statement of cash flows

Contents

- 1 Statement of cash flows: Introduction
- 2 Statement of cash flows: Format
- 3 Cash flows from operating activities: The indirect method
- 4 Indirect method: Adjustments for working capital
- 5 Cash flows from operating activities: The direct method
- 6 Cash flows from investing activities
- 7 Cash flows from financing activities
- 8 Statement of cash flows – specimen formats

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 1 Prepare financial statements in accordance with specified international pronouncements.

LO1.3.1: *Preparation of statement of cash flows:* Compute items which are presented on the statement of cash flows

LO1.3.2: *Preparation of statement of cash flows:* Prepare a statement of cash flows under any standard method

LO 1.3.1: *Preparation of statement of cash flows:* Demonstrate understanding of cash and cash equivalents, operating, investing and financing activities

LO 1.3.2: *Preparation of statement of cash flows:* Calculate changes in working capital to be included in the operating activities

LO1.3.3: *Preparation of statement of cash flows:* Compute items which presented on the statement of cash flows

LO1.3.4: *Preparation of statement of cash flows:* Prepare a statement of cash flows of an entity in accordance with IAS 7 using the direct and the indirect method.

1 STATEMENTS OF CASH FLOWS: INTRODUCTION

Section overview

- Importance of cash flow for business
- Profit and cash flow
- IAS 7: Statement of cash flows
- Overall approach

1.1 Importance of cash flow for business

Businesses must have sufficient cash; otherwise they cannot survive.

- A business can make a loss but still survive if it has sufficient cash or access to liquidity (cash, assets that can be quickly turned into cash and new sources of borrowing).
- On the other hand, a business that is profitable cannot survive if it cannot pay its obligations when they fall due, because it does not have enough cash or access to other sources of liquidity.

Cash flow is therefore extremely important, and it is appropriate that entities should present a statement of cash flows as a financial statement.

The purpose of a statement of cash flows is to show what the cash flows of the entity have been. It can also be used to make assessments of what the cash flows of the entity might be in the future.

1.2 Profit and cash flow

When a business makes a profit of Rs. 1,000, this does not mean that it receives Rs. 1,000 more in cash than it has spent. Profit and cash flow are different, for several reasons:

There are items of cost in the statement of comprehensive income that do not represent a cash flow. Examples are:

- depreciation and amortisation charges; and
- the gain or loss on the disposal of non-current assets.

There are items of cash flow that do not appear in the statement of comprehensive income. Examples are:

- Cash flows relating to the acquisition or disposal of investments, such as the purchase of new non-current assets, and cash from the sale of non-current assets. (The statement of comprehensive income includes gains or losses on the disposal of non-current assets, but this is not the same as the cash proceeds from the sale.)
- Cash flows relating to financial transactions, such as obtaining cash by issuing shares or obtaining loans, the repayment of loans and the payment of dividends to ordinary shareholders.

1.3 IAS 7: Statement of cash flows

IAS 1 states that a complete set of financial statements should include a statement of cash flows. IAS 7: **Statement of cash flows** sets out the detailed requirements for the format and content of the statement.

A statement of cash flows provides information about where a business obtained its cash during the financial period, and how it made use of its cash.

A statement of cash flows, groups inflows and outflows of cash, under three broad headings:

- cash from operating activities;
- cash used in (or obtained from) investing activities; and
- cash paid or received in financing activities.

It also shows whether there was an increase or a decrease in the amount of cash held by the entity between the beginning and the end of the period.



Illustration:

Cash from operating activities	X/(X)
Cash used in (or obtained from) investing activities	X/(X)
Cash paid or received in financing activities.	<u>X/(X)</u>
Net cash inflow (or outflow) during the period	X/(X)
Cash and cash equivalents at the beginning of the period	<u>X/(X)</u>
Cash and cash equivalents at the end of the period	<u>X/(X)</u>

Any of the items may be positive **or negative cash flows**.

The cash inflow (or outflow) during the period can be either a positive or a negative amount.

For the purpose of a statement of cash flows, cash and cash equivalents are treated as the same:

- Cash = cash in hand (= petty cash and other cash not in the bank) + cash in the business bank account
- Cash equivalents = items that are the equivalent of cash and could be converted into cash very quickly without risk of loss (= for example cash in a deposit account or a savings account)

1.4 Overall approach

IAS 7 requires that cash flows are analysed over three headings.

Theoretically this could be done by analysing every entry in and out of the cash account(s) over the course of a period. However, the cash account is often the busiest account in the general ledger with potentially many thousands of entries. Documents that summarise the transactions are needed.

These documents already exist! They are the other financial statements (statement of financial position and statement of comprehensive income).



Illustration:

A business might buy 100 new non-current assets over the year. There would be 100 different entries for these in the cash account.

However, it should be easy to estimate the additions figure from comparing the opening and closing balances for non-current assets and isolating any other causes of movement.

For example if we know that property plant and equipment has increased by Rs. 100,000 and that the only other cause of movement was depreciation of Rs. 15,000 then additions must have been Rs. 115,000.

A lot of the numbers in statement of cash flows are derived from comparing opening and closing positions of line items in the statement of financial position. Other causes of movement can then be identified leaving the cash double entry as a balancing figure.

2 STATEMENT OF CASH FLOWS: FORMAT

Section overview

- Format
- The indirect method
- The direct method

2.1 Format

IAS 7 does not include a format that must be followed. However it gives illustrative examples of formats that meet the requirements in the standard.



Illustration: Statement of cash flows

	Rs.	Rs.
Net cash flow from operating activities		75,300
Cash flows from investing activities:		
Acquisition of shares (debentures, etc.)	(5,000)	
Purchase of property, plant and machinery	(35,000)	
Proceeds from sale of non-current assets	6,000	
Interest received/dividends received	1,500	
Net cash used in investing activities	(32,500)	(32,500)
Cash flows from financing activities:		
Proceeds from issue of shares	30,000	
Proceeds from new loan	10,000	
Repayment of loan	(17,000)	
Dividends paid to shareholders	(25,000)	
Net cash used in financing activities	(2,000)	(2,000)
Net increase/decrease in cash/cash equivalents		40,800
Cash/cash equivalents at the beginning of the year		5,000
Cash/cash equivalents at the end of the year		45,800

Operating cash flows

The operations of the business are probably the most significant source of cash.

IAS 7 allows two approaches to identifying the cash flows from operating activities:

- Direct method; and
- Indirect method

For clarity, what this means is that there are two approaches to arriving at the figure of **Rs. 75,300** in the above example.

You are expected to understand both methods.

2.2 The indirect method

The indirect method identifies the cash flows from operating activities by adjusting the profit before tax figure. It arrives at the cash from operating activities figure indirectly by reconciling a profit figure to a cash figure.

The adjustments remove the impact of accruals and non-cash items and also relocate some figures to other positions in the statement of cash flows.

The following illustration shows how the net cash flow from operating activities figure seen in the previous example was arrived at using the indirect method.



Illustration:

Statement of cash flows: indirect method	Rs.	Rs.
Cash flows from operating activities		
Profit before taxation	80,000	
Adjustments for:		
Depreciation and amortisation charges	20,000	
Interest charges in the statement of comprehensive income	2,300	
Gains on disposal of non-current assets	(6,000)	
Losses on disposal of non-current assets	4,500	
	100,800	
Increase/decrease in:		
Increase in trade and other receivables	(7,000)	
Decrease in inventories	2,000	
Increase in trade payables	3,000	
Cash generated from operations	98,800	
Taxation paid (tax on profits)	(21,000)	
Interest charges paid	(2,500)	
Net cash flow from operating activities		75,300

2.3 The direct method

The direct method calculates the cash flow from operating activities by calculating cash received from customers, cash paid to suppliers and so on.

The following illustration shows how the net cash flow from operating activities figure seen in the previous example was arrived at using the direct method.



Illustration:

Statement of cash flows: direct method	Rs.
Cash flows from operating activities	
Cash receipts from customers	348,800
Cash payments to suppliers	(70,000)
Cash payments to employees	(150,000)
Cash paid for other operating expenses	(30,000)
Cash generated from operations	<u>98,800</u>
Taxation paid (tax on profits)	(21,000)
Interest charges paid	(2,500)
Net cash flow from operating activities	<u>75,300</u>

The remainder of the statement of cash flows using the direct method is exactly the same as for the indirect method.

3 CASH FLOWS FROM OPERATING ACTIVITIES: THE INDIRECT METHOD

Section overview

- Profit before taxation
- Non-cash items
- Accruals based figures - Interest

3.1 Profit before taxation

The starting point for the statement of cash flows for a company is the operating profit after deducting interest but before taxation.

This profit figure is adjusted to calculate the amount of cash received by the business or the amount of cash paid out as a consequence of its trading operations.

The adjustments are to remove the effect of:

- Non-cash items, for example:
 - Depreciation and amortisation (depreciation of intangible non-current assets);
 - Profit or loss on disposal of non-current assets; and
- Accruals based figures, for example:
 - Interest expense or income;
 - Movement on working capital items (receivables, payables and inventory).

3.2 Non-cash items

Depreciation and amortisation

Depreciation charges and amortisation charges are not cash flows. They are expenses in the statement of comprehensive income, but do not represent payments of cash.

In order to obtain a figure for cash flow from the figure for profit, charges for depreciation and amortisation must therefore be added back to the profit figure.

Gains or losses on disposal of non-current assets

Gains or losses on the disposal of non-current assets are not cash flows. The gain or loss is calculated as the difference between:

- the net cash received from the disposal; and
- the carrying amount (net book value) of the asset at the date of disposal.

The effect of the gain or loss on disposal (a non-cash item) from the operating profit is removed by:

- deducting gain on disposal; and
- adding back losses on disposal.

The relevant cash flow is the net cash received from the sale. This is included in cash flows from investing activities as the net cash flows received from the disposal of non-current assets.



Example:

A company disposed of an item of equipment for Rs. 40,000. The equipment had originally cost Rs. 60,000 and the accumulated depreciation charged up to the date of disposal was Rs. 32,000.

	Rs.
Cost	60,000
Accumulated depreciation	(32,000)
Carrying value at date of disposal	<u>28,000</u>
Cash proceeds from sale	(40,000)
Gain on disposal	<u>12,000</u>

In the statement of cash flows, the gain on disposal of Rs. 12,000 is deducted as an adjustment to the operating profit.

The cash proceeds of Rs. 40,000 is included as a cash inflow under the heading: 'Cash flows from investing activities'.



Practice question

1

A company made a loss on the disposal of a company motor vehicle of Rs. 8,000.

The vehicle originally cost Rs. 50,000 and at the date of disposal, accumulated depreciation on the vehicle was Rs. 20,000.

What are the items that should be included for the disposal of the vehicle in the statement of cash flows for the year:

- a) in the adjustments to get from operating profit to cash flow from operations?
- b) under the heading: 'Cash flows from investing activities'?

3.3 Accruals based figures - Interest

The accruals concept is applied in accounting.

Interest charge in the statement of comprehensive income is an accrual based figure. It is added back to profit and the actual cash interest paid is deducted further down the statement of cash flows.

The final items in the operating cash flows part of a statement of cash flows are the amount of interest paid and the amount of tax paid (see later).

This figure must be calculated as follows:



Illustration:

	Rs.
Interest liability at the beginning of the year	X
Interest charge for the year (statement of comprehensive income figure)	X
	<hr/>
	X
Interest liability at the end of the year	(X)
Interest paid in the year (cash)	X
	<hr/>

Take a few minutes to make sure that you are happy about this. The same approach is used to calculate other figures.

The interest liability at the start of the year and the interest charge during the year is the most the business would pay. If the business had paid nothing it would owe this figure. The difference between this amount and the liability at the end of the year must be the amount that the business has paid.

An aside – taxation paid

The tax paid is the last figure in the operating cash flow calculation.

There is no adjustment to profit in respect of tax. This is because the profit figure that we start with is profit before tax; therefore tax is not in it to be adjusted! However, there is a tax payment and this must be recognised as a cash flow. It is calculated in the same way as shown above.

**Example:**

A company had liabilities in its statement of financial position at the beginning and at the end of 2013, as follows:

Liabilities	Interest accrual	Taxation
Beginning of 2013	Rs. 4,000	Rs. 53,000
End of 2013	Rs. 3,000	Rs. 61,000

During the year, interest charges in the statement of comprehensive income were Rs. 22,000 and taxation on profits were Rs. 77,000.

The amounts of interest payments and tax payments (cash flows) for inclusion in the statement of cash flows can be calculated as follows:

	Tax	Interest
	Rs.	Rs.
Liability at the beginning of the year	53,000	4,000
Taxation charge/interest charge for the year	77,000	22,000
	<u>130,000</u>	<u>26,000</u>
Liability at the end of the year	(61,000)	(3,000)
Cash paid during the year	<u>69,000</u>	<u>23,000</u>

4 INDIRECT METHOD: ADJUSTMENTS FOR WORKING CAPITAL

Section overview

- Working capital adjustments: introduction
- Working capital
- Changes in trade and other receivables
- Possible complication: Allowances for doubtful debts
- Changes in inventory
- Changes in trade payables
- Lack of detail

4.1 Working capital adjustments: introduction



Definition

Working capital is current assets less current liabilities.

The previous section showed that taxation and interest cash flows can be calculated by using a figure from the statement of comprehensive income and adjusting it by the movement on the equivalent balances in the statement of financial position.

This section shows how this approach is extended to identify the cash generated from operations by making adjustments for the movements between the start and end of the year for:

- trade receivables and prepayments;
- inventories; and
- trade payables and accruals.

Assuming that the calculation of the cash flow from operating activities starts with a profit (rather than a loss) the adjustments are as follows:

Balance	Increase in balance from start to the end of the year	Decrease in balance from start to the end of the year
Receivables	Subtract from profit before tax	Add back to profit before tax
Inventory	Subtract from profit before tax	Add back to profit before tax
Payables	Add back to profit before tax	Subtract from profit before tax

These are known as the working capital adjustments and are explained in more detail in the rest of this section.

4.2 Working capital

Working capital is made up of the following balances:



Illustration:

	Rs.
Inventory	X
Trade and other receivables	X
Cash	X
Trade payables	(X)
Working capital	<u>X</u>

Trade and other receivables include any prepayments.

Trade payables include accrued expenses, provided the accrued expenses do not relate to other items dealt with separately in the statement of cash flows, in particular:

- accrued interest charges; and
- taxation payable.

Interest charges and payments for interest are presented separately in the statement of cash flows, and so accrued interest charges should be excluded from the calculation of changes in trade payables and accruals.

Similarly, taxation payable is dealt with separately; therefore taxation payable is excluded from the calculation of working capital changes.

Accrued interest and accrued tax payable must therefore be deducted from the total amount for accruals, and the net accruals (after making these deductions) should be included with trade payables.

Changes in working capital and the effect on cash flow

When working capital increases, the cash flows from operations are less than the operating profit, by the amount of the increase.

Similarly, when working capital is reduced, the cash flows from operations are more than the operating profit, by the amount of the reduction.

This important point will be explained with several simple examples.

4.3 Changes in trade and other receivables

Sales revenue in a period differs from the amount of cash received from sales by the amount of the increase or decrease in receivables during the period.

When trade and other receivables go up during the year, cash flows from operations are less than operating profit by the amount of the increase.

When trade and other receivables go down during the year, cash flows from operations are more than operating profit by the amount of the reduction.

In a statement of cash flows presented using the indirect method, the adjustment for receivables is therefore:

- subtract the increase in receivables during the period (the amount by which closing receivables exceed opening receivables); or
- add the reduction in receivables during the period (the amount by which opening receivables exceed closing receivables).

Prepayments in the opening and closing statement of financial position should be included in the total amount of receivables.



Example: trade and other receivables

A company had receivables at the beginning of the year of Rs. 6,000 and at the end of the year receivables were Rs. 9,000.

During the year, sales were Rs. 50,000 in total. Purchases were Rs. 30,000, all paid in cash.

The company holds no inventories. The profit before tax for the year was Rs. 20,000 (Rs. 50,000 – Rs. 30,000).

The cash flow from operations is calculated as follows:

	Rs.
Profit before tax	20,000
Adjustments for:	
Increase in receivables (9,000 – 6,000)	(3,000)
	17,000

Proof

Cash flow from operations can be calculated as follows:

	Rs.
Receivables at the beginning of the year	6,000
Sales in the year	50,000
	56,000
Receivables at end of the year	(9,000)
Cash received	47,000
Cash paid (purchases)	(30,000)
Cash flow from operations	17,000

4.4 Possible complication: Allowances for doubtful debts

A question might provide information on the allowance for doubtful debts at the start and end of the year.

There are two ways of dealing with this:

- ❑ Adjust the profit for the movement on the allowance as a non-cash item and adjust the profit figure for the movement in receivables using the gross amounts (i.e. the balances before any deduction of the allowance for doubtful debts); or
- ❑ Make no adjustments for the movement on receivables as a non-cash item adjust the profit figure for the movement in receivables using the net amounts (i.e. the balances after the deduction of the allowance for doubtful debts).

Example: Cash paid for investments

The following information is available:

	2012 (Rs. m)		2013 (Rs. m)
Receivables	5,000		7,100
Allowance for doubtful debts	(500)		(600)
Net-amount	<u>4,500</u>		<u>6,500</u>
	Rs. m	or	Rs. m
Profit before taxation	10,000		10,000
Adjustments for non- cash items:			
Increase in allowance for doubtful debts	100		–
	<u>10,100</u>		<u>10,000</u>
Increase in receivables:			
Gross amounts: (7,100 – 5,000)	(2,100)		
Net amounts: (6,500 – 4,500)			(2,000)
	<u>8,000</u>		<u>8,000</u>

4.5 Changes in inventory

Purchases in a period differ from the cost of sales by the amount of the increase or decrease in inventories during the period.

If all purchases were paid for in cash, this means that cash payments and the cost of sales (and profit) would differ by the amount of the increase or decrease in inventories.

When the value of inventory goes up between the beginning and end of the year, cash flows from operations are less than operating profit by the amount of the increase.

When the value of inventory goes down between the beginning and end of the year, cash flows from operations are more than operating profit by the amount of the reduction.

In a statement of cash flows presented using the indirect method, the adjustment for inventories is therefore:

- ❑ subtract the increase in inventories during the period (the amount by which closing inventory exceeds opening inventory); or
- ❑ add the reduction in inventories during the period (the amount by which opening inventory exceeds closing inventory).



Example: Inventory

A company had inventory at the beginning of the year of Rs. 5,000 and at the end of the year the inventory was valued at Rs. 3,000.

During the year, sales were Rs. 50,000 and there were no receivables at the beginning or end of the year.

Purchases were Rs. 28,000, all paid in cash.

The operating profit for the year was Rs. 20,000, calculated as follows:

	Rs.
Sales	50,000
Opening inventory	5,000
Purchases in the year (all paid in cash)	28,000
	33,000
Closing inventory	(3,000)
Cost of sales	(30,000)
Profit before tax	20,000

**Example (continued)**

	Rs.
Profit before tax	20,000
Adjustments for:	
decrease in inventory (5,000 – 3,000)	2,000
	22,000

Proof: The cash flow from operations is calculated as follows:

	Rs.
Cash from sales in the year	50,000
Purchases paid in cash	(28,000)
Cash flow from operations	22,000

4.6 Changes in trade payables

Payments for purchases in a period differ from purchases by the amount of increase or decrease in trade payables during the period.

When trade payables go up between the beginning and end of the year, cash flows from operations are more than operating profit by the amount of the increase.

When trade payables go down between the beginning and end of the year, cash flows from operations are less than operating profit by the amount of the reduction.

In a statement of cash flows presented using the indirect method, the adjustment for trade payables is therefore:

- add the increase in trade payables during the period (the amount by which closing trade payables exceed opening trade payables); or
- subtract the reduction in trade payables during the period (the amount by which opening trade payables exceed closing trade payables).

Accruals in the opening and closing statement of financial position should be included in the total amount of trade payables.

However, deduct interest payable and tax payable from opening and closing payables, if the total for payables includes these items.

**Example: trade payables**

A company had no inventory and no receivables at the beginning and end of the year. All its sales are for cash, and sales in the year were Rs. 50,000.

Its purchases are all on credit. During the year, its purchases were Rs. 30,000.

Trade payables at the beginning of the year were Rs. 4,000 and trade payables at the end of the year were Rs. 6,500.

The operating profit for the year was Rs. 20,000 (Rs. 50,000 – Rs. 30,000)

	Rs.
Profit before tax	20,000
Adjustments for:	
Increase in payables (6,500 – 4,000)	2,500
	22,500

Proof: The cash flow from operations is calculated as follows:

	Rs.
Trade payables at the beginning of the year	4,000
Purchases in the year	30,000
	34,000
Trade payables at the end of the year	(6,500)
Cash paid to suppliers	27,500
Cash from sales	(50,000)
Cash flow from operations	22,500

The cash flow is Rs. 2,500 more than the operating profit, because trade payables were increased during the year by Rs. 2,500.

**Example:**

A company made an operating profit before tax of Rs. 16,000 in the year just ended.

Depreciation charges were Rs. 15,000.

There was a gain of Rs. 5,000 on disposals of non-current assets and there were no interest charges. Values of working capital items at the beginning and end of the year were:

	Receivables	Inventory	Trade payables
Beginning of the year	Rs. 9,000	Rs. 3,000	Rs. 4,000
End of the year	Rs. 6,000	Rs. 5,000	Rs. 6,500

Taxation paid was Rs. 4,800.

Required

Calculate the amount of cash generated from operations, as it would be shown in a statement of cash flows using the indirect method.

**Answer**

	Rs.	Rs.
Cash flows from operating activities		
Profit before taxation	16,000	
Adjustments for:		
Depreciation and amortisation charges	15,000	
Gains on disposal of non-current assets	(5,000)	
	<u>26,000</u>	
Decrease in trade and other receivables	3,000	
Increase in inventories	(2,000)	
Increase in trade payables	2,500	
Cash generated from operations	<u>29,500</u>	
Taxation paid (tax on profits)	(4,800)	
Net cash flow from operating activities		24,700

**Practice question****2**

During 2013, a company made a profit before taxation of Rs. 60,000. Depreciation charges were Rs. 25,000 and there was a gain on the disposal of a machine of Rs. 14,000.

Interest charges and payments of interest in the year were the same amount, Rs. 10,000.

Taxation payments were Rs. 17,000.

Values of working capital items at the beginning and end of the year were:

	Receivables	Inventory	Trade payables
Beginning of the year	Rs. 32,000	Rs. 49,000	Rs. 17,000
End of the year	Rs. 27,000	Rs. 53,000	Rs. 11,000

Calculate the net cash from operating activities, as it would be shown in a statement of cash flows (indirect method).

4.7 Lack of detail

A question might not provide all the detail needed to split out working capital into all of its component parts. If this is the case the adjustment must be made using whatever totals are available in the question.



Example:

A company made an operating profit before tax of Rs. 16,000 in the year just ended.

Depreciation charges were Rs. 15,000.

There was a gain of Rs. 5,000 on disposals of non-current assets and there were no interest charges. Values of working capital items at the beginning and end of the year were:

	Current assets	Trade payables
Beginning of the year	Rs. 12,000	Rs. 4,000
End of the year	Rs. 11,000	Rs. 6,500

Taxation paid was Rs. 4,800.

Required

Calculate the amount of cash generated from operations, as it would be shown in a statement of cash flows using the indirect method.



Answer

	Rs.	Rs.
Cash flows from operating activities		
Profit before taxation	16,000	
Adjustments for:		
Depreciation and amortisation charges	15,000	
Gains on disposal of non-current assets	(5,000)	
	<u>26,000</u>	
Decrease in current assets	1,000	
Increase in trade payables	2,500	
Cash generated from operations	<u>29,500</u>	
Taxation paid (tax on profits)	(4,800)	
Net cash flow from operating activities		<u>24,700</u>

5 CASH FLOWS FROM OPERATING ACTIVITIES: THE DIRECT METHOD

Section overview

- Cash from sales
- Cash paid for materials supplies
- Cash paid for wages and salaries
- Cash paid for other expenses

5.1 Cash from sales

The format for the direct method of presenting a statement of cash flows is as follows:



Illustration:

Statement of cash flows: direct method	Rs.
Cash flows from operating activities	
Cash receipts from customers	348,800
Cash payments to suppliers	(70,000)
Cash payments to employees	(150,000)
Cash paid for other operating expenses	(30,000)
Cash generated from operations	<u>98,800</u>
Taxation paid (tax on profits)	(21,000)
Interest charges paid	(2,500)
Net cash flow from operating activities	<u>75,300</u>

The task is therefore to establish the amounts for cash receipts and cash payments. In an examination, you might be expected to calculate any of these cash flows from figures in the opening and closing statements of financial position, and the statement of comprehensive income.

The cash receipts from sales during a financial period can be calculated as follows:



Illustration:

	Rs.
Trade receivables at the beginning of the year	X
Sales in the year	X
	X
Trade receivables at the end of the year	(X)
Cash from sales during the year	X

A T account could also be used to calculate the cash receipt

Receivables			
Balance b/f	X	Cash (balancing figure)	X
Sales	X	Balance c/f	X
	X		X

5.2 Cash paid for materials supplies

To calculate the amount of cash paid to suppliers, you might need to calculate first the amount of material purchases during the period.



Illustration: Calculation of purchases in the year

	Rs.
Closing inventory at the end of the year	X
Cost of sales	X
	<hr/>
	X
Opening inventory at the beginning of the year	(X)
	<hr/>
Purchases in the year	X
	<hr/>

Having calculated purchases from the cost of sales, the amount of cash payments for purchases may be calculated from purchases and opening and closing trade payables.



Illustration:

	Rs.
Trade payables at the beginning of the year	X
Purchases in the year (as above)	X
	<hr/>
	X
Trade payables at the end of the year	(X)
	<hr/>
Cash paid for materials	X
	<hr/>

A T account could also be used to calculate the cash paid

Payables			
		Balance b/f	X
Cash (balancing figure)	X	Purchases	X
Balance c/f	X		
	<hr/>		<hr/>
	X		X
	<hr/>		<hr/>

Note that if the business had paid for goods in advance at the start or end of the year they would have an opening or closing receivable but this situation would be quite unusual.

5.3 Cash paid for wages and salaries

Cash payments for wages and salaries can be calculated in a similar way.



Illustration:

	Rs.
Accrued wages and salaries at the beginning of the year	X
Wages and salaries expenses in the year	X
	<hr/>
	X
Accrued wages and salaries at the end of the year	(X)
Cash paid for wages and salaries	X
	<hr/>

A T account could also be used to calculate the cash paid

Payables			
		Balance b/f	X
Cash (balancing figure)	X	Purchases	X
Balance c/f	X		
	<hr/>		<hr/>
	X		X

If wages and salaries had been paid in advance the business would have a receivable and the workings would change to the following.



Illustration:

	Rs.
Wages and salaries paid in advance at the beginning of the year	(X)
Wages and salaries expenses in the year	X
	<hr/>
	X
Wages and salaries paid in advance at the end of the year	X
Cash paid for wages and salaries	X
	<hr/>

A T account could also be used to calculate the cash paid

Payables			
Balance b/f	X	Purchases	X
Cash (balancing figure)	X	Balance c/f	X
	<hr/>		<hr/>
	X		X

5.4 Cash paid for other expenses

Other expenses in the statement of comprehensive income usually include depreciation charges, which are not cash flows. Depreciation charges should therefore be excluded from other expenses when calculating cash payments.

Cash payments for other expenses can be calculated as follows.



Illustration:

	Rs.
Payables for other expenses at the beginning of the year	X
Other expenses in the year, excluding depreciation and amortisation	X
	<u>X</u>
Payables for other expenses at the end of the year	<u>(X)</u>
Cash paid for other expenses	<u>X</u>

Payables for other expenses should exclude accrued wages and salaries, accrued interest charges and taxation payable.

**Example:**

The following information has been extracted from the financial statements of Hopper Company for the year ended 31 December 2013.

	Rs.
Sales	1,280,000
Cost of sales	(400,000)
Gross profit	<u>880,000</u>
Wages and salaries	(290,000)
Other expenses (including depreciation Rs. 25,000)	(350,000)
	<u>240,000</u>
Interest charges	(50,000)
Profit before tax	<u>190,000</u>
Tax on profit	(40,000)
Profit after tax	<u><u>150,000</u></u>

Extracts from the statement of financial position:

	At 1 January 2013	At 31 December 2013
	Rs.	Rs.
Trade receivables	233,000	219,000
Inventory	118,000	124,000
Trade payables	102,000	125,000
Accrued wages and salaries	8,000	5,000
Accrued interest charges	30,000	45,000
Tax payable	52,000	43,000

Required

Present the cash flows from operating activities as they would be presented in a statement of cash flows using:

- a) the direct method; and
- b) the indirect method.

**Answer: Direct method**

Statement of cash flows: direct method	Rs.
Cash flows from operating activities	
Cash receipts from customers(W1)	1,294,000
Cash payments to suppliers(W3)	(383,000)
Cash payments to employees(W4)	(293,000)
Cash paid for other operating expenses	(325,000)
Cash generated from operations	<u>293,000</u>
Taxation paid (tax on profits)(W5)	(49,000)
Interest charges paid(W5)	(35,000)
Net cash flow from operating activities	<u>209,000</u>

Workings

(W1) Cash from sales	Rs.
Trade receivables at 1 January 2013	233,000
Sales in the year	1,280,000
	<u>1,513,000</u>
Trade receivables at 31 December 2013	(219,000)
Cash from sales during the year	<u>1,294,000</u>

(W2) Purchases	Rs.
Closing inventory at 31 December 2013	124,000
Cost of sales	400,000
	<u>524,000</u>
Opening inventory at 1 January 2013	(118,000)
Purchases in the year	<u>406,000</u>

(W3) Cash paid for materials supplies	Rs.
Trade payables at 1 January 2013	102,000
Purchases in the year (W2)	406,000
	<u>508,000</u>
Trade payables at 31 December 2013	(125,000)
Cash paid for materials	<u>383,000</u>

**Answer: Direct method (continued)**

	Rs.
(W4) Cash paid for wages and salaries	
Accrued wages and salaries at 1 January 2013	8,000
Wages and salaries expenses in the year	290,000
	<u>298,000</u>
Accrued wages and salaries at 31 December 2013	(5,000)
Cash paid for wages and salaries	<u>293,000</u>

	Tax Rs.	Interest Rs.
(W5) Interest and tax payments		
Liability at the beginning of the year	52,000	30,000
Taxation charge/interest charge for the year	40,000	50,000
	<u>92,000</u>	<u>80,000</u>
Liability at the end of the year	(43,000)	(45,000)
Tax paid/interest paid during the year	<u>49,000</u>	<u>35,000</u>

**Answer: Indirect method**

	Rs.
Statement of cash flows: indirect method	
Cash flows from operating activities	
Profit before taxation	190,000
Adjustments for:	
Depreciation and amortisation charges	25,000
Interest charges in the statement of comprehensive income	50,000
	<u>265,000</u>
Decrease in receivables (233,000 - 219,000)	14,000
Increase in inventories (124,000 - 118,000)	(6,000)
Increase in trade payables	20,000
(125,000 + 5,000) - (102,000 + 8,000)	
Cash generated from operations	<u>293,000</u>
Taxation paid	(49,000)
Interest charges paid	(35,000)
Net cash flow from operating activities	<u>209,000</u>

6 CASH FLOWS FROM INVESTING ACTIVITIES

Section overview

- Cash paid for the purchase of property, plant and equipment
- Cash from disposals of property, plant and equipment
- Cash paid for the purchase of investments and cash received from the sale of investments

6.1 Cash paid for the purchase of property, plant and equipment

This is the second part of a statement of cash flows, after cash flows from operating activities.

The most important items in this part of the statement are cash paid to purchase non-current assets and cash received from the sale or disposal of non-current assets but it also includes interest received and dividends received on investments.

It is useful to remember the following relationship:



Illustration: Movement on non-current assets

	Rs.
Carrying amount at the start of the year	X
Depreciation	(X)
Disposals	(X)
Additions	X
Revaluation	<u>X/(X)</u>
Carrying amount at the end of the year	<u>X</u>

When there are no disposals or revaluations during the year

When there are no disposals or revaluations of non-current assets during the year, purchases of non-current assets (normally assumed to be the amount of cash paid for these purchases) may be calculated as follows:



Illustration:

Using cost:	Rs.
Non-current assets at the end of the year at cost	X
Non-current assets at the beginning of the year at cost	X
	<hr/>
Additions to non-current assets	X
	<hr/>
Alternatively carrying amount (NBV) can be used	Rs.
Non-current assets at the beginning of the year at NBV	X
Non-current assets at the end of the year at NBV	(X)
	<hr/>
	X
Depreciation	X
	<hr/>
Additions to non-current assets	X
	<hr/>



Example: Cash paid for property, plant and equipment

The plant and equipment of PM Company at the beginning and the end of its financial year were as follows:

	At cost	Accumulated depreciation	Net book value
	Rs.	Rs.	Rs.
Beginning of the year	180,000	(30,000)	150,000
End of the year	240,000	(50,000)	190,000

There were no disposals of plant and equipment during the year.

The cash paid for plant and equipment in the year (additions) may be calculated in either of the following ways.

	Rs.		Rs.
At cost at the end of the year	240,000	Carrying amount (NBV) at the end of the year	190,000
At cost at the beginning of the year	180,000	Carrying amount (NBV) at the beginning of the year	150,000
Additions	<hr/> 60,000	Increase in NBV	<hr/> 40,000
		Depreciation charge for the year (50,000 – 30,000)	20,000
		Additions	<hr/> 60,000

Note that in the above example it is assumed that the purchases have been made for cash. This might not be the case. If the purchases are on credit the figure must be adjusted for any amounts outstanding at the year end.


Example: Cash paid for property, plant and equipment

PM company has purchased various items of property, plant and equipment on credit during the year. The total purchased was Rs. 60,000.

The statements of financial position of PM company at the beginning and end of 2013 include the following information:

	2012 (Rs. m)	2013 (Rs. m)
Payables:		
Suppliers of non-current assets	4,000	12,000

The cash paid to buy property, plant and equipment in the year can be calculated as follows:

	Rs. m
Additions	60,000
Less: increase in payables that relate to these items	(8,000)
Cash paid in the year	<u>52,000</u>

This can be thought of as the payment of the Rs. 4,000 owed at the start and a payment of Rs. 48,000 towards this year's purchases.

If the payables had decreased the movement would be added to the additions figure to find the cash outflow.


Example: Cash paid for property, plant and equipment

PM company has purchased various items of property, plant and equipment on credit during the year. The total purchased was Rs. 60,000.

The statements of financial position of PM company at the beginning and end of 2013 include the following information:

	2012 (Rs. m)	2013 (Rs. m)
Payables:		
Suppliers of non-current assets	14,000	4,000

The cash paid to buy property, plant and equipment in the year can be calculated as follows:

	Rs. m
Additions	60,000
Less: increase in payables that relate to these items	10,000
Cash paid in the year	<u>70,000</u>

This can be thought of as the payment of the Rs. 14,000 owed at the start and a payment of Rs. 56,000 towards this year's purchases.

When there are disposals during the year

When there are disposals of non-current assets during the year, the purchases of non-current assets may be calculated as follows:



Illustration: Movement on non-current assets

	Rs.
Assets at cost at the end of the year	X
Assets at cost at the beginning of the year	X
	<hr/>
	X
Disposals during the year: original asset cost	X
	<hr/>
Purchases	X
	<hr/>



Example: Cash paid for property, plant and equipment with disposals

The motor vehicles of PM Company at the beginning and the end of its financial year were as follows:

	At cost	Accumulated depreciation	Carrying amount
	Rs.	Rs.	Rs.
Beginning of the year	150,000	(105,000)	45,000
End of the year	180,000	(88,000)	92,000

During the year a vehicle was disposed of for a gain of Rs. 3,000. The original cost of this asset was Rs. 60,000. Accumulated depreciation on the asset was Rs. 45,000.

The cash paid for plant and machinery in the year (= purchases) may be calculated as follows.

	Rs.
Assets at cost at the end of the year	180,000
Assets at cost at the beginning of the year	150,000
	<hr/>
	30,000
Disposals during the year: original asset cost	60,000
Purchases	<hr/>
	90,000
	<hr/>
Alternatively using carrying amount (NBV):	Rs.
Assets at carrying amount (NBV) at the end of the year	92,000
Assets at carrying amount (NBV) at the beginning of the year	45,000
	<hr/>
	47,000
Disposals during the year (carrying amount): (60,000 - 45,000)	15,000
Depreciation (88,000 - (105,000 - 45,000))	28,000
	<hr/>
Purchases	90,000
	<hr/>

When there are revaluations during the year

When there are revaluations of non-current assets during the year, the purchases of non-current assets should be calculated as follows.



Illustration: Movement on non-current assets

	Rs.
At cost or valuation, at the end of the year	X
At cost or valuation, at the beginning of the year	X
	<u>X</u>
Add: Cost/re-valued amount of assets disposed of in the year	X
Subtract: Any upward asset revaluation during the year (or deduct a downward revaluation)	(X)
	<u>X</u>
Purchases during the year	<u>X</u>



Example:

The statements of financial position of Grand Company at the beginning and end of 2013 include the following information:

Property, plant and equipment	2012	2013
	Rs.	Rs.
At cost/re-valued amount	1,400,000	1,900,000
Accumulated depreciation	350,000	375,000
Carrying value	<u>1,050,000</u>	<u>1,525,000</u>

During the year, some property was re-valued upwards by Rs. 200,000. An item of equipment was disposed of during the year at a profit of Rs. 25,000. This equipment had an original cost of Rs. 260,000 and accumulated depreciation of Rs. 240,000 at the date of disposal.

Depreciation charged in the year was Rs. 265,000.

Purchases of property, plant and equipment during the year were as follows:

	Rs.
At cost/re-valued amount, at the end of the year	1,900,000
At cost/re-valued amount, at the beginning of the year	1,400,000
	<u>500,000</u>
Add: Cost of assets disposed of in the year	260,000
Subtract: Asset revaluation during the year	(200,000)
Purchases during the year	<u>560,000</u>

**Example (continued)**

	Rs.
Alternatively using carrying amount (NBV):	
Assets at carrying amount (NBV) at the end of the year	1,525,000
Assets at carrying amount (NBV) at the beginning of the year	1,050,000
	<u>475,000</u>
Revaluation during year	(200,000)
Carrying amount of assets disposed of in the year (260,000 – 240,000)	20,000
Depreciation charged during the year	265,000
Purchases during the year	<u>560,000</u>

6.2 Cash from disposals of property, plant and equipment

A statement of cash flows should include the net cash received from any disposals of non-current assets during the period.

This might have to be calculated from the gain or loss on disposal and the carrying amount of the asset at the time of its disposal.

**Illustration: Disposal of property, plant and equipment**

	Rs.
At cost (or re-valued amount at the time of disposal)	X
Accumulated depreciation, at the time of disposal	(X)
Net book value/carrying amount at the time of disposal	<u>X</u>
Gain or (loss) on disposal	X
Net disposal value (= assumed cash flow)	<u>X</u>

If there is a gain on disposal, the net cash from the disposal is more than the net book value.

If there is a loss on disposal the net cash from the disposal is less than the net book value.

**Example:**

During an accounting period, an entity disposed of some equipment and made a gain on disposal of Rs. 6,000.

The equipment originally cost Rs. 70,000 and at the time of its disposal, the accumulated depreciation on the equipment was Rs. 56,000.

What was the amount of cash obtained from the disposal of the asset?

Disposal of equipment	Rs.
At cost	70,000
Accumulated depreciation, at the time of disposal	(56,000)
Net book value/carrying amount at the time of disposal	<u>14,000</u>
Gain on disposal	6,000
Net disposal value (assumed cash flow)	<u>20,000</u>

This cash flow would be included in the cash flows from investing activities.

Note that in the above example it is assumed that the cash received for the disposal has been received. This might not be the case. If the disposal was on credit the figure must be adjusted for any amounts outstanding at the year end.

**Practice question****3**

At 1 January 2013, the property, plant and equipment in the statement of financial position of NC Company amounted to Rs. 329,000 at cost or valuation.

At the end of the year, the property, plant and equipment was Rs. 381,000 at cost or valuation.

During the year, a non-current asset that cost Rs. 40,000 (and has not been re-valued) was disposed of at a loss of Rs. 4,000. The accumulated depreciation on this asset at the time of disposal was Rs. 21,000.

Another non-current asset was re-valued upwards during the year from Rs. 67,000 (cost) to Rs. 102,000.

Calculate the following amounts, for inclusion in the cash flows from investing activities section of the company's statement of cash flows for 2013:

- a) Purchases of property, plant and equipment
- b) Proceeds from the sale of non-current assets

6.3 Cash paid for the purchase of investments and cash received from the sale of investments

A statement of cash flows should include the net cash paid to buy investments in the period and the cash received from the sale of investment in the period.

It is useful to remember the following relationship:



Illustration: Movement on investments

	Rs.
Carrying amount at the start of the year	X
Disposals	(X)
Additions	X
Revaluation	<u>X/(X)</u>
Carrying amount at the end of the year	<u>X</u>

The issues to be considered in calculating cash paid for investments or cash received on the sale of investments are very similar to those for the purchase and sale of property, plant and equipment except for the absence of depreciation.



Example: Cash paid for investments

The statements of financial position of Grand Company at the beginning and end of 2013 include the following information:

	2012 (Rs. m)	2013 (Rs. m)
Non-current asset investments	1,000	1,500

Additional information:

The investments were revalued upwards during the year. A revaluation gain of Rs. 150m has been recognised.

Investments sold for Rs. 250m resulted in a profit on the sale (measured as the difference between sale proceeds and carrying amount at the date of sale) of Rs. 50m

The cash paid to buy investments in the period can be calculated as a balancing figure as follows:

	Rs. m
Investments at the start of the year (given)	1,000
Disposal (carrying amount of investments sold = Rs. 250m – Rs. 50m)	(200)
Revaluation gains (given)	<u>150</u>
	950
Additions (as balancing figure):	<u>550</u>
Investments at the end of the year (given)	<u>1,500</u>

7 CASH FLOWS FROM FINANCING ACTIVITIES

Section overview

- Cash from new share issues
- Cash from new loans/cash used to repay loans
- Dividend payments to equity shareholders
- Financing of a sole proprietor or a partnership

7.1 Cash from new share issues

The cash raised from new share issues can be established by comparing the equity share capital and the share premium in the statements of financial position at the beginning and the end of the year.



Illustration:

	Rs.
Share capital + Share premium at the end of the year	X
Share capital + Share premium at the beginning of the year	X
Cash obtained from issuing new shares in the year	X



Example:

The statements of financial position of Company P at 1 January and 31 December included the following items:

	1 January 2013	31 December 2013
	Rs.	Rs.
Equity shares of Rs. 1 each	600,000	750,000
Share premium	800,000	1,100,000

The cash obtained from issuing shares during the year is calculated as follows.

	Rs.
Share capital + Share premium at the end of 2013	1,850,000
Share capital + Share premium at the beginning of 2013	1,400,000
= Cash obtained from issuing new shares in 2013	450,000

7.2 Cash from new loans/cash used to repay loans

Cash from new loans or cash paid to redeem loans in the year can be calculated simply by looking at the difference between the liabilities for loans and bonds at the beginning and the end of the year.

- ❑ An increase in loans or bonds means there has been an inflow of cash.
- ❑ A reduction in loans or bonds means there has been a payment (outflow) of cash.

Remember to add any loans, loan notes or bonds repayable within one year (current liability) to the loans, loan notes or bonds repayable after more than one year (non-current liability) to get the total figure for loans, loan notes or bonds.



Illustration:

	Rs.
Loans at end of year (current and non-current liabilities)	X
Loans at beginning of year (current and non-current liabilities)	X
Cash inflow or outflow	X

Note: The same calculation can be applied to bonds or loan notes that the company might have issued. Bonds and loan notes are long-term debt.



Example:

The statements of financial position of Company Q at 1 January and 31 December included the following items:

	1 January 2013	31 December 2013
	Rs.	Rs.
Loans repayable within 12 months	760,000	400,000
Loans repayable after 12 months	1,400,000	1,650,000

The cash flows relating to loans during the year are calculated as follows.

	Rs.
Loans outstanding at the end of 2013	2,050,000
Loans outstanding at the beginning of 2013	2,160,000
= Net loan repayments during the year (= cash outflow)	110,000

7.3 Dividend payments to equity shareholders

These should be the final dividend payment from the previous year and the interim dividend payment for the current year. The dividend payments during the year are shown in the statement of changes in equity (SOCIE).

You might be expected to calculate dividend payments from figures for retained earnings and the profit after tax for the year.

The equity dividend payments can be calculated as follows:



Illustration:

	Rs.
Retained earnings at the beginning of the year	X
Profit for the year after tax	X
Any other transfer into the account	X
Increase in the retained earnings reserve	<u>X</u>
Retained earnings at the end of the year	(X)
Equity dividend payments	<u>X</u>



Example:

From the following information, calculate the cash flows from investing activities for Company X in 2013.

	Beginning of 2013	End of 2013
	Rs.	Rs.
Share capital (ordinary shares)	400,000	500,000
Share premium	275,000	615,000
Retained earnings	<u>390,000</u>	<u>570,000</u>
	1,065,000	1,685,000
Loans repayable after more than 12 months	600,000	520,000
Loans repayable within 12 months or less	80,000	55,000

The company made a profit of Rs. 420,000 for the year after taxation.

Required

Calculate for 2013, for inclusion in the statement of cash flows:

- the cash from issuing new shares
- the cash flows received or paid for loans
- the payment of dividend to ordinary shareholders.

**Answer****Workings**

Proceeds from new issue of shares	Rs.
Share capital and share premium:	
At the end of the year (500,000 + 615,000)	1,115,000
At the beginning of the year (400,000 + 275,000)	(675,000)
Proceeds from new issue of shares during the year	<u>440,000</u>

Repayment of loans	Rs.
Loans repayable:	
At the end of the year (520,000 + 55,000)	575,000
At the beginning of the year (600,000 + 80,000)	(680,000)
Repayment of loans during the year	<u>105,000</u>

Payment of dividends	Rs.
Retained earnings at the beginning of the year	390,000
Profit after taxation for the year	420,000
	<u>810,000</u>
Retained earnings at the end of the year	(570,000)
Dividends paid during the year	<u>240,000</u>

Cash flows from financing activities can now be presented as follows.

Cash flows from financing activities	Rs.	Rs.
Proceeds from issue of shares	440,000	
Repayment of loans	(105,000)	
Dividends paid to shareholders	(240,000)	
Net cash from financing activities	<u> </u>	<u>95,000</u>

7.4 Financing of a sole proprietor or a partnership

You may face a question asking for the preparation of a statement of cash flows for a sole proprietor or partnership. Such a question might require the calculation of cash flows between the owners and the business. These cash flows would be capital introduced and drawings.

It is useful to remember the following relationship:



Illustration:

	Rs.
Capital at the beginning of the year	X
Profit (loss) for the year after tax	X/(X)
Capital introduced	X
Drawings	(X)
Capital at the end of the year	<u>X</u>

The drawings and capital introduced figures might be provided in the question in which case you simply have to slot the figures into the cash flow statement.

Other questions might need you to identify one or other of these as balancing figure.

8 STATEMENT OF CASH FLOWS – SPECIMEN FORMATS

Section overview

- Direct method
- Indirect method

IAS 7 does not specify formats for the statement of cash flows. However, it includes illustrative statements in an appendix.

The illustrations below are based on the illustrative examples but have been modified to exclude some items not in this syllabus.

8.1 Direct method



Illustration:

	Rs.	Rs.
Cash flows from operating activities		
Cash receipts from customers	X	
Cash paid to suppliers	(X)	
Cash paid employees	(X)	
Cash generated from operations	X	
Interest paid	(X)	
Income taxes paid	(X)	
Net cash from operating activities		X
Cash flows from investing activities		
Purchase of property, plant and equipment	(X)	
Proceeds from sale of equipment	X	
Interest received	X	
Dividends received	X	
Net cash used in investing activities		X
Cash flows from financing activities		
Proceeds from issue of share capital	X	
Proceeds from long-term borrowings	X	
Dividends paid	(X)	
Net cash used in financing activities		X
Net increase in cash and cash equivalents		X
Cash and cash equivalents at beginning of period		X
Cash and cash equivalents at end of period		X

8.2 Indirect method



Illustration:

	Rs.	Rs.
Cash flows from operating activities		
Profit before taxation	X	
Adjustments for:		
Depreciation	X	
Investment income	(X)	
Interest expense	X	
Operating profit before working capital changes	<u>X</u>	
Increase in trade and other receivables	(X)	
Decrease in inventories	X	
Decrease in trade payables	<u>(X)</u>	
Cash generated from operations	X	
Interest paid	(X)	
Income taxes paid	<u>(X)</u>	
Net cash from operating activities		X
Cash flows from investing activities		
Purchase of property, plant and equipment	(X)	
Proceeds from sale of equipment	X	
Interest received	X	
Dividends received	<u>X</u>	
Net cash used in investing activities		X
Cash flows from financing activities		
Proceeds from issue of share capital	X	
Proceeds from long-term borrowings	X	
Dividends paid	<u>(X)</u>	
Net cash used in financing activities		<u>X</u>
Net increase in cash and cash equivalents		X
Cash and cash equivalents at beginning of period		<u>X</u>
Cash and cash equivalents at end of period		<u>X</u>

SOLUTIONS TO PRACTICE QUESTIONS

Solutions

1

- (a) In the adjustments to get from the operating profit to the cash flow from operations, the loss on disposal of Rs. 8,000 should be added.
- (b) Under the heading 'Cash flows from investing activities', the sale price of the vehicle of Rs. 22,000 should be included as a cash inflow.

Workings:

Original cost of vehicle	50,000
Accumulated depreciation at date of disposal	(20,000)
Net book value at the time of disposal	<u>30,000</u>
Loss on disposal	(8,000)
Therefore net sales proceeds	<u>22,000</u>

Solutions

2

	Rs.
Profit before taxation	60,000
Adjustments for:	
Depreciation	25,000
Interest charges	10,000
Gain on disposal of non-current asset	(14,000)
	<u>81,000</u>
Reduction in trade and other receivables	5,000
Increase in inventories	(4,000)
Reduction in trade payables	(6,000)
	<u>76,000</u>
Taxation paid	(17,000)
Interest charges paid	(10,000)
Cash flows from operating activities	<u>49,000</u>

Solutions**3**

Property, plant and equipment purchases	Rs.
At cost or valuation at the end of the year	381,000
At cost or valuation at the beginning of the year	(329,000)
	<hr/> 52,000
Add: Cost of assets disposed of in the year	40,000
Subtract: Asset revaluation during the year (102,000 – 67,000)	(35,000)
Purchases during the year	<hr/> 57,000 <hr/>
 Disposal of equipment	 Rs.
At cost	40,000
Accumulated depreciation, at the time of disposal	(21,000)
Net book value/carrying amount at the time of disposal	<hr/> 19,000
Loss on disposal	(4,000)
Net disposal value (= assumed cash flow)	<hr/> 15,000 <hr/>

Income and expenditure account

Contents

- 1 Not for profit organisations
- 2 Income and expenditure account
- 3 Statement of financial position

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 1 **Prepare financial statements in accordance with specified international pronouncements.**

LO1.4.1: *Income and expenditure account:* Prepare simple income and expenditure account using data and information provided

1 NOT FOR PROFIT ORGANISATIONS

Section overview

- Introduction
- Receipts and payments account

1.1 Introduction

Many organisations do not exist in order to make a profit. Such organisations include:

- Clubs and societies; and
- Charities
- Trusts
- NGOs
- Hospitals

Non-profit making organisations (also called not for profit organisations) have revenue which they raise and costs which must be paid just like other organisations.

Non-profit making organisations prepare an income and expenditure account (I & E account) instead of a statement of comprehensive income. This is similar to a statement of comprehensive income in that it is prepared on the accruals basis but there are differences.

Different terminology is used.

- What a statement of comprehensive income would describe as profit for the period, an income and expenditure account describes as a **surplus of income over expenditure**.
- What a statement of comprehensive income would describe as loss for the period, an income and expenditure account describes this as a **deficit of income over expenditure**.
- In the statement of financial position a company has equity reserves whereas a not for profit organisation has equity fund accounts.
- In the statement of financial position a company would add the profit for the year (deduct a loss) to an equity account called retained profits. A not for profit organisation would add the surplus (deduct a deficit) to an equity account called an accumulated fund (or accumulated surplus of income over expenditure).

Also the sort of organisation that prepares income and expenditure accounts **might** be subject to much less regulation than entities that exist for a profit.

Comment on charities



Some charities are very large organisations and are run very professionally. Such charities may be subject to separate accounting regulation in some jurisdictions and may maintain detailed accounting records to the same standard as those expected of a company.

Charities are only mentioned above for completeness. This chapter proceeds to explain more about income and expenditure account using the circumstances of clubs and societies.

1.2 Receipts and payments account

A clubs or society may not be required to prepare accruals based financial information. They might choose to do so but they may prepare a receipt and payments account instead.

This is simply a summary of cash receipts and payments during the accounting period. The accruals concept is not applied.

All cash receipts are recorded on debit side (receipts side) and all cash payments are recorded on credit side (payments side) of receipts and payments account.



Illustration

Receipts and payments account			
Balance b/d	X	Donation	X
Subscriptions	X	Repairs	X
Functions	X	Telephone	X
Sale of land	X	Extension of club house	X
Bank interest	X	Furniture	X
Bequest	X	Heat and light	X
Sundry income	X	Salary and wages	X
		Sundry expenses	X
		Balance c/d	X
	X		X
Balance b/d			X

A receipt and payment account gives far less information than a set of financial statements based on the accruals concept.

For all practical purposes this is a cash account.

This is not mentioned in the learning outcomes of this syllabus but it is examinable at a lower level. It is mentioned here for completeness.

2 INCOME AND EXPENDITURE ACCOUNT

Section overview

- Format
- Subscriptions account
- Life membership fees
- Donations

2.1 Format

An income and expenditure account is an accruals based statement listing the different types of income of a club followed by the different categories of expenditure of the club.

A club may have several categories of income including:

- Membership fees and subscriptions;
- Life membership fees;
- Donations to the club;
- Investment income;
- Surplus from running a coffee bar or a shop;
- Surplus from running an event;

Note that if a club has a coffee bar or shop or runs an event the “profit” from these is generally calculated separately (in an account known as a trading account) and presented as a line in the income and expenditure account.



Illustration: Coffee bar trading account

	Rs.	Rs.
Income		
Sales		X
Opening inventory	X	
Purchases	X	
	X	
Closing inventory	(X)	
Cost of sales	(X)	(X)
Gross profit (this figure to the face of the income and expenditure account)		X

There are no mandatory formats for such a statement. A typical format is illustrated below.


Illustration: Income and expenditure account for the year ending XX/XX/XX

	Rs.	Rs.
Income		
Subscription income		X
Donations		X
Interest on bank deposit		X
Coffee bar/shop profit		X
Tournament income	X	
Less: Prizes	(X)	
		X
		<u>X</u>
Expenditure		
Club expenses	X	
Rent	X	
Electricity	X	
Depreciation	X	
Repairs	X	
	<u>X</u>	
		X
		<u>X</u>
Surplus (deficit) of income over expenditure		<u>X</u>

2.2 Subscriptions account

At each year end there will usually be some members who have paid their subscriptions in advance and some who are in arrears. These are both included as balances brought down and carried down on a single subscription account. Cash received is credited to this account and the balance on the account is transferred to the income and expenditure account (as income for the year).



Illustration: Subscription account

Subscription account			
	Rs.		Rs.
Balance b/d (members in arrears)	X	Balance b/d (members who have prepaid)	X
Income and expenditure	X	Cash	X
Balance c/d (members who have prepaid)	X	Balance c/d (members in arrears)	X
	X		
Balance b/d (members in arrears)	X	Balance b/d (members who have prepaid)	X



Example: Subscription account

At 31 March 2012 a cricket club had membership subscriptions in arrears amounting to Rs. 48,000 and had received Rs. 12,000 subscriptions in advance.

During the year to 31 March 2013 the club received Rs. 624,000 including 26 memberships for the year to 31 March 2014 at Rs. 1,200 per annum.

At 31 March 2013 16 members owed subscriptions of Rs. 1,200 each.

The transactions would be recorded in the subscriptions ledger account for the year to 31 March 2013 as follows:

Subscriptions			
	Rs.		Rs.
Balance b/d: Members in arrears	48,000	Balance b/d: Advance payments	12,000
		Cash	624,000
Membership fees for the year (to I&E)	576,000		
Balance c/d: Advance payments (26 × 1,200)	31,200	Balance c/d: Members in arrears (16 × 1,200)	19,200
	655,200		655,200
Balance b/d:	19,200	Balance b/d:	31,200

Write off of subscriptions

Questions often include the write off of subscriptions from members who have stopped attending the club.



Illustration: Write off of subscriptions

	Debit	Credit
Income and expenditure account	X	
Subscription account		X



Example: Subscription account

At 31 March 2012 a cricket club had membership subscriptions in arrears amounting to Rs. 48,000 and had received Rs. 12,000 subscriptions in advance.

During the year to 31 March 2013 the club received Rs. 624,000 including 26 memberships for the year to 31 March 2014 at Rs. 1,200 per annum.

At 31 March 2013 16 members owed subscriptions of Rs. 1,200 each.

Half of the members who were in arrears at the end of the previous period still had not paid by 31 March 2013. It was decided to write these amounts off.

The transactions would be recorded in the subscriptions ledger account for the year to 31 March 2013 as follows:

Subscriptions			
	Rs.		Rs.
Balance b/d:		Balance b/d:	
Members in arrears	48,000	Advance payments	12,000
		Cash	624,000
Membership fees for the year (to I&E)	600,000	Bad debts ($\frac{1}{2} \times 48,000$)	24,000
Balance c/d:		Balance c/d:	
Advance payments (26 × 1,200)	31,200	Members in arrears (16 × 1,200)	19,200
	679,200		679,200
Balance b/d:	19,200	Balance b/d:	31,200

2.3 Life membership fees

A club should have an accounting policy for these. Possible policies include:

- Recognition as income when received.
- Recognition as income over a specified period.
- Recognition in an equity reserve (an accumulated fund).

Recognition as income when received



Illustration:

	Debit	Credit
Bank (cash received)	X	
Income and expenditure account		X

Recognition as income over a specified period



Illustration:

	Debit	Credit
On receipt:		
Bank (cash received)	X	
Deferred income (accredit account on the face of the statement of financial position)		X
Each year over the a specified future period:		
Deferred income	X	
Income and expenditure account		X

This treatment recognises the amount received as income over several years.

Recognition in an equity reserve (an accumulated fund)



Illustration:

	Debit	Credit
Bank (cash received)	X	
Life membership fund (an accumulated fund account in equity)		X

This might then be transferred to the accumulated surplus of income over expenditure over a pre-defined period or on the death of the member.

2.4 Donations

A club might receive a donation or bequest.

If the donation has not been made for a specific purpose the club might recognise the donation as income in the period in which it is received.

A club might receive a donation for a particular purpose. For example, a member might donate money for a new cricket square. In this case the money is credited to a fund account set up for the purpose.



Illustration:

	Debit	Credit
Bank (cash received)	X	
Cricket square fund (an accumulated fund account in equity)		X

2.5 Surplus from running an operation

If a club has a coffee bar or shop the “profit” from these is generally calculated separately (in an account known as a trading account).

Any expenses directly related to the operation of a coffee bar or shop would be deducted from the gross profit of the operation and the net profit would be presented on a separate line in the in the income and expenditure account.



Illustration: Coffee bar trading account

	Rs.	Rs.
Income		
Sales		X
Opening inventory	X	
Purchases	X	

	X	
Closing inventory	(X)	

Cost of sales		(X)
Gross profit		X
Coffee shop worker's salary		(X)

Net profit (this figure to the face of the income and expenditure account)		X

2.6 Surplus from running an event

If a club runs an event any surplus (or loss) generally calculated separately and presented as a separate line in the income and expenditure account.



Illustration: Event surplus

	Rs.
Sports day entry fees	X
Cost of prizes	(X)
	<hr/>
Surplus/deficit (this figure to the face of the income and expenditure account)	X
	<hr/>

3 STATEMENT OF FINANCIAL POSITION

Section overview

- Format
- Special funds

3.1 Format

A not for profit organisation may or may not prepare a statement of financial position but if it does so the statement of financial position would be similar to that of a business. The main difference is in the equity section. The equivalent of the capital section of a business is called the accumulated fund.



Example: Statement of financial position of a club

	Rs.
Assets	
Non-current assets	
Club house	X
Current assets	
Subscriptions in arrears	X
Investments	X
Shop inventory	X
Prepayments	X
Cash	X
Total assets	X
Equity and liabilities	
Accumulated fund	
At start of year	X
Surplus / (deficit) for the year	X
At end of year	X
Current liabilities	
Subscriptions in advance	X
Accruals	X
Total accumulated fund and liabilities	X

3.2 Special funds

An organisation might also have other funds in addition to the accumulated fund.

These “special” funds arise in a number of circumstances including:

- ❑ when an organisation receives cash for a designated purpose; or
- ❑ when an organisation sets aside resources for a designated purpose.

The organisation might also set aside assets (say cash) to match to the fund so that they can be used for the specified purpose.



Illustration: Receipt of cash for a specified purpose

	Debit	Credit
Cash	X	
Special fund		X
Allocation of assets to the fund		
Special fund cash	X	
Cash		X

The following journals reflect cash being spent on the specified purpose.



Illustration: Receipt of cash for a specified purpose

	Debit	Credit
Special fund	X	
Cash (or “Special fund cash” if so allocated)		X



Example: Special fund

Ali has been very successful in business.

When he was a young man he very much enjoyed playing cricket and has very fond memories of his days at the village cricket club.

He has donated Rs. 1,000,000 to the club to fund the building of a new club house.

This would be accounted for as follows:

	Debit	Credit
Cash	1,000,000	
Special fund (clubhouse)		1,000,000
Allocation of assets to the fund		
Special fund cash	1,000,000	
Cash		1,000,000

An organisation itself might set aside funds for a particular purpose.



Illustration: Set up fund for a specified purpose

	Debit	Credit
Accumulated fund	X	
Special fund		X
Allocation of assets to the fund		
Special fund cash	X	
Cash		X



Example: Special fund

A social club in a small town has managed to accumulate a significant balance on its accumulated fund over the years.

Its members have decided that the club should establish a fund to contribute to the school fees of children of high promise from the town. Parents of such children would apply to the club for a grant of Rs.50,000.

Rs. 1,500,000 is to be set aside for this purpose.

This would be accounted for as follows:

	Debit	Credit
Setting up the fund		
Accumulated fund	1,500,000	
Special fund (Education fund)		1,500,000
Allocation of assets to the fund		
Special fund cash	1,000,000	
Cash		1,000,000
On the award of a grant.		
Special fund (Education fund)	50,000	
Special fund cash		50,000

**Practice question****1**

The following were the assets and liabilities of the Nawabshar Youth Movement at 30 April 2014.

	Rs. 000
Fixtures and fittings (net)	16,340
Inventory of refreshment (coffee bar)	4,460
Land	51,600
Subscription received in advance	4,900
Payables for drinks supplied (coffee bar)	6,780
Cash at bank	7,466

The accountant's receipts and payments account for the year to 30 April 2015 shows the following:

	Rs. 000
Receipts	
Donations received	500
Rent of hall	5,600
Members' subscription	24,000
Sale of brochure:	1,740
Sale of dance tickets	3,400
Sale of refreshments (coffee bar)	10,200
Payments	
Repairs and maintenance	3,218
Salaries and wages	6,309
Gifts and donations	600
Dance expenses	950
Refreshment supplies (coffee bar)	19,415
Sundry expenses	10,000

Further information:

- (i) Wages of Rs. 556,000 were due but unpaid at the year-end.
- (ii) Inventories of drinks at 30 April 2015 were Rs. 14,210,000
- (iii) Provide for depreciation on fixtures and fittings at Rs. 1,900,000
- (iv) Subscription due but not paid at 30 April 2015 was Rs. 1,900,000

Required:

Prepare the club's income and expenditure account for the year ended 30 April 2015 and the statement of financial position as at that date.

**Practice question****2**

The statement of financial position of Peshawar Business Club as at 31 December 2013 is shown as follows:

	Cost	Accumulated depreciation	Carrying amount
	Rs.000	Rs.000	Rs.000
Furniture and Fittings	40,000	10,000	30,000
Games Equipment	20,000	7,200	12,800
Motor van	30,000	10,000	20,000
	<u>90,000</u>	<u>27,200</u>	<u>62,800</u>

Current Assets:

Cash at bank and at hand	<u>9,200</u>
	<u>72,000</u>

Financed by:

Accumulated funds	<u>72,000</u>
-------------------	---------------

The following transactions took place during the period 1 January 2014 to 31 December 2014:

Receipts	Rs. 000
Subscriptions (10,000 members @ N1,600 each)	16,000
Donations	1,600
Sale of tickets for annual dinner	10,800
Payments	
Electricity	4,000
Expenses for annual dinner	6,200
New games equipment	3,200
Cleaners' wages	2,080
Repairs and renewal	1,660
Motor van repairs	2,520

Further information:

- (i) An electricity bill of Rs. 900,000 was owed at 31 December 2014.
- (ii) Depreciation should be calculated at 10% of cost of the assets.

Required:

- (a) Prepare the receipts and payments account..
- (b) Prepare the income and expenditure account and statement of financial position as at 31 December 2014.

SOLUTIONS TO PRACTICE QUESTIONS

Solution	1
Income and expenditure account	
Income:	Rs.000
Subscriptions (W1)	30,800
Donations	500
Rent of hall	5,600
Sales of brochure	1,740
Sales of dance tickets	3,400
Net income from coffee bar (W4)	7,315
	49,355
Less expenses	
Repairs and Maintenance	3,218
Salaries and Wages (W2)	6,865
Gifts and Donations	600
Dance expenses	950
Sundry expenses	10,000
Depreciation of fixtures and fittings	1,900
	(23,533)
Net surplus	25,822
Statement of financial position as at 30 April 2015	
Non-current assets	Rs.000
Land	51,600
Fixtures and Fittings	16,340
Depreciation	(1,900)
	14,440
	66,040
Current Assets:	
Inventory of drinks	14,210
Subscriptions unpaid	1,900
Cash and Bank Balance	12,414
	94,564
Financed By:	
Accumulated Fund (W5)	68,186
Surplus of income over expenditure	25,822
	94,008
Current Liabilities : Wages accrued	556
	94,564

Solution (continued) - Workings		1
W1	Subscriptions account	
	Rs. 000	Rs. 000
		Balance b/d
		4,900
Subscriptions for the period	30,800	Bank
		24,000
		Balance c/d
	30,800	1,900
		<u>30,800</u>
W2	Salaries and wages	
	Rs. 000	Rs. 000
Bank	6,309	Expenditure
		6,865
Balance c/d	556	
	<u>6,865</u>	<u>6,865</u>
W3	Payables	
	Rs. 000	Rs. 000
Bank	19,415	Balance b/d
		6,780
		Expenditure
	<u>19,415</u>	12,635
		<u>19,415</u>
W4	Coffee bar	
Sales		10,200
Opening inventory		4,460
Purchases (W3)		12,635
Closing inventory		(14,210)
		(2,885)
Profit (gross)		<u>7,315</u>
W5	Accumulated fund at start of the year	
	Assets:	
Fixtures and Fittings		16,340
Inventory of refreshments		4,460
Land		51,600
Cash and Bank Balances		7,466
		79,866
	Liabilities:	
Subscription received in Advance		4,900
Payables for drinks supplied		6,780
		(11,680)
Accumulated fund		<u>68,186</u>

Solution		2	
(a) Receipts and payments			
	Rs. 000		Rs. 000
Balance b/d	9,200	Electricity	4,000
Subscription	16,000	Expenses for annual dinner	6,200
Donations	1,600	New games equipment	3,200
Sale of Tickets for annual dinner	10,800	Cleaner's wages	2,080
		Repairs and renewals	1,660
		Motor van repairs	2,520
		Balance c/d	17,940
	37,600		37,600
Income and expenditure account			
Income:		Rs.000	
Subscriptions (W1)		16,000	
Donations		1,600	
Sales of dance tickets		10,800	
		28,400	
Less expenses			
Electricity (4,000,000 + 900,000)		4,900	
Annual expenses		6,200	
Cleaner's wages		2,080	
Repairs and renewals		1,660	
Motor van repairs		2,520	
Depreciation (W)		9,320	
		(26,680)	
Net surplus		1,720	

Solution (continued)**2****Statement of financial position as at 30 April 2015****Non-current assets**

	Cost	Accumulated depreciation	Carrying amount
	Rs.000	Rs.000	Rs.000
Furniture and Fittings	40,000	14,000	26,000
Games and Equipment	23,200	9,520	13,680
Motor Van	30,000	13,000	17,000
	<u>93,200</u>	<u>36,520</u>	56,680

Current Assets:

Cash and Bank Balance			17,940
			<u>74,620</u>

Financed By:

Accumulated Fund (W5)			72,000
Surplus of income over expenditure			1,720
			<u>73,720</u>
Current Liabilities : Electricity accrual			900
			<u>74,620</u>

Working: Depreciation

		Rs.000
Furniture and Fittings	0.1 @ 40,000,000 = 4,000,000	4,000
Game Equipment	(20,000,000 + 3,200,000) x 0.1	2,320
Motor Van	30,000,000 @ 0.1	3,000
		<u>9,320</u>

Preparation of accounts from incomplete records

Contents

- 1 The nature of incomplete records
- 2 Techniques for incomplete records

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 1 Prepare financial statements in accordance with specified international pronouncements.

LO1.5.1: *Preparation of accounts from incomplete records:* Understand situations that might necessitate the preparation of accounts from incomplete records (stock or assets destroyed, cash misappropriation or lost, accounting record destroyed etc.)

LO1.5.2: *Preparation of accounts from incomplete records:* Understand and apply the following techniques used in incomplete record situations: use of the accounting equation; use of opening and closing balances of ledger accounts; use of a cash and / or bank summary; and use of mark-up on cost and gross and net profit percentage

1 THE NATURE OF INCOMPLETE RECORDS

Section overview

- The meaning of incomplete records
- Dealing with incomplete records

1.1 The meaning of incomplete records

Incomplete records, as the term suggests, are accounting records where information is missing.

Problems of incomplete records may arise with small businesses where the owner of the business has not kept up-to-date accounting records or does not have a double entry book-keeping system. He might simply keep invoices or receipts for expenses and copies of invoices to customers. In addition, details of bank transactions can be obtained from a bank statement or other banking records.

The task of the accountant is to use these invoices, receipts and banking records, together with other information obtained from the business owner, to prepare financial statements for the year (and in particular a statement of comprehensive income, which provides a basis for calculating the taxable income of the business owner from his or her business).

Other circumstances that cause problems include loss of records because of some kind of disaster, for example a fire in the office.

Another scenario is where records have not been maintained because a dishonest employee has stolen cash or inventory.

Whatever the cause of the problem the accountant's task involves piecing together information that is available in order to produce a set of financial statements or to calculate missing figures.

1.2 Dealing with incomplete records

Questions on incomplete records are a good test of knowledge and understanding of book-keeping and accounts. The task is often to identify the missing figures that the incomplete records do not provide.

Possible approaches to establishing missing numbers include:

- ❑ establishing the value of assets and liabilities to calculate the business capital, particularly opening capital at the start of the financial period
- ❑ using memorandum control accounts, for receivables or payables, to calculate the sales or purchases for the period
- ❑ using a memorandum account for bank and cash transactions, to establish a missing figure for cash income or cash payments, such as a missing figure for cash taken from the business by the owner as drawings
- ❑ using cost structures (gross profit percentage or mark-up) to establish a cost of sales, or a missing figure such as the value of inventory stolen or lost in a fire.

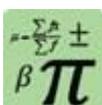
2 TECHNIQUES FOR INCOMPLETE RECORDS

Section overview

- The accounting equation
- Memorandum control accounts
- Memorandum cash and bank account
- Cost structures
- Missing inventory figure

2.1 The accounting equation

The accounting equation is:



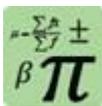
Formula: Accounting equation

$$\begin{array}{rccccccccc} \text{Assets} & = & \text{Liabilities} & + & \text{Equity} & \text{or} & \text{Assets} & - & \text{Liabilities} & = & \text{Equity} \\ A & = & L & + & E & & A & - & L & = & E \end{array}$$

Net assets

The accounting equation is an equation. Therefore changes in one side are matched by changes in the other side.

Profit or loss for a period can be calculated from the difference between the opening and closing net assets after adjusting for any drawings during the period.



Formula:

$$\text{Increase in net assets} = \text{Profit} + \text{capital introduced} - \text{drawings}$$

The profit figure can be calculated as follows:



Illustration:

Closing assets – liabilities	Rs. X
Opening assets – liabilities	X
Increase/(decrease) in net assets in the period	X
Add drawings	X
Subtract new capital introduced by the owner(s)	(X)
Balance = profit /(loss) for the year	X

**Example:**

At 1 January 2013, the business of Tom Canute had assets of Rs. 214,000 and liabilities of Rs. 132,000.

At 31 December 2013, the business had assets of Rs. 281,000 and liabilities of Rs. 166,000.

Tom took Rs. 25,000 in cash and Rs. 3,000 in goods out of the business during the year for his personal use. He did not introduce any new capital.

Required

Calculate the profit of the business in the year to 31 December 2013.

**Answer**

	Rs.	Rs.
Assets at 31 December 2013		281,000
Liabilities at 31 December 2013		(166,000)
Net assets at 31 December 2013		<u>115,000</u>
Assets at 1 January 2013	214,000	
Liabilities at 1 January 2013	<u>(132,000)</u>	
Net assets at 1 January 2013		<u>(82,000)</u>
Increase in net assets during the year		33,000
Add: Drawings (25,000 + 3,000)		<u>28,000</u>
Balance = Profit /(loss) for the year		<u>61,000</u>

Alternatively the profit figure could be calculated using the equation:

$$\begin{aligned} \text{Increase in net assets} &= \text{Profit} + \text{Capital introduced} - \text{Drawings} \\ \text{Rs. } 33,000 &= \text{Profit} + 0 - \text{Rs. } 28,000 \\ \text{Profit} &= \text{Rs. } 61,000 \end{aligned}$$

**Practice question****1**

The accountant for a sole trader has established that the total assets of the business at 31 December Year 4 were Rs. 376,000 and total liabilities were Rs. 108,000.

Checking the previous year's financial statements, he was able to establish that at 31 December Year 3 total assets were Rs. 314,000 and total liabilities were Rs. 87,000.

During Year 4 the owner has taken out drawings of Rs. 55,000.

In December Year 4 the owner had been obliged to input additional capital of Rs. 25,000.

What was the profit of the business for the year to 31 December Year 4?

Identifying missing balances

The approach can also be used to identify a missing balance at the end of a period.



Example: Missing balance

At the start of the year a business had opening capital of Rs. 350,000.

Profit for the year was Rs. 200,000 and the owner had taken Rs. 120,000 as drawings. No capital was introduced in the period.

At the end of the year the company cashier disappeared with an amount of cash.

The owner was able to identify the following balances at the year end:

	Rs.
Property, plant and equipment	95,000
Inventory	85,000
Receivables	65,000
Liabilities	(55,000)

The missing cash balance can be calculated as follows:

	Rs.
Step 1: Work out what closing net assets should be:	
Capital (net assets) at the start	350,000
Profit for the year	200,000
Less: Drawings	(120,000)
Capital (net assets) at the end should be:	430,000

	Rs.
Step 2: Work out what closing net assets are:	
Property, plant and equipment	95,000
Inventory	85,000
Receivables	65,000
Liabilities	(55,000)
	190,000
Step 3: Identify the missing amount:	240,000

The cashier has stolen cash in the amount of Rs. 240,000.

Calculation of opening capital

It might be necessary to establish the opening capital of a sole trader. This can be done simply by obtaining figures for the assets and liabilities of the business at the beginning of the financial period.

Opening capital is the difference between total assets and total liabilities. (Non-current assets for this purpose are measured at their carrying amount, i.e. net book value.)



Example:

A sole trader does not keep any accounting records, and you have been asked to prepare a statement of comprehensive income and statement of financial position for the financial year just ended. To do this, you need to establish the opening capital of the business at the beginning of the year.

You obtain the following information about assets and liabilities at the beginning of the year:

	Rs.
Motor van (balance sheet valuation)	1,600
Bank overdraft	560
Cash in hand	50
Receivables	850
Trade payables	370
Payables for other expenses	90
Inventory	410

Required

Calculate the capital of the business as at the beginning of the year.



Answer

	Rs.	Rs.
Assets		
Motor van (balance sheet valuation)		1,600
Inventory		410
Receivables		850
Cash in hand		50
Total assets		<u>2,910</u>
Liabilities		
Bank overdraft	560	
Trade payables	370	
Payables for other expenses	90	
Total liabilities	<u>1,020</u>	
Net assets = Capital		<u>1,890</u>

**Practice question****2**

A sole trader has not maintained full records but is able to supply the following information for two years ended 31 December:

	2014	2013
	Rs. 000	Rs. 000
Accrued expenses	10	-
Account receivables	196	130
Prepaid expenses	-	16
Bank balances	(40)	200
Investment	500	-
Cash balance	366	106
Accounts payable	74	90
Property	1,500	1,500
Delivery van	260	260
Inventories	190	74
Loan from bank	300	300

Further information:

- (i) An allowance for doubtful debts should be established on 31 December 2014 in the amount of Rs. 3,000.
- (ii) Depreciation is to be provided on the carrying amounts as follows:

Property	5%
Delivery van	10%
- (iii) Additional capital of Rs. 250,000 was introduced into the business during the year.
- (iv) The owner withdrew a total sum of Rs. 20,000 during the year.

Required:

- (a) Calculate the capital at the start of the year by preparing a statement of net assets at that date.
- (b) Prepare a statement of net assets at the end of the year.
- (c) Calculate the profit for the year.

2.2 Memorandum control accounts

A memorandum account is an account that is not a part of a proper ledger accounting system. When there are incomplete records, a memorandum account can be used to calculate a 'missing' figure, such as a figure for sales or purchases and expenses in the period.

Calculating a missing figure for sales

The records of a sole trader might be incomplete because the trader does not keep any record of sales in the period. However, it might be possible to obtain the following figures:

- receivables at the beginning of the year (from last year's balance sheet);
- receivables at the end of the year, from copies of unpaid sales invoices;
- money banked during the year (assumed to be money from customers for sales);
- any bad debts written off.

Where a business makes some sales for cash, there might also be a figure for cash sales where the money has not been banked. The amount of these cash sales might be calculated from the sum of:

- the increase in cash in hand at the end of the year; plus
- any expenses paid in cash, for which receipts are available.

**Example:**

An accountant is looking through the records of a sole trader who does not have a bookkeeping system. He has established the following information.

	Rs.
Receivables at the beginning of the year	650
Receivables at the end of the year	720
Bad debt written off during the year	800
Money paid into the business bank account	58,600
Cash sales where the money was not banked	300

The sales for the year can be calculated as the balancing figure in a receivables memorandum account.

Receivables memorandum account

	Rs.		Rs.
Opening balance	650	Money banked	58,600
Sales	59,770	Cash sales, money not banked	300
(= balancing figure, 60,420 - 650)		Bad debt written off	800
		Closing balance	720
	<u>60,420</u>		<u>60,420</u>

The same calculation could be presented in a vertical format, as follows:

	Rs.
Receivables at the beginning of the year	650
Receivables at the end of the year	720
Increase/(decrease) in receivables	70
Money paid into the business bank account	58,600
Cash sales where the money was not banked	300
Bad debt written off during the year	800
Sales for the year	<u>59,770</u>

**Practice question****3**

Calculate sales for the period from the following information.

	Rs.
Receivables at the start of the period	2,400
Receivables at the end of the period	1,800
Cash banked during the period	12,500
Bad debt written off	200

Calculating a missing figure for purchase

A similar approach can be taken using knowledge of the payables control account.



Example:

An accountant is looking through the records of a sole trader who does not have a book-keeping system. He has established the following information.

	Rs.
Payables at the beginning of the year	1,200
Payables at the end of the year	1,800
Money paid out of the business bank account to suppliers	18,700

The purchases for the year can be calculated as the balancing figure in a payables memorandum account.

Payables memorandum account

	Rs.		Rs.
Cash paid	18,700	Opening balance	1,200
Closing balance	1,800	Purchases (balancing figure)	19,300
	20,500		20,500

The same calculation could be presented in a vertical format, as follows:

	Rs.
Payables at the beginning of the year	1,200
Payables at the end of the year	1,800
Increase/(decrease) in payables	600
Money paid out of the business bank account	18,700
Purchases for the year	19,300



Practice question

4

Calculate purchases for the period from the following information.

	Rs.
Payables at the start of the period	1,400
Payables at the end of the period	1,900
Cash paid to suppliers during the period	11,300

2.3 Memorandum cash and bank account

A memorandum account may also be used to record transactions in cash (notes and coins) and through the bank account, in order to establish a missing figure for a cash payment or possibly a cash receipt.

You might be given figures for:

- cash in hand and in the bank account at the beginning of the year;
- cash in hand and in the bank account at the end of the year;
- cash receipts (cash, cheques and other forms of receiving money);
- payments during the period for purchases, salaries and other cash expenses.

If there is a missing figure for a cash payment, this should emerge as a balancing figure.

Note: Cash in hand consists of banknotes and coins. Often, it is just petty cash. However, some businesses hold a large amount of cash in hand because they sell goods for cash; for example, retail stores may hold fairly large quantities of cash in hand.



Example:

An accountant is trying to prepare the financial statements of a sole trader from incomplete records.

A problem is that the owner of the business admits to having taken cash from the business, but he has not kept a record of how much he has taken.

The accountant has established the following information:

	Rs.
Cash in hand at the beginning of the year	200
Bank balance at the beginning of the year	2,300
Cash in hand at the end of the year	500
Bank balance at the end of the year	3,500
Receipts	42,800
Payments to employees	12,800
Payments to suppliers	17,100
Payments of interest/bank charges	400

Required

From this information, calculate the cash drawings by the owner during the year.

**Answer**

The drawings for the year can be calculated as the balancing figure in a cash and bank memorandum account.

Cash and bank memorandum account

	Rs.		Rs.
Opening balance, cash in hand	200	Payments to suppliers	17,100
Opening balance, bank	2,300	Payments to employees	12,800
Receipts	42,800	Payments of interest/bank charges	400
		Drawings (= balancing figure)	11,000
		Closing balance, cash in hand	500
		Closing balance, bank	3,500
	45,300		45,300

The same calculation could be presented in a vertical format, as follows:

	Rs.	Rs.
Cash in hand and bank at the beginning of the year		2,500
Receipts during the year		42,800
		45,300
Payments to suppliers	17,100	
Payments to employees	12,800	
Payments for interest/bank changes	400	
Total payments recorded		(30,300)
		15,000
Cash in hand and bank at the end of the year		(4,000)
Difference = missing figure = drawings		11,000

**Practice question****5**

Calculate drawings for the period from the following information.

	Rs.
Cash in hand at the beginning of the year	100
Bank balance at the beginning of the year	2,400
Cash in hand at the end of the year	150
Bank balance at the end of the year	5,200
Receipts	51,700
Payments to employees	3,400
Payments to suppliers	38,200

2.4 Cost structures

Missing figures can sometimes be estimated by using cost structures which describe the relationship that exists between sales, cost of sales and gross profit.

The relationship between revenue and cost of sales can be expressed as a percentage.

There are two ways of doing this:

- ❑ Gross profit is expressed as a percentage of cost of sales – this is known as mark-up; or
- ❑ Gross profit is expressed as a percentage of sales – this is known as profit margin.



Example: Cost structures

	Rs.	Mark-up	Profit margin
Revenue	100,000	125%	100%
Cost of sales	(80,000)	100%	80%
Gross profit	20,000	25%	20%



Example:

A sole trader does not keep a record of sales. However, she does keep a record of purchases. The accountant has established that the gross profit margin is 20%, and that:

- a) opening inventory was Rs. 700 at the beginning of the year
- b) closing inventory is Rs. 1,200 at the end of the year
- c) purchases during the year were Rs. 23,500.

Sales for the year can be calculated by first calculating the cost of sales figure and then adding the mark up to it.

20% (= gross profit/sales), the mark-up on cost is 25% of cost (= 20/(100 - 20)).

	Rs.
Opening inventory	700
Purchases	23,500
	24,200
Closing inventory	(1,200)
Cost of sales	23,000
Gross profit (25% of cost)	5,750
Sales	28,750

**Practice question****6**

A business operates on the basis of a mark-up on cost of 40%.

Calculate the sales figure for the year from the following information:

	Rs.
Opening inventory	3,100
Closing inventory	4,000
Purchases	42,100

**Practice question****7**

Complete the following table.

	Rs.	Rs.	Rs.	Rs.
Opening inventory	1,000	2,000	1,000	?
Closing inventory	(1,200)	(1,500)	(500)	(2,000)
Purchases	5,000	8,700	?	15,000
Sales	8,000	15,000	?	20,000
Cost of sales	?	?	?	?
Gross profit	?	?	?	5,000
GP as a % of sales	?	?	20%	?
GP as a % of cost	?	?	?	33.3%

More than one cost structure

A question might explain that a business has more than one cost structure.

You have to work carefully through the information to establish missing numbers.



Example: Multiple cost structures

A company has sales of Rs. 1,000.

The company sells three types of good.

60% of sales are of type A which is sold at a mark-up of 20%.

Type B goods are sold at a margin of 30%. The cost of type B sold in the year was Rs. 154.

Total gross profit for the year was Rs. 184.

Prepare sales, cost of sales and gross profit workings for each product and in total for the business and show the margin for type C goods.

Step 1: Set up a table and enter the known facts

	Type A	%	Type B	%	Type C	%	Total
Sales	600			100			1,000
Cost of sales		100	154				
Gross profit		20		30			184

Step 2: Fill in the easy figures

	Type A	%	Type B	%	Type C	%	Total
Sales	600	120		100			1,000
Cost of sales		100	154	70			816
Gross profit		20		30			184

Step 3: Apply the cost structures to calculate cost of sales and gross profits

	Type A	%	Type B	%	Type C	%	Total
Sales	600	120	220	100			1,000
Cost of sales	500	100	154	70			816
Gross profit	100	20	66	30			184

Step 4: Complete the table

	Type A	%	Type B	%	Type C	%	Total
Sales	600	120	220	100	180	100	1,000
Cost of sales	500	100	154	70	162	90	816
Gross profit	100	20	66	30	18	10	184

2.5 Missing inventory figure

The gross profit margin (or mark-up) can also be used to establish the value of inventory that is missing or lost, for example due to theft or a fire. In these situations, you might know the value of sales in the period, purchases during the period and opening and closing inventory.

By calculating the cost of sales from sales and the gross profit margin, it should be possible to establish the value of missing inventory that is unaccounted for, as a balancing figure.



Example:

A sole trader operates his business from a warehouse, which has been damaged by a fire, which occurred at the end of the financial year. After the fire, the remaining inventory that is undamaged amounts to Rs. 2,000 (cost).

The accountant establishes the following information:

- Inventory at the beginning of the year was Rs. 16,000
- Purchases during the year were Rs. 115,000
- Sales during the year were Rs. 140,000
- The trader sells his goods at a mark-up of 25% of cost.

Required

Calculate the cost of the inventory lost in the fire.



Answer

Gross profit = 25% of cost.

As a proportion of sales, gross profit = $(25 / (25 + 100)) = 0.20$ or 20%.

Sales = Rs. 140,000.

Therefore gross profit = $20\% \times \text{Rs. } 140,000 = \text{Rs. } 28,000$

Cost of sales = $80\% \times \text{Rs. } 140,000 = \text{Rs. } 112,000$.

	Rs.
Opening inventory	16,000
Purchases	115,000
	<hr/>
	131,000
Cost of sales	(112,000)
	<hr/>
Closing inventory should be	19,000
Actual closing inventory	(2,000)
	<hr/>
Balancing figure = inventory lost in the fire	17,000

**Practice question****8**

A business operates on the basis of a mark-up on cost of 40%.

Calculate the closing inventory from the following information:

	Rs.
Opening inventory	5,000
Purchases	71,200
Sales	98,000

**Practice question****9**

A fire on 31 March destroyed some of the inventory of a company, and its inventory records were also lost. The following information is available.

The company makes a standard gross profit of 30% on its sales.

	Rs.
Inventory at 1 March	127,000
Purchases for March	253,000
Sales for March	351,000
Inventory in good condition at 31 March	76,000

What was the cost of the inventory lost in the fire?

**Practice question****10**

Rashid owns a shop which sells telephone recharge cards, making a gross profit of 25% on cost of sales. He does not keep a cash book.

On 1 January 2014, the statement of financial position of his business was as follows:

	Rs. 000
Net non-current assets	200.0
Current assets:	
Inventory	100.0
Cash in bank	30.0
Cash in till	2.0
	332.0
Financed by:	
Capital	320.0
Trade payables	12.0
	332.0

The bank statements for the year show the following:

Receipts	Rs. 000
Banking of receipts	417.5
Payments	
Trade payables	360.0
Sundry expenses	56.0
Drawings	44.0

Further information:

- (i) There were no credit sales.
(ii) The following payments were also made in cash out of the till.

	Rs.
Trade payables	8,000
Sundry expenses	15,000
Drawings	37,000

- (iii) At 31 December 2014, the business had cash in the till of Rs. 4,500 and trade payables of Rs.14,000. The cash balance in the bank was not known and the value of closing inventory has not yet been calculated. There were no accruals or prepayments. No further non-current assets were purchased during the year. The depreciation charged for the year was Rs. 9,000.

Required:

Prepare the statement of profit or loss for the year ended 31 December 2014 and the statement of financial position as at that date.

SOLUTIONS TO PRACTICE QUESTIONS

Solution	1
	Rs.
Net assets at 31 December (376,000 – 108,000)	268,000
Net assets at 1 January (314,000 – 87,000)	<u>(227,000)</u>
Increase in net assets	41,000
Drawings	55,000
New capital introduced in the year	<u>(25,000)</u>
Profit for the year	<u>71,000</u>

Solution	2
(a) Net assets (capital) at the start of the year	
Assets:	Rs.000
Property	1,500
Delivery van	260
Inventories	74
Account receivable	130
Pre-paid expenses	16
Bank balance	200
Cash balance	106
	2,286
Liabilities:	
Bank loan	300
Payables	90
	<u>(390)</u>
Net assets (capital)	<u>1,896</u>

Solution (continued)**2****(b) Net assets (capital) at the end of the year**

	Rs.000
Assets:	
Property	1,425
Delivery van	234
Investment	500
Inventories	190
Account receivable	193
Cash balance	366
	2,908
Liabilities:	
Bank loan	300
Bank overdraft	40
Payables	74
Accrued expenses	10
	(424)
Net assets (capital)	2,484

(c) Profit for the year

	Rs.000
Net assets (capital) at the year-end	2,484
Net assets (capital) at the start of the year	(1,896)
	588
Increase in net assets	588
Add back drawings	20
Deduct capital introduced	(250)
Profit for the year	358

Solution**3****Receivables memorandum account**

	Rs.		Rs.
Opening balance	2,400	Money banked	12,500
Sales (bal fig)	12,100	Bad debt written off	200
		Closing balance	1,800
	14,500		14,500

Solution		4	
Payables memorandum account			
	Rs.		Rs.
Cash paid	11,300	Opening balance	1,400
Closing balance	1,900	Purchases (bal fig)	11,800
	13,200		13,200

Solution		5	
Cash and bank memorandum account			
	Rs.		Rs.
Opening balance, cash in hand	100	Payments to suppliers	38,200
Opening balance, bank	2,400	Payments to employees	3,400
Receipts	51,700	Drawings (= balancing figure)	7,250
	54,200	Closing balance, cash in hand	150
		Closing balance, bank	5,200
			54,200

Solution		6
Cost of sales		Rs.
Opening inventory		3,100
Purchases		42,100
Less: closing inventory		(4,000)
		41,200
Mark-up at 40%		16,480
Sales (41,200 × 140%)		57,680

Solution		7			
	Rs.	Rs.	Rs.	Rs.	
Sales	8,000	15,000	?	20,000	
Opening inventory	1,000	2,000	1,000	2,000	
Purchases	5,000	8,700	7,500	15,000	
Closing inventory	6,000	10,700	8,500	17,000	
Cost of sales	(1,200)	(1,500)	(500)	(2,000)	
Gross profit	(4,800)	(9,200)	(8,000)	(15,000)	
Gross profit	3,200	5,800	2,000	5,000	
GP as a % of sales	40%	38.7%	20%	25%	
GP as a % of cost	66.7%	63%	25%	33.3%	

Solution		8	
	Rs.	%	
Sales	98,000	140	
Cost of sales			
Opening inventory	5,000		
Purchases	71,200		
Less: closing inventory (balancing figure)	(6,200)		
	<u>70,000</u>	100	

Working:
 Cost of sales = $\frac{100}{140} \times \text{Sales} \Rightarrow \frac{100}{140} \times 98,000 = 70,000$

Solution		9
	Rs.	
Inventory at 1 March	127,000	
Purchases for March	253,000	
	<u>380,000</u>	
Closing inventory	(76,000)	
Cost of sales + cost of lost inventory	<u>304,000</u>	
Cost of sales (Rs. 351,000 × 70%)	(245,700)	
Inventory lost in the fire	<u>58,300</u>	

Solution**10****Statement of profit or loss account for the year ended 31 December 2014**

	Rs.000
Sales	480.0
Cost of sales	
Opening inventory	100.0
Purchases	370.0
Closing inventory	470.0
	(86.0)
	(384.0)
Gross profit	96.0
Less expenses	
Sundry expenses (Rs. 15,000 + Rs. 56,000)	71.0
Depreciation	9.0
	(80.0)
Net profit	16.0

Statement of financial position as at December 2014

	Rs.000
Non-current assets (Rs. 200,000 – Rs. 9,000)	191.0
Current Assets:	
Inventory	86.0
Cash (W1)	4.5
	90.5
	281.5
Financed By:	
Capital at start of the year	320.0
Profit for the year	16.0
	336.0
Less: Drawings	(81.0)
Capital at end of the year	255.0
Current Liabilities :	
Payables (W3)	14.0
Bank overdraft (W1)	12.5
	26.5
	281.5

Solution (continued) - Workings

10

W1	Cash book			
	Cash Rs. 000	Bank Rs. 000	Cash Rs. 000	Bank Rs. 000
Balance b/d	2.0	30.0		
Receipts	–	417.5	Banking	417.5
Sales (cash) (W2)	480.0		Payables	8.0
Balance c/d	–	12.5	Expenses	15.0
			Drawings	37.0
			Balance c/d	4.5
	<u>482.0</u>	<u>460.0</u>		<u>482.0</u>
				<u>460.0</u>

W2	Sales (proof)	Rs. 000
	Receipts banked	417.5
	Add:	
	Payments out of till	60.0
	Closing cash balance	4.5
		<u>482.0</u>
	Less: Opening cash balance	(2.0)
		<u>480.0</u>

W3	Payables		
	Rs. 000	Rs. 000	
Bank	360	Balance b/d	12
Balance c/d	8	Purchase (balance)	370
Balance c/d	14		
	<u>382</u>		<u>382</u>

W4	Mark-up and margin	Mark-up	Margin
Sales	125		125
Cost	(100)	100	
Profit	25	25	25
	Mark-up (25/100 × 100)	25%	
	Margin (25/125 × 100)		20%

Branch accounts

Contents

- 1 Branch accounts – Debtor's system
- 2 Branch accounts – Inventory system
- 3 Separate entity branch accounts

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

LO 4 Account for simple transactions between head office and branches.

LO4.1.1 Branch accounts: Describe the special features of branch accounting including differences to routine accounting

LO4.1.2 Branch accounts: Understand and apply the treatment of branch inventory, branch mark-up, goods sent to branch and branch debtors; in the books of head office

LO4.1.3 Branch accounts: Prepare trading/income statement of branch.

1 BRANCH ACCOUNTS – DEBTOR’S SYSTEM

Section overview

- Introduction
- Branch accounting debtor’s system – inventory transferred to branch at cost
- Memorandum accounts and branch trading statements
- Branch accounts in the head office’s trial balance
- Branch accounting debtor’s system – inventory transferred to branch with a mark-up (profit margin, profit loading)

1.1 Introduction

A business might set up branches in a series of locations.

An accounting system must provide information to enable the business to:

- calculate branch profit;
- calculate head office profit;
- calculate overall profit; and
- control the branch.

Types of branch accounting

There are different types of branch accounting systems.

A business might record all branch transactions in ledger accounts set up for the purpose in its own general ledger. There are a variety of ledger accounts that might be used. This material will describe these as GL branch accounts. (They are also known as departmental branch accounts)

Alternatively a branch might operate as a semi-independent autonomous entity maintaining its own general ledger. In this case both the head office and the branch would produce their own financial statements. These would be combined to produce the financial statements of the overall business. These are known as separate entity branch accounts.

GL branch accounts

There are different variations on how a company might account for a branch in its own general ledger. Systems include:

- Branch accounting debtor’s system; and
- Branch accounting inventory system.

In each of these systems goods may be transferred to the branch at cost or at a mark-up.

These systems differ in how the head office records its dealings with a branch and calculates the branch profit.

There is no single correct way for accounting for branches. There may be variations on these systems.

1.2 Branch accounting debtor's system – inventory transferred to branch at cost

A single account is used to record all transfers to and from a branch. This account is of the nature of a receivable (or debtor) as it shows the assets that the head office is owed by the branch. The balance brought down on this account is the total, at that point in time, of all assets that the head office recognises as being associated with the branch.

Another account is usually used to recognise the double entries involving inventories transferred to the branch. This is called the “Goods sent to branch account”.

When the head office buys inventory it debits purchases. When the head office transfers inventory to the branch it debits the branch account. Therefore the same inventory is recorded as a debit in two different places. There must be an adjustment to remove this double counting. This is done by netting off the balance on the goods sent to branch account against the purchases figure.

Debtor's system double entries



Illustration: Transfers to the branch

	Debit	Credit
Transfer of inventory from head office to branch:		
Branch account	X	
Goods sent to branch		X
Returns of inventory from branch to head office:		
Goods sent to branch	X	
Branch account		X
Cash sent from head office to branch:		
Branch account	X	
Bank		X
Cash sent from branch to head office:		
Bank	X	
Branch account		X
Branch expenses paid by head office:		
Branch account	X	
Bank		X
Branch asset bought by head office:		
Branch account	X	
Bank		X

The profit or loss made by the branch is calculated as a balancing figure on the branch account.



Illustration

Branch account (debtor's system)			
	Rs.		Rs.
Balance b/d:			
Branch non-current assets	X		
Branch inventory	X		
Branch receivables	X		
Branch cash	X		
	X		
Goods sent to branch	X	Returns from branch	X
Bank (cash sent to branch)	X	Bank (cash from branch)	X
Bank (branch expenses paid or branch asset bought by head office)	X		
Statement of comprehensive income (branch profit)	X		
		Balance c/d	
		Branch non-current assets	X
		Branch inventory	X
		Branch receivables	X
		Branch cash	X
			X
	<u>X</u>		<u>X</u>

**Example: Branch account (debtor's system)**

A business recorded the following balances for one of its branches at two period ends:

	31 December 2012	31 December 2013
Non-current assets	800	700
Inventory	300	1,000
Receivables	400	1,200
Cash	600	260

All branch sales are on credit and the branch receives cash directly from branch customers before remitting it to head office.

The following took place during the year ended 31 December 2013:

The head office transferred goods which cost Rs. 10,000 to the branch.

The branch sent cash in the amount of Rs. 10,700 to the head office.

These transactions are recorded and branch profit calculated as follows:

Branch account (debtor's system)

	Rs.		Rs.
Balance b/d:			
Branch non-current assets	800		
Branch inventory	300		
Branch receivables	400		
Branch cash	600		
	2,100		
Goods sent to branch	10,000	Bank (cash from branch)	10,700
		Balance c/d	
		Branch non-current assets	700
		Branch inventory	1,000
		Branch receivables	1,200
		Branch cash	260
Branch profit (balancing figure)	1,760		3,160
	<u>13,860</u>		<u>13,860</u>

1.3 Memorandum accounts and branch trading statements

A problem with this method is that it conceals a lot of detail. For example, it provides a profit figure for the branch but does not show how this was earned in detail. To overcome this, a head office might also maintain extra memorandum records about branch activities. Memorandum accounts are not part of the double entry system but are constructed in support of that system.

Note that these are also useful if you are asked to produce a branch trading statement to show the profit earned by the branch.



Example: Memorandum accounts

Step 1: Draw the T accounts and insert the information that is available and insert narrative for other possible movements on the accounts.

Branch non-current assets (memorandum account)

Rs.		Rs.	
Balance b/d	800		
Additions	?	Disposals	?
		Depreciation	?
		Balance c/d	700

Branch inventory (memorandum account)

Rs.		Rs.	
Balance b/d	300		
Goods sent to branch	10,000	Cost of sales	?
		Balance c/d	1,000

Branch cash (memorandum account)

Rs.		Rs.	
Balance b/d	400		
Received from customers	?	Paid to head office	10,700
		Balance c/d	260

Branch receivables (memorandum account)

Rs		Rs.	
Balance b/d	600		
Sales	?	Cash received from customers	?
		Balance c/d	1,100

**Example: Memorandum accounts (continued)****Step 2: Balance off the accounts and identify missing figures.****Branch non-current assets (memorandum account)**

	Rs.		Rs.
Balance b/d	800		
Additions	–	Disposals	–
		Depreciation	100
		Balance c/d	700
	<u>800</u>		<u>800</u>

Branch inventory (memorandum account)

	Rs.		Rs.
Balance b/d	300		
Goods sent to branch	10,000	Cost of sales	9,300
		Balance c/d	1,000
	<u>10,300</u>		<u>10,300</u>

Branch cash (memorandum account)

	Rs.		Rs.
Balance b/d	600		
Received from customers	10,360	Paid to head office	10,700
		Balance c/d	260
	<u>10,960</u>		<u>10,960</u>

Branch receivables (memorandum account)

	Rs.		Rs.
Balance b/d	400		
Sales	11,160	Cash received from customers	10,360
		Balance c/d	1,200
	<u>11,560</u>		<u>11,560</u>

A branch trading statement can then be produced.

**Example: Branch trading statement**

	Rs.
Sales	11,160
Cost of sales	(9,300)
Branch gross profit	<u>1,860</u>
Less: expenses (depreciation)	(100)
Branch profit (as before)	<u>1,760</u>

Alternative double entry

The solution above assumed that the sales double entry was recognised between the branch receivables memorandum account and the branch sales memorandum account (not shown). In addition, a cost of sales figure was identified in the branch inventory memorandum account.

Another approach would be to recognise the sales double entry between the branch receivables memorandum account and the branch inventory memorandum account.

The balance on this account would be the branch gross profit.

**Example: Memorandum accounts - alternative**

Branch inventory (memorandum account)			
	Rs.		Rs.
Balance b/d	300		
Transfers in	10,000	Receivables	11,160
Branch gross profit	1,860	Balance c/d	1,000
	<u>12,160</u>		<u>12,160</u>
Branch receivables (memorandum account)			
	Rs		Rs.
Balance b/d	400		
Sales	11,160	Cash received from customers	10,360
	<u>11,560</u>	Balance c/d	<u>1,200</u>
			<u>11,560</u>

There is a loss of detail with this approach as it does not identify a cost of sales figure.

1.4 Branch accounts in the head office's trial balance

The branch account and the goods sent to branch accounts are accounts in the business's general ledger. As such the balances on these accounts will form part of any trial balance extracted from the general ledger.



Example:

XYZ (head office and branch) – Trial balance as at 31 December 2013

	Rs.	Rs.
Sales		408,000
Purchases	304,400	
Goods sent to branch		20,000
Branch account	4,000	
Branch profit		2,600
Wages and salaries	62,000	
Rent	12,000	
Heating and lighting	5,000	
Inventory as at 1 January 2013	15,000	
Allowance for doubtful debts		4,000
Non-current assets	168,000	
Accumulated depreciation		32,000
Trade receivables	51,000	
Trade payables		42,000
Cash	6,200	
Capital b/f		119,000
	627,600	627,600

Inventory at 31 December 2013 was valued at Rs. 16,500.

The trial balance can be used as basis for preparing financial statements in the usual way.

**Example: XYZ – Statement of financial position**

Assets	Rs.	Rs.
Non-current assets		
Cost	168,000	
Accumulated depreciation	(32,000)	136,000
	<hr/>	
Current assets		
Inventories	16,500	
Branch account	4,000	
Trade receivables (51,000 – 4,000)	47,000	
Cash	6,200	73,700
	<hr/>	
Total assets		<u>209,700</u>
 Equity and liabilities		
Capital		
At start of year	119,000	
Profit for the year	48,700	167,700
	<hr/>	
Current liabilities		
Trade payables		42,000
		<hr/>
Total equity and liabilities		<u>209,700</u>

XYZ – Statement of comprehensive income (statement of profit or loss)

	Rs.	Rs.
Revenue		408,000
Cost of sales		
Opening inventory	15,000	
Purchases (304,400 – 20,000)	284,400	
	<hr/>	
	299,400	
Closing inventory	(16,500)	
	<hr/>	
		(282,900)
Gross profit		<u>125,100</u>
 Branch profit		
		2,600
Expenses:		
Wages and salaries	62,000	
Rent	12,000	
Heating and lighting	5,000	
	<hr/>	
		(79,000)
		<hr/>
		<u>48,700</u>

1.5 Branch accounting debtor's system – inventory transferred to branch with a mark-up (profit margin, profit loading)

Head office may record transfers to a branch at a mark-up to cost. This is described as profit loading. This is more likely to be examined than transfers at cost.

The branch account is prepared in the same way as before with opening inventory, closing inventory, inventory transferred to the branch and returns from the branch all at a marked up cost.

Inventory must be measured at the lower of cost and net realisable value for financial reporting purposes. This means that it is necessary to reduce the items that have been recorded at a mark-up.

This is done by recording adjustments to the transactions with the aim of reducing them to cost.

The adjustments in respect of the opening and closing inventory are recorded in a special account opened for the purpose. This is called an inventory reserve (or inventory provision or unrealised profit account).

The adjustments in respect of inventory transferred to or returned from the branch are made in the goods sent to branch account.



Illustration: Profit loading adjustments

In respect of:	Debit	Credit
Branch closing inventory:		
Branch account	X	
Inventory reserve		X
Branch opening inventory:		
Inventory reserve	X	
Branch account		X
<p>Note: The profit adjustment for closing inventory is recognised at the end of a period and then released at the start of the next period just as the inventory itself is.</p>		
Goods sent from head office to branch:		
Goods sent to branch	X	
Branch account		X
Goods sent from branch to head office:		
Branch account	X	
Goods sent to branch		X

This might seem a little pointless but its purpose is to allow the head office to see the profit it has made on “sales” to the branch for internal reporting purposes.

**Example: Branch account (debtor's system)**

A business recorded the following balances for one of its branches at two period ends:

	31 December 2012	31 December 2013
Non-current assets	800	700
Inventory (at mark –up of 20%)	360	1,200
Receivables	400	1,200
Cash	600	260

The following took place during the year ended 31 December 2013:

The head office transferred goods which cost Rs. 10,000 to the branch at a mark-up of 20%

The branch sent cash in the amount of Rs. 10,700 to the head office.

These transactions are recorded and branch profit calculated as follows:

Branch account (debtor's system)

	Rs.		Rs.
Balance b/d:		Balance b/d:	
Branch non-current assets	800	Inventory reserve	60
Branch inventory	360		
Branch receivables	400		
Branch cash	600		
	2,160		
Goods sent to branch	12,000	Goods sent to branch (mark-up on goods transferred to the branch)	2,000
		Bank (cash to head office)	10,700
		Balance c/d	
Balance c/d		Branch non-current assets	700
Inventory reserve	200	Branch inventory	1,200
		Branch receivables	1,200
		Branch cash	260
Branch profit (balancing figure)	1,760		
	16,120		3,360
			16,120

Additional accounts

The head office will maintain two other accounts in the general ledger:

- Good sent to branch account
- Inventory reserve account.

**Example: general ledger accounts****Goods sent to branch account**

	Rs.		Rs.
Branch account (mark-up)	2,000	Branch account	12,000
Purchases	10,000		
	12,000		12,000

Inventory reserve

	Rs.		Rs.
Branch account	60	Balance b/d	60
Balance c/d	200	Branch account	200
	260		260

Memorandum accounts



Example: Memorandum accounts

Branch non-current assets (memorandum account)

	Rs.		Rs.
Balance b/d	800	Depreciation	100
		Balance c/d	700
	800		800

Branch inventory (memorandum account)

	Rs.		Rs.
Balance b/d	360	Inventory reserve	60
Goods sent to branch	12,000	Goods sent to branch	2,000
		Cost of sales	9,300
Inventory reserve	200	Balance c/d	1,200
	12,560		12,560

Branch cash (memorandum account)

	Rs.		Rs.
Balance b/d	600	Paid to head office	10,700
Received from customers	10,360	Balance c/d	260
	10,960		10,960

Branch receivables (memorandum account)

	Rs.		Rs.
Balance b/d	400	Cash received from customers	10,360
Sales	11,160	Balance c/d	1,200
	11,560		11,560

Alternative double entry

The solution above assumed that the sales double entry was recognised between the branch receivables memorandum account and the branch sales memorandum account (not shown). In addition, a cost of sales figure was identified in the branch inventory memorandum account.

The solution also assumed that the double entries necessary to remove the mark-ups on opening and closing inventory were between the branch inventory memorandum account and the inventory reserve and the double entry necessary to remove the mark-up on goods sent to the branch was between the branch inventory memorandum account and the goods sent to branch account.

Another approach would be to recognise the sales double entry between the branch receivables memorandum account and the branch inventory memorandum account and in addition, to recognise all profit adjustment double entries in the inventory reserve account.

The effect of this is that the branch inventory account should balance (as long as all sales have been at the mark-up and any other movement has been accounted for) and the balance on the inventory reserve should be the gross profit.



Example: Memorandum accounts - Alternative

Branch inventory (memorandum account)			
	Rs.		Rs.
Balance b/d	360		
Goods sent to branch	12,000		
	<u>12,360</u>	Branch receivables	11,160
		Balance c/d	<u>1,200</u>
			<u>12,360</u>
Branch receivables (memorandum account)			
	Rs		Rs.
Balance b/d	400		
Sales	11,160	Cash received from customers	10,360
	<u>11,560</u>	Balance c/d	<u>1,200</u>
			<u>11,560</u>
Inventory reserve			
	Rs.		Rs.
		Balance b/d	60
Branch gross profit	1,860	Mark-up on goods sent to branch	2,000
Balance c/d	<u>200</u>		
	<u>2,060</u>		<u>2,060</u>

2 BRANCH ACCOUNTS – INVENTORY SYSTEM

Section overview

- Branch accounting inventory system
- Transfers at cost – double entries
- Transfers at cost with memorandum sale price columns
- Inventory transferred to branch at mark-up (profit margin, profit loading)
- Transfers at mark-up – double entries
- Accounting for inventory losses at the branch
- Complications
- Summaries

2.1 Branch accounting inventory system – inventory transferred to branch at cost

The previous section explained how a head office might account for transactions with a branch by recording all dealings with the branch in a single account. This is not the only way of doing this.

The head office could record transactions between the head office and the branch and those made by the branch (e.g. sales) in its own general ledger using:

- a branch inventory account;
- a goods sent to branch account;
- other accounts in support of these which might include:
 - branch cash account (branch bank account);
 - branch receivables account;
 - branch non-current asset accounts; and
 - branch expense accounts.

Note that these accounts may or may not exist at the discretion of the business.

The impact of this is that accounts described as memorandum under the debtor's system are brought into the head office's general ledger.

Branch inventory account

This account records all transfers of inventory to the branch (and returns from the branch) measured at cost.

Transfers to the branch are a debit into this account. The balance on the account represents an asset which is the closing inventory held at the branch.

Goods sent to branch account

When the head office buys inventory it debits purchases. When the head office transfers inventory to the branch it debits the branch inventory account. Therefore the same inventory is recorded as a debit in two different places. There must be an adjustment to remove this double counting. This is done by netting off the balance on the goods sent to branch account against the purchases figure. (This is the same as under the debtor's system).

2.2 Transfers at cost – double entries



Illustration: Double entries

	Debit	Credit
Transfer of inventory from head office to branch:		
Branch inventory account	X	
Goods sent to branch		X
Returns from branch to head office:		
Goods sent to branch	X	
Branch inventory account		X
Cash sent to branch from head office:		
Branch cash (or bank)	X	
Head office cash (or bank)		X
Cash sent from branch to head office:		
Head office cash (or bank)	X	
Branch cash (or bank)		X
Branch expenses (paid by branch):		
Branch expenses	X	
Branch cash (or bank)		X
Purchase of non-current assets (paid by branch):		
Branch non-current assets	X	
Branch cash (or bank)		X
Depreciation of branch non-current assets:		
Branch expenses – depreciation	X	
Branch accumulated depreciation.		X

Sales double entries

Sales made by the branch can be accounted for in two ways (as explained previously for the debtor's system).

The sales double entries (and sales return double entries) can be made between the branch receivables and branch sales accounts. This approach allows a cost of sales figure to be extracted from the branch inventory account

**Illustration: Sales double entries**

	Debit	Credit
Branch sales:		
Cash/receivables	X	
Branch sales account		X
Cash collected from receivables		
Branch cash (or bank)	X	
Branch receivables		X

Alternatively the sales double entries (and sales return double entries) can be made between the branch receivables and branch inventory account. This approach results allows a branch gross profit to be extracted from the branch inventory account but does not show the branch cost of sales figure.

**Illustration: Double entries**

	Debit	Credit
Branch sales:		
Cash/receivables	X	
Branch inventory account		X
Cash collected from receivables		
Branch cash (or bank)	X	
Branch receivables		X

**Example: Branch account (inventory system)**

A business recorded the following balances at two period ends:

	31 December 2012	31 December 2013
Branch inventory	360	1,200
Branch receivables	400	1,200
Branch cash	600	260

The following took place during the year ended 31 December 2013:

The head office transferred goods which cost Rs. 10,000 to the branch.

The branch sent cash in the amount of Rs. 10,700 to the head office.

These transactions are recorded and branch profit calculated as follows:

Branch inventory (general ledger account)

	Rs.		Rs.
Balance b/d	300	Cost of sales	9,300
Goods sent to branch	10,000	Balance c/d	1,000
	<u>10,300</u>		<u>10,300</u>

Good sent to branch (general ledger account)

	Rs.		Rs.
	<u>10,000</u>	Branch inventory	10,000
			<u>10,000</u>

Branch cash (general ledger account)

	Rs.		Rs.
Balance b/d	600	Paid to head office	10,700
Received from customers	10,360	Balance c/d	260
	<u>10,960</u>		<u>10,960</u>

Branch receivables (general ledger account)

	Rs.		Rs.
Balance b/d	400	Cash from customers	10,360
Sales	11,160	Balance c/d	1,200
	<u>11,560</u>		<u>11,560</u>

Branch sales (general ledger account)

	Rs.		Rs.
	<u>10,000</u>	Branch receivables	11,160
			<u>10,000</u>

Branch trading account

A branch trading statement can then be produced.

**Example: Branch trading statement**

	Rs.
Sales	11,160
Cost of sales	(9,300)
Branch gross profit	<u>1,860</u>

Alternative sales double entry

The balance on this account would be the branch gross profit.

**Example: Sales double entry**

Branch inventory			
	Rs.		Rs.
Balance b/d	300		
Goods sent to branch	10,000	Branch receivables (sales)	11,160
Branch gross profit	1,860	Balance c/d	<u>1,000</u>
	<u>12,160</u>		<u>12,160</u>
Branch receivables			
	Rs		Rs.
Balance b/d	400		
Branch inventory (sales)	11,160	Cash received from customers	10,360
	<u>11,560</u>	Balance c/d	<u>1,200</u>
			<u>11,560</u>

This method is usually used. The other approach was explained first for better understanding.

2.3 Transfers at cost with memorandum sale price columns

A business might include memorandum columns in the branch inventory account to record the sales price of goods held by the branch.



Example: Branch account (debtor's system)

A business recorded the following balances for one of its branches at two period ends:

	31 December 2012	31 December 2013
Inventory (at mark -up of 20%)	360	1,200
Receivables	400	1,200
Cash	600	260

The following took place during the year ended 31 December 2013:

The head office transferred goods which cost Rs. 10,000 to the branch at a mark-up of 20%

These transactions may be recorded as follows with a memorandum selling price columns in the branch inventory account.

Branch inventory					
	Memo.	Rs.		Memo.	Rs.
Balance b/d	360	300			
Goods sent to branch	12,000	10,000	Branch receivables (sales)	11,160	11,160
Branch gross profit		1,860	Balance c/d	1,200	1,000
	12,360	12,160		12,360	12,160
Branch receivables					
		Rs.			Rs.
Balance b/d		400			
Branch inventory (sales)		11,160	Cash received from customers		10,360
			Balance c/d		1,200
		11,560			11,560

2.4 Inventory transferred to branch at mark-up (profit margin, profit loading)

The branch is a selling agency for the head office which records transactions between the head office and the branch and those made by the branch (e.g. sales) in its own general ledger using:

- ❑ a branch inventory account;
- ❑ a branch mark-up account;
- ❑ a goods sent to branch account; and
- ❑ other accounts in support of these which might include:
 - branch cash account;
 - branch bank account;
 - branch receivables account;
 - branch non-current asset accounts; and
 - branch expense accounts.

Note that these accounts may or may not exist at the discretion of the business.

Branch inventory account

This account records all transfers of inventory to the branch (and returns from the branch) measured these at the selling price of the inventory.

Transfers to the branch are a debit into this account. The balance on the account represents an asset which is the closing inventory held at the branch. As stated above the inventory is recorded in this account at selling price. This means that the closing inventory is also at selling price. However, inventory must be measured at the lower of cost and net realisable value. The balance on the account must be adjusted to reduce the figure to cost. This will be explained shortly.

Branch mark-up account

This account is used to record the profit element on transfers from and back to head office. (This account might also be called the branch profit loading account or the adjustment account).

The profit made by the branch is transferred from this account to the statement of comprehensive income of the business.

The closing balance on this account represents the profit element in the branch closing inventory. This is a credit balance. When the financial statements are prepared the balance on this account is netted off the balance on the branch inventory account thus adjusting it to cost. This solves the first of the two problems mentioned above.

The profit element in the closing inventory has been recognised by the head office but has not been realised (i.e., not turned into actual profit). It can be described as unrealised profit. (You will see later that this is an important concept when it comes to preparing separate entity branch accounts)

Goods sent to branch

This account is used to record the cost of transfers from and back to head office.

The closing balance on this account is netted off purchases to avoid double counting. This solves the second of the two problems mentioned above.

2.5 Transfers at mark-up – double entries



Illustration: Double entries

	Debit	Credit
Transfer of inventory from head office to branch:		
Branch inventory account (selling price)	X	
Goods sent to branch (selling price)		X
+		
Goods sent to branch (mark-up)	X	
Mark-up account		X

The impact of the above is that transfers of inventory goods to a branch are included in the goods sent to branch account at cost.

Returns from branch to head office

Goods sent to branch (selling price)	X	
Branch inventory account (selling price)		X
+		
Mark-up account	X	
Goods sent to branch (mark-up)		X

This is simply the reverse of the entries when goods are sent to the branch

Branch sales:

Cash/receivables	X	
Branch inventory account		X

**Example:**

Islamabad Electrical Retailers set up a branch in Lahore near the end of its financial year.

The branch is a selling agency with all records maintained at head office in Lahore.

Head office purchases in the year are Rs. 9,000,000.

Just before the year-end the head office transferred inventory to the branch. This inventory had cost Rs. 500,000 and is to be sold at a mark-up of 25% (Rs. 125,000). This means that the inventory has a selling price of Rs. 625,000.

The double entry to record the transfer is as follows:

	Dr	Cr
Branch inventory account (at selling price)	625,000 ¹	
Good sent to branch account (at selling price)		625,000 ²
Good sent to branch account (profit element)	125,000 ³	
Branch mark-up account (profit element)		125,000 ⁴

If the branch has not sold any of this inventory by the year-end then the financial statements would contain the following extracts:

Statement of financial position	Rs.
Current assets:	
Inventory held at branch (625,000 ¹ – 125,000 ⁴)	500,000
Statement of comprehensive income	Rs.
Cost of sales	
Purchases (9,000,000 – (625,000 ² – 125,000 ³))	8,500,000
Branch profit	nil

The transfer double entries can be simplified as follows



Illustration: Transfers/from the branch

	Debit	Credit
Transfer of inventory from head office to branch:		
Branch inventory account (selling price)	X	
Goods sent to branch (mark-up)		X
Goods sent to branch (cost)		X
Returns from branch to head office		
Goods sent to branch (cost)	X	
Mark-up account	X	
Branch inventory account (selling price)		X



Example:

Islamabad Electrical Retailers set up a branch in Lahore near the end of its financial year.

The branch is a selling agency with all records maintained at head office in Lahore.

Head office purchases in the year are Rs. 9,000,000.

Just before the year-end the head office transferred inventory to the branch. This inventory had cost Rs. 500,000 and is to be sold at a mark-up of 25% (Rs. 125,000). This means that the inventory has a selling price of Rs. 625,000.

The double entry to record the transfer is as follows:

	Dr	Cr
Branch inventory account (at selling price)	625,000 ¹	
Good sent to branch account (at cost)		500,000 ²
Branch mark-up account (profit element)		125,000 ³
Statement of financial position		Rs.
Current assets:		
Inventory held at branch (625,000 ¹ – 125,000 ³)		500,000
Statement of comprehensive income		Rs.
Cost of sales		
Purchases (9,000,000 – 500,000 ³)		8,500,000
Branch profit		nil

This is the example used several times already to demonstrate different systems.



Example: Branch account (inventory system)

A business recorded the following balances for one of its branches at two period ends:

	31 December 2012	31 December 2013
Inventory (at mark -up of 20%)	360	1,200
Receivables	400	1,200
Cash	600	260

The following took place during the year ended 31 December 2013:

The head office transferred goods which cost Rs. 10,000 to the branch at a mark-up of 20%

The branch sent cash in the amount of Rs. 10,700 to the head office.

These transactions are recorded and branch profit calculated as follows:

Branch inventory			
	Rs.		Rs.
Balance b/d	360		
Goods sent to branch	12,000	Branch receivables (sales)	11,160
		Balance c/d	1,200
	<u>12,360</u>		<u>12,360</u>
Goods sent to branch account			
	Rs.		Rs.
Branch account (mark-up)	2,000	Branch account	12,000
Purchases	10,000		
	<u>12,000</u>		<u>12,000</u>
Branch mark-up			
	Rs.		Rs.
Branch gross profit	1,860	Balance b/d	60
Balance c/d	200	Mark-up on goods sent to branch	2,000
	<u>2,060</u>		<u>2,060</u>

**Example:****Branch cash (general ledger account)**

	Rs.		Rs.
Balance b/d	600		
Received from customers	10,360	Paid to head office	10,700
	<u>10,960</u>	Balance c/d	<u>260</u>
			<u>10,960</u>

Branch receivables

	Rs		Rs.
Balance b/d	400		
Sales	11,160	Cash received from customers	10,360
	<u>11,560</u>	Balance c/d	<u>1,200</u>
			<u>11,560</u>

2.6 Accounting for inventory losses at the branch

Sometimes a branch might lose inventory for example due to damage or theft. Such losses must be accounted.

Losses are categorised as:

- Normal losses; or
- Abnormal losses

Normal loss

A normal loss is one that is expected and accepted by the business. It is an accepted cost of being involved in a certain type of business. For example, a business that sells glass accepts that employees might occasionally drop a sheet and break it. Of course the owners of the business do not like this but they have to accept that breakages are a normal cost of being in this type of business.



Illustration:

Experience shows that for every 100 sheets of glass a business buys, two are broken.

This means that in order to sell 98 sheets the business has to buy 100 sheets.

The revenue from 98 sheets is matched against the cost of 100 sheets.

This might happen in any business not just those with branches. In businesses without branches the above matching is achieved automatically because all purchases are expensed and the closing inventory deducted from them. If a sheet of glass is broken then there would be no deduction against the number purchased. In other words, no special treatment is needed.

However, inventory transferred to a branch has been recorded in a special way. The profit element has been recognised on all transfers and this must be corrected using the following double entry:



Illustration: Accounting for normal loss (at a branch)

	Debit	Credit
Mark-up account (selling price of inventory lost)	X	
Branch inventory account (selling price of inventory lost)		X

It is not immediately obvious how this works but the following example should make it clear.

**Example**

A business transfers 100 sheets of glass to its branch.

Each sheet costs Rs. 1,000 and is to be sold at Rs. 1,500.

The branch sells all of the sheets except 2 which were broken.

The profit made by the branch can be calculated from first principles as follows:

	Rs.
Revenue (98 × Rs.1,500)	147,000
Cost of sale:	
Purchases (100 × Rs.1,000)	100,000
Closing inventory	—
	(100,000)
Gross profit	<u>47,000</u>

The above is not how the business would account for the sale of this glass (it is only shown so that you can see that the profit using branch accounting is correct).

The actual accounting would be as follows:

Branch inventory			
	Rs.		Rs.
Goods to branch	150,000	Branch sales	147,000
		Lost inventory (2 × 1,500)	3,000
	<u>150,000</u>		<u>150,000</u>
Branch mark up			
	Rs.		Rs.
Lost inventory (2 × 1,500)	3,000	Goods to branch	50,000
Branch gross profit	47,000		
	<u>50,000</u>		<u>50,000</u>
Goods sent to branch			
	Rs		Rs.
Purchases	100,000	Goods to branch	100,000
	<u>100,000</u>		<u>100,000</u>

Abnormal loss

This is different. It has arisen out of an unexpected event. It must be highlighted as something out of the ordinary so that users can understand its impact. An inventory loss account is opened to do this.

**Illustration: Accounting for abnormal loss (at a branch)**

	Debit	Credit
Mark-up account (mark-up of inventory lost)	X	
Branch inventory account (selling price of inventory lost – as for normal loss)		X
Inventory loss account (cost of inventory lost)	X	

**Example**

A business transfers 100 sheets of glass to its branch.

Each sheet costs Rs. 1,000 and is to be sold at Rs. 1,500.

The branch sells all of the sheets except 2 which were broken in what was considered to be an abnormal event.

The accounting would be as follows:

Branch inventory			
	Rs.		Rs.
Goods to branch	150,000	Branch sales	147,000
		Lost inventory (2 × 1,500)	3,000
	150,000		150,000

Branch mark up			
	Rs.		Rs.
Lost inventory (2 × 500)	1,000	Goods to branch	50,000
Branch gross profit	49,000		
	50,000		50,000

Inventory loss			
	Rs		Rs.
Lost inventory (2 × 1,000)	2,000	P&L	2,000
	2,000		42,000

Summary:	Rs.
Gross profit	49,000
Abnormal loss	(2,000)
Branch profit	47,000

Note that the loss recognised is the same as before but is presented differently.

2.7 Complications

Branch sales – returns from customers direct to branch

A customer to whom a sale has been made might return the goods to the branch.

The following double entry is used if the policy of the company is to record sales in the branch inventory account:



Illustration: Accounting for sales returns to the branch

	Debit	Credit
Branch inventory account	X	
Branch receivables (or cash)		X

The inventory will be included as the part of the closing inventory of the branch in the usual way.

Branch sales – returns from customers direct to head office

A customer to whom a sale has been made might return the goods to the head office. In this case the head office accepts the returned inventory and repays the customer. The branch no longer has the inventory. This is similar to the branch returning the goods to head office.

This is accounted for as follows:



Illustration: Accounting for sales returns to the head office

	Debit	Credit
Reverse the sale		
Branch inventory account	X	
Branch receivables (or cash)		X
Account for the return to head office		
Goods sent to branch (selling price)	X	
Branch inventory account (selling price)		X
+		
Mark-up account	X	
Goods sent to branch (mark-up)		X

Goods in transit

A question might tell you that there are goods in transit from the head office to the branch at the year-end have not yet been accounted for in the branch accounts.

Goods in transit should be accounted for as goods sent to branch.

2.8 Summaries

Debtor's system

Sales double entry between branch receivables (memorandum) and:		
	Branch Sales (memorandum)	Branch inventory (memorandum)
Transfers at cost	<p>Cost of sales identified as a balancing figure in the branch inventory (memorandum) account.</p> <p>Gross profit can be shown in a trading account</p>	<p>Branch gross profit identified as a balancing figure in the branch inventory (memorandum) account.</p> <p>Cost of sales figure not identified</p>
Transfers at a mark-up	<p>Inventory reserve (general ledger) simply used to account for mark-up on opening and closing inventory.</p> <p>The mark-ups on opening and closing inventory are recognised at the end of one period and then transferred out at the beginning of the next.</p> <p>Cost of sales identified as a balancing figure in the branch inventory (memorandum) account.</p> <p>Gross profit can be shown in a trading account</p>	<p>Inventory reserve (memorandum) used to include mark-up on opening and closing inventory and mark-up on goods sent to and from branch.</p> <p>Balance on inventory reserve (memorandum) is branch gross profit.</p>

Inventory system

Sales double entry between branch receivables (GL) and:		
	Branch Sales(GL)	Branch inventory (GL)
Transfers at cost	Cost of sales identified as a balancing figure in the branch inventory (general ledger) account.	Branch gross profit identified as a balancing figure in the branch inventory (general ledger) account. Cost of sales figure not identified
	Gross profit calculated in a trading account	
Transfers at a mark-up		Branch mark-up account (general ledger) used to include mark-up on opening and closing inventory and mark-up on goods sent to and from branch. Balance on the branch mark-up account (general ledger) (general ledger) is branch gross profit.

3 SEPARATE ENTITY BRANCH ACCOUNTS

Section overview

- Introduction
- Double entries
- Preparing financial statements – Introduction
- Preparing financial statements – Complications

3.1 Introduction

A branch might be set up as a semi-independent business with its own set of records.

The branch will receive inventory from the head office and also might purchase inventory from other suppliers.

Transactions between the head office and the branch are recorded in current accounts:

- Head office general ledger will include a receivable called **Branch current account**,
- Branch general ledger will include a payable called **Head office current account**. This liability constitutes the capital of the branch.

3.2 Double entries

The main double entries to record transactions between the head office and the branch can be summarised as follows.

Goods sent from head office to the branch



Illustration: Goods sent from head office to the branch

Head office accounts	Debit	Credit
Branch current account	X	
Goods sent to branch (a type of sale from the head office's viewpoint)		X
Branch accounts	Debit	Credit
Goods from head office (a type of purchase from the head office's viewpoint).	X	
Head office current account		X

Cash from head office to the branch**Illustration: Cash from head office to the branch**

Head office accounts	Debit	Credit
Branch current account	X	
Cash		X
Branch accounts	Debit	Credit
Cash	X	
Head office current account		X

Cash from branch to head office**Illustration: Cash from branch to head office**

Head office accounts	Debit	Credit
Cash	X	
Branch current account		X
Branch accounts	Debit	Credit
Head office current account	X	
Cash		X

Branch profit**Illustration: Branch profit**

Head office accounts	Debit	Credit
Branch current account	X	
Head office profit and loss		X
Branch accounts	Debit	Credit
Branch profit and loss	X	
Head office current account		X

3.3 Preparing financial statements – Introduction

There are three sets of financial statements to consider:

- ❑ Head office financial statements;
- ❑ Branch financial statements; and
- ❑ The financial statements of the business as a combined entity (head office plus branch).

The financial statements of the head office and of the branch are always prepared from their viewpoint (as will be explained shortly).

The financial statements of the combined entity are constructed by adding those of the head office and the branch together.

During this exercise the current accounts are cancelled out. If this was not the case the combined entity would have an asset and liability collectible from and payable to itself, which is clearly ridiculous.

Similarly the amounts transferred to the branch which appear in the revenue section of the head office's statement of comprehensive income are cancelled out against the transfers from head office which appear in the purchases section of the branch's statement of comprehensive income.

Balances between the head office (HO) and the branch never appear in the financial statements of the combined entity (CE).



Illustration: Cancellation

	HO	Branch	Adjustment		CE
			Dr	Cr	
Sales	100	50			150
Transfers to branch	30		30		
Purchase	65	25			90
Transfers from HO		30		30	

The result of the adjustment is that the sales and purchases figures in the combined entity account are just those to and from third parties.

3.4 Preparing financial statements – Complications

Preparing the financial statements of the combined entity by adding those of the head office and the branch together sounds very easy and indeed it is for most of the line items. However, there are some quite tricky adjustments which you will need to make in order to complete the financial statements.

The current accounts may not agree

The current accounts must be cancelled out against each other. They must be equal if this is to happen. This may not be the case because of items in transit.

In other words there might be inventory despatched by the head office and recognised in the head office's branch current account that has not yet been received by the branch.

Similarly there might be cash in transit from the branch. As far as the branch is concerned they have made a payment and have reduced the liability shown on their head office current account but the head office may not yet have recorded this.

Items in transit must be accounted for before the current accounts can be cancelled.

In questions that ask you to prepare the current accounts of the head office and of the branch always adjust for goods in transit in the head office accounts. Note that this is a convention rather than a rule. You could account for goods in transit in other ways but this is the method adopted in this material.



Example:

Vazir Ltd based in Hyderabad decided to set up an autonomous branch in Larkana. Hyderabad opened the branch by sending a cheque for Rs.110,000 on 1 January 2013.

During 2013 the following transactions took place:

	Rs.
Goods sent to Larkana branch	400,000
Goods returned to head office	35,000
Cash remitted from Larkana to head office	350,000
Profit as shown by Larkana branch profit and loss account	40,000

At 31 December 2013 Rs.20,000 of the goods sent from head office had not been received in Larkana. (The branch had received only Rs. 380,000).

Also, Rs.15,000 of cash remitted from Larkana was not received in Hyderabad until 2 January 2014. (The head office had received only Rs. 335,000).

Show how these transactions would be recorded in the current account of both Hyderabad and Larkana.

**Example (continued)****Head office accounts:****Branch current account**

	Rs.		Rs.
Cash	110,000	Goods returned by branch	35,000
Goods sent to branch	400,000	Cash from branch	335,000
		Balance c/d	<u>180,000</u>
	<u>550,000</u>		<u>550,000</u>
Balance b/d	180,000	Adjustments	
		Goods in transit	20,000
		Cash in transit	15,000
		Balance c/d	<u>145,000</u>
	<u>180,000</u>		<u>180,000</u>

Branch accounts:**Head office current account**

	Rs.		Rs.
Goods returned to HO	35,000	Cash from head office	110,000
Cash to head office	350,000	Goods from HO	380,000
		Profit for the period	40,000
Balance c/d	<u>145,000</u>		
	<u>530,000</u>		<u>530,000</u>

The two balances are now equal and can be cancelled out when the statements of financial position of the head office and the branch are combined.

The other side of the goods in transit adjustment in the head office's books is to "goods sold to branch". In addition to this the inventory has to be included in the head office closing inventory.

Inventory transferred at a mark-up

Inventory is often transferred at a mark-up.

This presents no problem from the point of view of the head office and of the branch. The accounts of the head office and branch are always prepared from their viewpoint to reflect transactions as they see them.

- ❑ As far as the head office is concerned a sale has been made to a customer (the branch) at the selling price (cost plus the mark-up).
- ❑ As far as the branch is concerned inventory has been purchased from a supplier (the head office) and is included in the branch's inventory at the cost (to the branch). This is the amount at which the head office has made the sale (its cost plus mark-up).

When the financial statements of the combined entity are prepared the inventory must be measured at cost to the combined entity. Any unrealised profit must be eliminated.



Illustration: Unrealised profit

A head office buys inventory for Rs. 200,000 and transfers half of this to its branch at a mark-up of 20%. Therefore the price charged is Rs. 120,000 ($\frac{1}{2}$ of 200,000 = 100,000 + 20%).

The branch still holds this inventory at the year end.

	HO	Branch	Adjustment		CE
			Dr	Cr	
Transfers to branch	120	–	120		–
Purchase	200				200
Transfers from HO		120		120	
Closing inventory	(100)	(120)	20		(200)
	(100)	–	↓		–
Gross profit	20	–	20		–

The other side of the adjustment to the closing inventory is to an account in the statement of financial position known as the provision for unrealised profit (PUP) account. This is netted off against the closing inventory in the statement of financial position.

Note that the PUP is similar to the allowance account against doubtful debts which you have studied elsewhere.

The adjustment is often more complicated than this because there will be opening and closing inventory in a question. Each of these might contain unrealised profit.

Just as it is the movement on inventory that is recognised in the statement of comprehensive income so it is the movement on unrealised profit that is recognised as an adjustment in the statement of comprehensive income. This will be demonstrated later.

Goods in transit and unrealised profit

Goods in transit add a further complication. These are removed from the branch current account that is in the head office's books as explained earlier.

They must be included in inventory at cost to the combined entity. This might involve an unrealised profit adjustment.

The chapter now continues by going through an example in simple stages.



Example:

Vazir Ltd is based in Hyderabad with an autonomous branch in Larkana.

The following are the trial balances have been extracted as 31 December 2013.

	Head office		Branch	
	Dr	Cr	Dr	Cr
	Rs.	Rs.	Rs.	Rs.
Non-current assets (NBV)	204,000		41,000	
Sales		542,000		170,500
Goods sold to branch		143,000		
Purchases	471,000		2,000	
Inventories at 1 January 2012	49,000		28,000	
Payables		64,000		
Receivables	17,000		5,000	
Share capital		50,000		
Expenses	97,500		14,500	
Provision for unrealised profit		3,000		
Current accounts	58,000			46,000
Reserves		150,000		
Goods from Head office			131,000	
Cash	12,500			14,000
Wages and salaries	43,000		9,000	
	<u>952,000</u>	<u>952,000</u>	<u>230,500</u>	<u>230,500</u>

Inventory at 31 December 2013

	Cost to branch	Cost to combined entity
HO inventory	N/A	54,000
Branch inventory	34,000	28,600
Goods in transit	12,000	9,800

Further information:

Depreciation of 20% of NBV is to be charged for the year.

Required

Profit and loss accounts and balance sheets for the head office, the branch and the combined entity for the year ending 31.12.X2

Step 1



Example:

Step 1: Set up proforma statements of comprehensive income in columnar form for the head office, branch and the combined entity.

Leave columns for workings as below.

Fill in the easy figures from the trial balances remembering that the numbers for the head office and the branch are from their own viewpoint.

The combined entity opening inventory is always the sum of the opening inventories from the trial balance less the opening unrealised profit balance. Put this in the adjustment column

Add across where possible. Remember that the goods sold to the branch and goods bought from the head office never appear in the combined entity statement.

	Head office Rs.	Branch Rs.	Working Rs.	Rs.	Combined Rs.
Sales	542,000	170,500			712,500
Goods sold to branch	<u>143,000</u>				
	685,000				
Cost of sales					
Inventories at 1 January 2012	49,000	28,000		3,000 ^{cr}	74,000
Purchases	471,000	2,000			473,000
Goods from head office		131,000			
	<u>520,000</u>	<u>161,000</u>			
Closing inventory	(54,000)	(34,000)			
	(466,000)	(127,000)			
Gross profit	219,000	43,500			
Wages and salaries	43,000	9,000			52,000
Expenses	97,500	14,500			112,000
Depreciation	40,800	8,200			49,000
	<u>(181,300)</u>	<u>(31,700)</u>			<u>(213,000)</u>
Profit for the year	<u>37,700</u>	<u>11,800</u>			

Step 2

**Example:**

Step 2: Calculate the closing inventory for the combined entity.

The closing inventory the combined entity statement should always be at cost to the combined entity. (It is often convenient to note the unrealised profit amounts at this stage).

At this stage the statement of comprehensive income can be almost completed though there is still some work to do.

	Head office Rs.	Branch Rs.	Working Rs.	Rs.	Combined Rs.
Sales	542,000	170,500			712,500
Goods sold to branch	143,000				
	<u>685,000</u>				
Cost of sales					
Inventories at 1 January 2012	49,000	28,000		3,000 ^{Cr}	74,000
Purchases	471,000	2,000			473,000
Goods from head office		131,000			
	<u>520,000</u>	<u>161,000</u>			<u>547,000</u>
Closing inventory	(54,000)	(34,000)			(92,400)
	<u>(466,000)</u>	<u>(127,000)</u>			<u>(454,600)</u>
Gross profit	219,000	43,500			257,900
Wages and salaries	43,000	9,000			52,000
Expenses	97,500	14,500			112,000
Depreciation	40,800	8,200			49,000
	<u>(181,300)</u>	<u>(31,700)</u>			<u>(213,000)</u>
Profit for the year	<u>37,700</u>	<u>11,800</u>			<u>44,900</u>

Working: Closing inventory from the combined entity's viewpoint

	Cost to branch	Cost to combined entity	Unrealised profit
HO inventory	not applicable	54,000	not applicable
Branch inventory	34,000	28,600	5,400
Goods in transit	12,000	9,800	2,200
		<u>92,400</u>	<u>7,600</u>

Step 3

**Example:**

Step 3: Enter the adjustments necessary for the goods in transit into one column. Enter the adjustments necessary for unrealised profit amounts in another column. This is not double entry. It is simply a working.

Sum the adjustments in the unrealised profit column.

Each line should now cross cast.

	Head office Rs.	Branch Rs.	Working Rs.	Rs.	Combined Rs.
Sales	542,000	170,500			712,500
Goods sold to branch	143,000		143,000		
	<u>685,000</u>				
Cost of sales					
Inventories at 1 January 2012	49,000	28,000		3,000 ^{Cr}	74,000
Purchases	471,000	2,000			473,000
Goods from head office		131,000	131,000		
	520,000	161,000		5,400 ^{Dr}	547,000
Closing inventory	(54,000)	(34,000)	12,000	2,200 ^{Dr}	(92,400)
	<u>(466,000)</u>	<u>(127,000)</u>			<u>(454,600)</u>
Gross profit	219,000	43,500	–	4,600 ^{Dr}	257,900
Wages and salaries	43,000	9,000			52,000
Expenses	97,500	14,500			112,000
Depreciation	40,800	8,200			49,000
	<u>(181,300)</u>	<u>(31,700)</u>			<u>(213,000)</u>
Profit for the year	<u>37,700</u>	<u>11,800</u>		4,600 ^{Dr}	<u>44,900</u>

Step 4

**Example:**

Step 4: Perform the unrealised profit double entry in the head office's books.

The total posting is as follows:

Provision for unrealised profit:	
Posting to the statement of comprehensive income	
	Rs.
On opening inventory (a credit)	(3,000)
On closing inventory (a debit)	5,400
On closing goods in transit (a debit)	2,200
	4,600

The journal is as follows:

	Debit	Credit
Statement of comprehensive income – line item	4,600	
Provision for unrealised profit		4,600

This is now shown below:

	Head office Rs.	Branch Rs.	Working Rs.	Rs.	Combined Rs.
Sales	542,000	170,500			712,500
Goods sold to branch	143,000		143,000		
	685,000				
Cost of sales					
Inventories at 1 January 2012	49,000	28,000		3,000 ^{Cr}	74,000
Purchases	471,000	2,000			473,000
Goods from head office		131,000	131,000		
	520,000	161,000			547,000
Closing inventory	(54,000)	(34,000)	12,000	5,400 ^{Dr} 2,200 ^{Dr}	(92,400)
	(466,000)	(127,000)			(454,600)
Gross profit	219,000	43,500	–	4,600 ^{Dr}	257,900
Wages and salaries	43,000	9,000			52,000
Expenses	97,500	14,500			112,000
Depreciation	40,800	8,200			49,000
	(181,300)	(31,700)			(213,000)
Profit for the year	37,700	11,800			
Unrealised profit	(4,600)				
	33,100	11,800			44,900

Step 5

**Example:**

Step 5: The branch profit is recognised in the head office current account held by the branch.

The branch profit is recognised in the branch current account held by the head office.

The journals to achieve this are as follows:	Debit	Credit
Branch's books:		
Statement of comprehensive income	11,800	
Head office current account		11,800
Head office's books:		
Branch current account		
Statement of comprehensive income	11,800	

This is now shown below:

	Head office Rs.	Branch Rs.	Working Rs.	Rs.	Combined Rs.
Sales	542,000	170,500			712,500
Goods sold to branch	143,000		143,000		
	<u>685,000</u>				
Cost of sales					
Inventories at 1 January 2012	49,000	28,000		3,000 ^{Cr}	74,000
Purchases	471,000	2,000			473,000
Goods from head office		131,000	131,000		
	<u>520,000</u>	<u>161,000</u>			<u>547,000</u>
Closing inventory	(54,000)	(34,000)	12,000	5,400 ^{Dr} 2,200 ^{Dr}	(92,400)
	<u>(466,000)</u>	<u>(127,000)</u>			<u>(454,600)</u>
Gross profit	219,000	43,500	–	4,600 ^{Dr}	257,900
Wages and salaries	43,000	9,000			52,000
Expenses	97,500	14,500			112,000
Depreciation	40,800	8,200			49,000
	<u>(181,300)</u>	<u>(31,700)</u>			<u>(213,000)</u>
Profit for the year	37,700	11,800			
Unrealised profit	(4,600)				
	<u>33,100</u>	<u>11,800</u>			<u>44,900</u>
	11,800	(11,800)			
	<u>44,900</u>	<u>–</u>			<u>4,900</u>

Step 6

It is now time to construct the statement of financial position.

A lot of the numbers are straight forward and you have already carried out a lot of work on the other numbers.

The following workings are usually needed:

- ❑ Head office accounts:
 - Branch current account (head offices books);
 - Head office inventory account
 - Provision for unrealised profit
 - Reserves
- ❑ Head office current account (branch's books)

Note that it is possible to complete the combined entity statement of financial position without these workings because the current accounts do not feature, the closing inventory is known and the reserves could be taken as a balancing figure.



Example:

	Head office Rs.	Branch Rs.	Combined Rs.
Non-current assets			
At start (NBV)	204,000	41,000	
Depreciation	40,800	8,200	
	163,200	32,800	196,000
Branch Current account			
Provision for unrealised profit			
Inventory		34,000	92,400
Receivables	17,000	5,000	22,000
Cash	12,500		12,500
	308,900	71,800	322,900
Share capital			
Share capital	50,000		50,000
Reserves			
Reserves			194,900
Head office current account:			
Payables	64,000		64,000
Overdraft		14,000	14,000
	308,900	71,800	322,900

Step 7

**Example:****Step 7: Statement of financial position workings**

	Head office's books	Branch's books
	Branch current account (receivable)	Head office current account (payable)
Opening balance (from trial balance)	58,000	46,000
Less: goods in transit	(12,000)	
Branch profit	11,800	11,800
	57,800	57,800
Head office's books:		
Provision for unrealised profit		
Unrealised profit on closing inventory	5,400	Recognised as a line item Set against closing inventory (see below)
Unrealised profit on goods in transit	2,200	
	7,600	
Head office inventory	Rs.	
Given in question	54,000	
Goods in transit at selling price	12,000	
Unrealised profit on goods in transit	(2,200)	
	63,800	
Reserves		
Given in question	150,000	
Profit for the year	44,900	
	194,900	

Step 8

**Example: Completing the statement of financial position**

	Head office Rs.	Branch Rs.	Combined Rs.
Non-current assets			
At start (NBV)	204,000	41,000	
Depreciation	40,800	8,200	
	163,200	32,800	196,000
Current accounts	57,800		
Provision for unrealised profit	(5,400)		
Inventory	63,800	34,000	92,400
Receivables	17,000	5,000	22,000
Cash	12,500		12,500
	<u>308,900</u>	<u>71,800</u>	<u>322,900</u>
Share capital			
Share capital	50,000		50,000
Reserves	194,900		194,900
Current accounts		57,800	
Payables	64,000		64,000
Overdraft		14,000	14,000
	<u>308,900</u>	<u>71,800</u>	<u>322,900</u>

Introduction to cost of production

Contents

- 1 Accounting for management
- 2 Cost and management accounting versus financial accounting
- 3 Introduction to costs
- 4 Cost classification by type and function
- 5 Fixed and variable costs
- 6 Direct and indirect costs
- 7 Product costs and period costs
- 8 Cost estimation: high/low method
- 9 Cost estimation: linear regression analysis

INTRODUCTION

Learning outcomes

To provide candidates with an understanding of the fundamentals of accounting theory and basic financial accounting with particular reference to international pronouncements.

Cost of production

- LO 5** **On the successful completion of this paper, candidates will be able to understand the fundamentals of accounting for the costs of production**
- LO 1.1.1 Explain the scope of cost accounting and managerial accounting and compare them with financial accounting
- LO5.1.1: *Meaning and scope of cost accounting:* Explain the scope of cost accounting and managerial accounting and compare them with financial accounting.
- LO5.2.1: *Analysis of fixed, variable and semi variable expenses:* Explain using examples the nature and behaviour of costs.
- LO5.2.2: *Analysis of fixed, variable and semi variable expenses:* Explain using examples fixed, variable, and semi variable costs.
- LO5.3.1: *Direct and indirect cost:* Identify and apply the concept of direct and indirect costs in given scenarios.
- LO5.4.1: *Cost estimation:* Apply high-low points' method in cost estimation techniques.
- LO5.4.2: *Cost estimation:* Apply regression analysis for cost estimation.
- LO5.5.1: *Product cost and period cost:* Compare and comment product cost and period cost in given scenarios.

1 ACCOUNTING FOR MANAGEMENT

Section overview

- Introduction to accounting information
- Data and information
- Qualities of good information
- Purpose of management information

1.1 Introduction to accounting information

Accounting is one of the key functions for almost any business; it may be handled by a bookkeeper and accountant at small firms or by sizable finance departments with dozens of employees at larger companies.

There are many definitions of accounting.



Definitions: Accounting

The systematic and comprehensive recording of financial transactions pertaining to a business and the process of summarizing, analysing and reporting these transactions.

A systematic process of identifying, recording, measuring, classifying, verifying, summarizing, interpreting and communicating financial information.

The process of identifying, measuring, and communicating economic information to permit informed judgements and decisions by users of the information

The main purposes of accounting may be summarised as follows.

- ❑ To provide a record of the financial value of business transactions, and in doing so to establish financial controls and reduce the risks of fraud
- ❑ To assist with the management of the financial affairs of an entity
- ❑ To provide information - mainly information of a financial nature.

Accounting information is provided for:

- ❑ Management, so that managers have the information they need to run the company
- ❑ Other users of information, many of them outside the entity. For example, a company produces accounting information for its shareholders in the form of financial statements, and financial statements are also used by tax authorities, investors, trade union representatives and others.

Cost and management accounting is concerned with the provision of information, mainly of a financial nature, for management.

1.2 Data and information

Data and information

The terms 'data' and 'information' are often used as if they have the same meaning. However, there is a difference between data and information. Data is a term that refers to facts. It must be turned into information in order for it to become useful. Information is derived from facts that have been processed, structured and analysed.

- ❑ **Data** consists of unprocessed facts and statistics.
 - Data is collected and processed to produce information.
 - Data has no meaning until it has been processed into information.
- ❑ **Information** has a meaning and a purpose. It is produced from 'data'. It is processed data that has relevance to a particular useful purpose.

Accounting systems are designed to capture data and process it into information.



Illustration: Data and information

A company engages in many different types of transactions (sales, purchases of materials, expenses, and so on).

Each of these is processed into individual records (for example, sales are recorded on sales invoices). This would result in thousands of individual records.

An accounting system summarises these in a meaningful manner to produce information. This is carried out in a series of steps each of which provides information based ultimately on the original transactions.

Sales day book – summarises the total sales made in a specified period.

The receivables control account shows the total owed to the company at any point in time.

The receivables ledger shows the total amount owed the company by individual customers at any point in time.

The general ledger is the source of information which can be further processed into periodic reports (financial statements).

A cost accounting system records data about the costs of operations and activities within the entity. The sources of cost accounting data within an organisation include invoices, receipts, inventory records and time sheets.

Many of the documents from which cost data is captured are internally-generated documents, such as time sheets and material requisition notes.



Illustration:

A ship yard may employ hundreds of workers and be building and refitting several ships at any one time.

Each worker might be required to complete job sheets which specify the length of time taken by that worker and on which contract.

This would produce many thousands of individual records (data) which are not very useful until the facts contained in those records are processed into information. Thus the system might produce reports (information) to show the labour cost, by type of labour, by week for each ship.

Data is analysed and processed to produce management information, often in the form of:

- ❑ routine reports;
- ❑ specially-prepared reports;
- ❑ answers to 'one-off' enquiries that are input to a computer system.

Information produced from cost accounting data is management accounting information.

Management accounting systems also obtain information from other sources, including external sources, but the cost accounting system is a major source of management accounting information.

1.3 Qualities of good information

Information is only useful to managers if it possesses certain qualities or attributes.

- ❑ **Understandable**
 - Information should be understandable to the individuals who use it.
 - Accounting information must be set out clearly and are properly explained.
- ❑ **Purpose and relevance**
 - Unless information has a purpose it has no value at all and it makes no sense to provide it.
 - Information must be relevant to this purpose.
- ❑ **Reliable**
 - Users of information must be able to rely on it for its intended purpose.
 - Unreliable information is not useful.
 - Information does not have to be 100% accurate to be reliable. In many cases, information might be provided in the form of an estimate or forecast.
- ❑ **Sufficiently complete**
 - Information should include all information necessary for its purpose.
 - However, information in management reports should not be excessive, because important information may be hidden in the unimportant information, and it will take managers too long to read and understand.
- ❑ **Timeliness**
 - If information is provided too late for its purpose, it has no value.
 - With the widespread computerisation of accounting systems, including cost accounting systems, it might be appropriate for up-to-date management accounting information to be available on line and on demand whenever it is needed.

Comparability

- In accounting it is often useful to make comparisons, such as comparisons of current year results with previous years, or comparisons of actual results with planned results.
- To make comparisons possible, information should be prepared on the same basis, using the same methods and the same 'rules'.

Communicated to the right person

- Management information should be communicated to the proper person.
- This is the person with the authority to make a decision on the basis of the information received and who needs the information to make the decision.

Its value must exceed its cost (Information must be cost effective)

- Management information has a value (if information has no value there is no point in having it) but obtaining it involves a cost.
- The value of information comes from improving the quality of management decisions.
- Information is worth having only if it helps to improve management decisions, and the benefits from those decisions exceed the cost of providing the additional information.

1.4 Purpose of management information

The purpose of management accounting is to provide information for:

- planning;
- control; and
- decision making.

Planning

Planning involves the following:

- setting the objectives for the organisation
- making plans for achieving those objectives.

The planning process is a formal process and the end-result is a formal plan, authorised at an appropriate level in the management hierarchy. Formal plans include long-term business plans, budgets, sales plans, weekly production schedules, capital expenditure plans and so on.

Information is needed in order to make sensible plans – for example in order to prepare an annual budget, it is necessary to provide information about expected sales prices, sales quantities and costs, in the form of forecasts or estimates.

Control

Control of the performance of an organisation is an important management task. Control involves the following:

- ❑ monitoring actual performance, and comparing actual performance with the objective or plan;
- ❑ taking control action where appropriate;
- ❑ evaluating actual performance.

When operations appear to be getting out of control, management should be alerted so that suitable measures can be taken to deal with the problem. Control information might be provided in the form of routine performance reports or as special warnings or alerts when something unusual has occurred.

Decision making

Managers might need to make 'one-off' decisions, outside the formal planning and control systems. Management accounting information can be provided to help a manager decide what to do in any situation where a decision is needed.

2 COST AND MANAGEMENT ACCOUNTING VERSUS FINANCIAL ACCOUNTING

Section overview

- Purpose and role of cost accounting, management accounting and financial accounting
- Comparison of financial accounting and cost and management accounting

2.1 Purpose and role of cost accounting, management accounting and financial accounting

The terms cost accounting and management accounting are often used as having the same meaning. However, there is distinction between the two.

Cost accounting

Cost accounting is concerned with identifying the cost of things. It involves the calculation and measurement of the resources used by a business in undertaking its various activities.

Cost accounting is concerned with gathering data about the costs of products or services and the cost of activities. There may be a formal costing system in which data about operational activities is recorded in a 'double entry' system of cost accounts in a 'cost ledger'. The cost accounting data is captured, stored and subsequently analysed to provide management information about costs.

Cost accounting information is historical in nature, and provides information about the actual costs of items and activities that have been incurred.

Management accounting

Management accounting is concerned with providing information to management that can be used to help run the business.

- The purpose of management accounting is to provide detailed financial information to management, so that they can **plan and control** the activities or operations for which they are responsible.
- Management accounting information is also provided to help managers make other decisions. In other words, management accounting provides management information to assist with planning, control and 'one-off' decisions.

Management accounting includes cost accounting as one of its disciplines but is wider in scope. Management accounting information is often prepared from an analysis of cost accounting data, although cost estimates and revenue estimates may be obtained from sources other than the cost accounting system.

Management accounting may be forward-looking, and used to provide information about expected costs and profits in the future.

Financial accounting

Financial accounting is concerned with providing information about the financial performance of an entity in a given period and the financial position of the entity at the end of that period.

The information is often provided to a wider range of stakeholders (those with an interest in the business) than those who have access to management information. The most important of these are the owners of a business who may not take part in the day to day running of the business.

2.2 Comparison of financial accounting and cost and management accounting

Financial accounting

A financial accounting system is used to record the financial transactions of the entity, such as transactions relating to revenue, expenses, assets and liabilities.

It provides a record of the assets that the company owns, and what it owes and a record of the income that the entity has earned, and the expenditures it has incurred.

The financial accounting system provides the data that is used to prepare the financial statements of the entity at the end of each financial year (the statement of comprehensive income, statement of financial position, statement of cash flows, and so on).

Managers might use the information in the financial statements, but the main purpose of financial reporting is for '**external purposes**' rather than to provide management information. The main purpose of the financial statements of companies is to inform the company's shareholders (owners) about the financial performance and financial position of the company. They are also used as a basis for computation of the tax that the company should pay on its profits.

Financial statements are produced at the end of the financial year. Management need information much more regularly, throughout the year. They also need much more detailed information than is provided by a company's financial statements. They often need forward-looking forecasts, rather than reports of historical performance and what has happened in the past.

There is a statutory requirement for companies to produce annual financial statements, and other business entities need to produce financial statements for the purpose of making tax returns to the tax authorities.

Managers might find financial statements useful, but the main users of the financial statements of a company should be its shareholders. Other external users, such as potential investors, employees, trade unions and banks (lenders to the business) might also use the financial statements of a company to obtain information.

Cost and management accounting

Whereas financial statements from the financial accounting system are intended mainly for external users of financial information, management accounting information (obtained from the cost accounting system) is prepared specifically for internal use by management.

An entity might have a cost accounting system as well as a financial accounting system, so that it has two separate accounting systems in operation. A cost accounting system records the costs and revenues for individual jobs, processes, activities and products or services.

- ❑ Like the financial accounting system, a cost accounting system is based on a double entry system of debits and credits.

- However, the accounts in a cost accounting system are different from the accounts in the financial accounting systems. This is because the two accounting systems have different purposes and so record financial transactions in different ways.

There is no legal requirement for a cost accounting system. Business entities choose to have a cost accounting system, and will only do so if the perceived benefits of the system justify the cost of operating it.

(In business entities where there is no formal cost accounting system, managers still need management accounting information to run their business. Some management accounting information might be extracted from the financial accounting system, but in much less detail than a cost accounting system would provide.)

A comparison of financial and cost accounting systems of companies is summarised in the table below.

Financial accounting system	Cost accounting system
Prepared to meet a legal or regulatory requirement.	Prepared to meet the needs of management.
Used to prepare financial statements for shareholders and other external users. (Might also provide some information for management but this is not their primary purpose).	Used to prepare information for management (internal use only).
Content usually specified by a regulatory framework.	Content specified by the management of a company.
Prepared within a time frame specified by a legal or regulatory framework.	Prepared within a time frame specified by management.
Records revenues, expenditure, assets and liabilities.	Records costs of activities and used to provide detailed information about costs, revenues and profits for specific products, operations and activities.
Used mainly to provide a historical record of performance and financial position.	Provides historical information, but also used extensively for forecasting (forward-looking).

3 INTRODUCTION TO COSTS

Section overview

- Types of organisation
- Cost classification: Introduction

3.1 Types of organisation

The following classification of organisations is useful for the purpose of learning about costs:

- Manufacturing organisations: and
- Service organisations.

Manufacturing organisations

There are a great many different kinds of manufacturing organisations. They can be classified by their type of output which in turn implies the type of costing system they might use.

Type of production	Examples	Costing system
Identical (similar) products in large numbers	Bottles of soft drink Mobile phones Garments	Basic manufacturing costing Standard costing
Identical products in large amounts by passing the product through a series of processes	Pharmaceuticals Paint Petroleum	Process costing (including joint product and by-product costing)
Identical products in large numbers customised in some way for different customers	Aircraft (which may vary in internal fit and external painting) Own-brand foods for supermarkets	Job costing
One-off products to a customer's specification	Ships Airport facilities Roads Bridges	Job costing

Service organisations

Similar to the manufacturing industry there are a great many different kinds of service organisations. For example:

- Training and education
- Healthcare
- Travel and tourism
- Financial services
- Entertainment and leisure

One of the key differences between manufacturing and service industries is the perishability of product – manufacturing output is generally tangible and can be stored whereas output from the service industry is generally perishable. The service is normally consumed at the time of delivery (production). For example, a patient visiting a doctor consumes the consultation as it is given.

However, some work-in-progress (WIP) may be recorded – for example an accountant who has spent 10 hours working on a tax advice project that will take 20 hours in total to complete. The first 10 hours would be described as WIP.

Costing systems typically used in service organisations include:

- Standard costing
 - For example the standard cost of delivering a doctor’s consultation, the standard cost of a package holiday, the standard cost of a flight between Karachi and London
- Job costing
 - For example bespoke consultation projects in the financial services industry or the cost of an architect designing a ship
 - The professional will usually apply a standard hourly rate whilst the total number of hours on each job varies

The need to know about costs

All organisations need to understand their costs.

An organisation needs to know:

- how much it costs to make the products that it produces, or
- how much it costs to provide its services to customers.

For an organisation that is required to make a profit, it is important to know the cost of items in order to:

- make sure that the product or service is sold at a profit;
- measure the actual profit that has been made; and
- in the case of some companies, such as manufacturing companies, value inventory at the end of each accounting period.

For an organisation that is not required to make a profit (a ‘not-for-profit organisation’, such as a government department, state-owned agency or charity), it is important to know how much items cost, in order to:

- control the entity;
- measure to what extent it is achieving its objectives; and
- plan expenditure for the future.

Terminology



Definitions: Cost object

Cost object: Any activity for which a separate measurement of costs is needed

Examples of cost objects include:

- The cost of a product
- The cost of a service
- The cost of a department
- The cost of a project



Definitions: Cost unit

Cost unit: A unit of product or service for which costs are determined

A cost unit is the basic unit of production for which costs are being measured.

The term cost unit should not be confused with the term unit cost.



Definitions: Unit cost

Unit cost is the cost incurred by a company to produce, store and sell one unit of a particular product.

Unit cost includes all fixed costs and all variable costs involved in production

Cost objects and cost units should be selected so as to provide management with the cost information they require.

Here are some examples of cost objects and cost units

Industry/activity	Cost object	Cost unit
Car manufacture	Cars produced	A car
Bakery	Bread produced	A batch of bread items
Steel works	Steel produced	Tonne of steel
Carpet manufacture	Carpets produced	Square metre of carpet
Retail operation	Cost of items sold	An item
Passenger transport service	Cost of transporting customers	Cost per passenger/mile (i.e. average cost of transporting a passenger one mile)
Road haulage	Cost of transporting items	Cost per tonne/mile (i.e. average cost of carrying one tonne of items for one mile)
University	Cost of teaching	Cost per student



Example

A company manufactures tinned foods.

It has two products, tinned carrots and tinned beans. In its costing system, it has two cost objects, carrots and beans.

	Cost object	Cost unit
1	Carrots	Production cost per tin of carrots
2	Beans	Production cost per tin of beans

**Example:**

A transport company has a bus depot.

The company has a cost accounting system that records and measures the cost of operating the bus depot.

The costs of operating the depot are measured in three ways, as follows:

	Cost object	Cost unit
1	Buses	Operating cost per bus per month
2	Bus routes	Operating cost per month for each bus route
3	Bus drivers	Cost of operating the depot per month, per bus driver employed

3.2 Cost classification: Introduction

Costs can be classified in a number of ways including:

- ❑ Type of cost (material, labour, other expenses);
- ❑ Function of the cost:
 - Production
 - Non-production
 - Selling
 - Distribution
 - Administration
 - Finance
- ❑ Cost behaviour – i.e. how the cost varies at different levels of activity:
 - costs may stay constant at different levels of activity - fixed costs; or
 - costs may stay vary at different levels of activity – variable costs
- ❑ Whether the cost can be directly attributed to units of production.
- ❑ Whether a cost is recognised in this period (period cost) or is carried forward as part of the inventory valuation (product cost).

Each of these will be explained in turn but before that note that the above classifications are not mutually exclusive.

**Illustration:**

A car maker uses steel:

Steel is material.

Steel is a production cost (you cannot make a car without using steel).

Steel is a cost which varies with the number of cars produced.

Steel can be directly attributable to a car.

Steel is a product cost.

4 COST CLASSIFICATION BY TYPE AND FUNCTION

Section overview

- Cost classification by type
- Cost classification by function
- Production or non-production?
- Usefulness of classifying costs by function
- The importance of separating production and non-production costs
- Reporting profit

4.1 Cost classification by type

Material costs

Material costs are the costs of any material items purchased from suppliers, with the intention of using them or consuming them in the fairly short-term future.

In a manufacturing company, material costs include the cost of the raw materials that go into producing the manufactured output.

In an office, costs of materials consumed include the costs of stationery and replacement printer cartridges for the office laser printers.

Labour costs

Labour costs are the remuneration costs of all employees employed and paid by the entity. This includes the wages and salaries of part-time workers and the costs of any bonuses, pension contributions and other items that are paid in addition to basic wages and salaries.

Other expenses

Other expenses include the costs of any items that are not material costs or labour costs. They include the cost of services provided by external suppliers (the charges made by sub-contractors, charges for repairs by external contractors, rental costs, telephone costs, insurance costs, costs of energy (gas, electricity), travelling and subsistence expenses, and depreciation charges for non-current assets).

In a cost accounting system, all these items of cost must be recorded, and there needs to be an organised system for recording them. Cost items need to be grouped into categories of similar costs.

4.2 Cost classification by function

A manufacturing company would classify costs according to their function: categorised as either:

- production costs (manufacturing costs); and
- non-production costs (non-manufacturing costs).

Production costs

Production costs are the costs incurred in manufacturing finished products, up to the time that the manufacture of the goods is completed, and the goods are either transferred to the finished goods inventory or delivered immediately to the customer.

Production costs include:

- the material cost of the raw materials and components, purchased from suppliers and used in the production of the goods that are manufactured
- the labour cost of all employees working for the manufacturing function, such as machine operators, supervisors, factory supervisors and the factory manager
- other expenses of the factory, such as rental costs for the factory building, energy costs and the cost of depreciation of factory machinery.

Non-production costs

Non-production costs are any items of cost that are not production costs.

Non-production costs can be further classified according to their function as:

- selling costs;
- distribution costs;
- administrative costs;
- finance costs.

Administration costs

Administration costs are the costs of providing administration services for the entity. They might be called 'head office costs' and usually include the costs of the human relations department and accounting department. They should include:

- the salary costs of all the staff working in the administration departments
- the costs of the office space used by these departments, such as office rental costs
- other administration expenses, such as the costs of heating and lighting for the administration offices, the depreciation costs of equipment used by the administration departments, fees paid to the company's solicitors for legal services, costs of office stationery and so on.

Selling and distribution costs (marketing costs)

Selling and distribution costs are the costs incurred in marketing and selling goods or services to customers, and the costs of delivering the goods to customers. The costs of after-sales services, such as customer support services, are usually included in these costs. Sales and distribution costs include:

- ❑ the wages and salary costs of all employees working in the selling and distribution departments, including sales commissions for sales representatives
- ❑ advertising costs and other marketing costs
- ❑ operating costs for delivery vehicles (for delivering finished goods to customers), such as fuel costs and vehicle repair costs
- ❑ other costs, including depreciation costs for the delivery vehicles.

Finance costs

Finance costs include costs that are involved in financing the organisation, for example, loan interest or bank overdraft charges.

Finance costs might be included in general administration costs. Alternatively, finance costs might be excluded from the cost accounting system because they are relevant to financial reporting (and the financial accounting system) but are not relevant to the measurement of costs.

4.3 Production or non-production?

Some costs might be partly production costs, partly administration costs and partly sales and distribution costs. For example:

- ❑ The salary of the managing director, because the managing director spends time on all aspects of the company's operations.
- ❑ Building rental costs, when the same building is used by more than one function. For example administration staff and sales staff might share the same offices.

When costs are shared between two or more functions, they are divided between the functions on a fair basis.

For example, the salary of the managing director might be divided equally manufacturing costs, administration costs and sales and distribution costs.

Dividing shared costs on a fair basis is called **apportionment** of the cost.



Practice question

1

A company uses three categories of functional cost in its cost accounting system. These are manufacturing costs, administration costs and sales and distribution costs.

Identify the functional cost category for each of the following costs:

- 1 Salary of the chief accountant
- 2 Telephone charges
- 3 Cost of office cleaning services
- 4 Cost of warehouse staff

4.4 Usefulness of classifying costs by function

Separating costs into the costs for each function can provide useful information for management.

Functional costs show managers what they are expected to spend on each function (budgeted costs) and how much they are actually spending.



Example:

Functional costs might be used in an income statement to report the profit or loss of a company during a financial period, as follows:

	Rs m	Rs m
Sales revenue		600
Manufacturing cost of sales		<u>200</u>
Gross profit		400
Administration costs	120	
Selling and distribution costs	<u>230</u>	
Net profit (or net loss)		<u><u>350</u></u> <u>50</u>

4.5 The importance of separating production and non-production costs

Inventory

It is important to separate production costs from non-production costs in a manufacturing business for the purpose of valuing closing inventory which will consist of:

- finished goods that have been produced during the financial period but not yet sold (finished goods inventory); and
- partly finished production (work-in-progress or WIP).

The costs of finished goods and work-in-progress consist of their production costs.

Total production costs during a period must therefore be divided or shared between:

- goods produced and sold in the period;
- goods produced but not yet sold (finished goods);
- work-in-progress.

Non-production costs are **never** included in the cost of inventory.

4.6 Reporting profit

Profit is the revenue for a financial period minus the costs for the period. The profit or loss earned during a financial period is reported in a statement of comprehensive income (also known as an income statement).

In most financial accounting examples the cost of sales figure is built from purchases as adjusted by inventory movement.

It is comprised of the cost of goods made (instead of purchases) as adjusted by finished goods inventory movement. The cost of goods made is a more complex figure than purchases. It comprises direct materials used, direct labour and production overheads adjusted by movement in work in progress in the year. It is often constructed in a manufacturing account. The total from this account feeds into the statement of comprehensive income.

**Illustration: Manufacturing account**

	Rs.	Rs.
Raw materials		
Opening inventory		25,000
Purchases		150,000
		<u>175,000</u>
Less: Closing inventory		(20,000)
Raw materials consumed		<u>155,000</u>
Manufacturing wages		100,000
Prime cost		<u>255,000</u>
Overheads		
Light and power	72,000	
Depreciation of production machinery	40,000	
Depreciation of factory	50,000	
		<u>162,000</u>
Manufacturing costs		<u>417,000</u>
Opening work in progress		85,000
Closing work in progress		(95,000)
Cost of goods made		<u>407,000</u>

The cost of goods made is transferred to the statement of comprehensive income.

**Illustration: Statement of comprehensive income to show transfer of cost of goods made.**

	Rs.	Rs.
Sales revenue		800,000
Less cost of goods sold		
Opening inventory of finished goods	50,000	
Cost of goods made	<u>407,000</u>	
		<u>457,000</u>
Closing inventory of finished goods)	(40,000)	
Cost of sales		<u>(417,000)</u>
Gross profit		<u>383,000</u>
Administration costs	86,000	
Selling and distribution costs	94,000	
		<u>(180,000)</u>
Net profit for the period		<u>203,000</u>

5 FIXED AND VARIABLE COSTS

Section overview

- Cost behaviour
- Fixed costs
- Variable costs
- Semi-variable costs
- Stepped costs

5.1 Cost behaviour

Cost behaviour refers to the way in which costs change as the volume of activity changes. The volume of activity may be:

- the volume of sales;
- the volume of production;
- total labour hours worked, machine hours worked;
- the number of production units inspected;
- the number of journeys (for buses or trains) or deliveries, and so on.

As a general rule, total costs are expected to increase as the volume of activity rises.

Management might want information about estimated costs, or about what costs should have been. An understanding of cost behaviour is necessary in order to:

- forecast or plan what costs ought to be; and
- compare actual costs that were incurred with what the costs should have been.

The most important classification of costs for the purpose of cost estimation is the division of costs into fixed costs or variable costs.

5.2 Fixed costs

Fixed costs are items of cost that remain the same in total during a time period, no matter how many units are produced, and regardless of the volume or scale of activity.

Fixed costs might be specified for a given period of time. In such cases the fixed costs for a longer period would be scaled up.

Examples of fixed costs include:

- The rental cost of a building is Rs.40,000 per month. The rental cost is fixed for a given period: Rs.40,000 per month, or Rs.480,000 per year.
- The salary costs of a worker who is paid Rs.11,000 per month. The fixed cost is Rs.11,000 per month or Rs.132,000 per year.

Note that as activity levels increase the cost remains fixed. However, the cost per unit falls because the cost is being spread over a greater number of units.

5.3 Variable costs

Variable costs are costs that increase, usually by the same amount, for each additional unit of product that is made or each additional unit of service that is provided.

The variable cost of a cost unit is also called the marginal cost of the unit.

The variable cost per unit is often the same amount for each additional unit of output or unit of activity.

This means that total variable costs increase in direct proportion to the total volume of output or activity.

Examples of variable cost items.

- ❑ The cost of buying raw material is Rs.500 per litre regardless of purchase quantity. The variable cost is Rs.500 per litre:
 - the total cost of buying 1,000 litres is Rs.500,000
 - the total cost of buying 2,000 litres would be Rs.1,000,000.
- ❑ The rate of pay for hourly-paid workers is Rs.150 per hour.
 - 400 hours of labour would cost Rs.60,000; and
 - 500 hours would cost Rs.75,000.
- ❑ The time needed to produce an item of product is 4 minutes and labour is paid Rs.150 per hour.
 - direct labour is a variable cost and the direct labour cost per unit produced is Rs.10 (= Rs.150 × 4/60).
- ❑ The cost of telephone calls is Rs.1 per minute.
 - The cost of telephone calls lasting 6,000 minutes in total would be Rs.6,000.

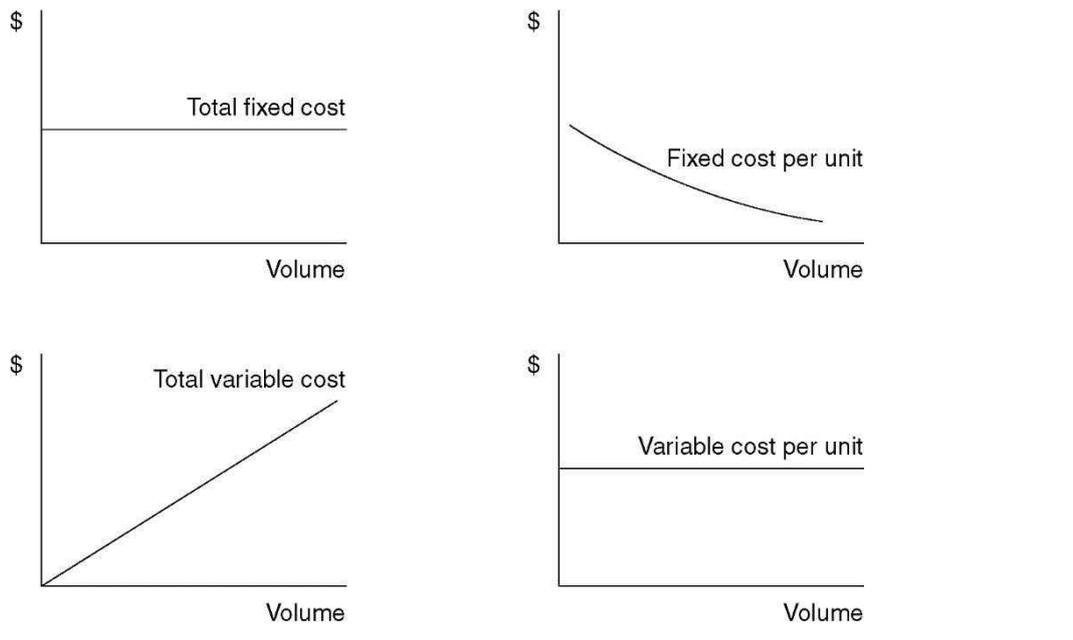
Note that as activity levels increase the cost per unit remains fixed. However, the total cost increases as more units are being made.

Cost behaviour graphs: fixed and variable costs

Cost behaviour for items of cost (or for costs in total) can be shown graphically either showing the total cost incurred at different activity levels or the cost per item at different activity levels.



Illustration: Cost behaviour graphs for fixed costs and variable costs

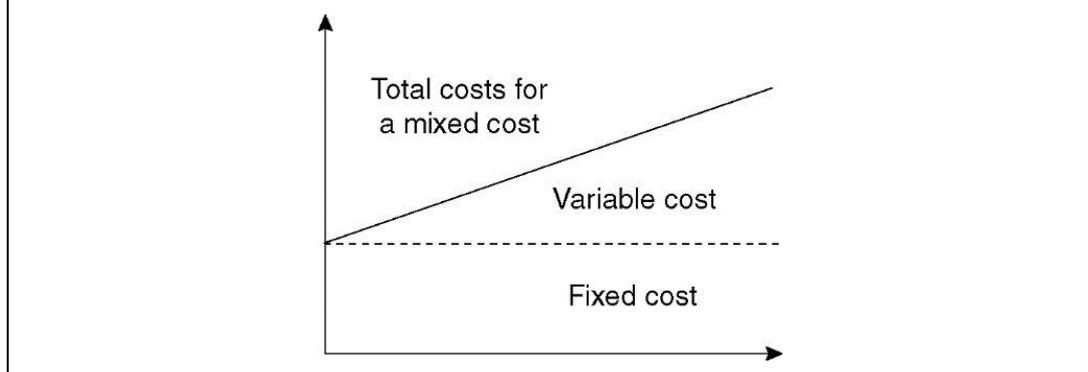


5.4 Semi-variable costs

A semi-variable cost, is a cost that is partly fixed and partly variable. A cost behaviour graph showing the total costs for an item of mixed cost is shown below.



Illustration: Semi variable cost



An item of cost that is a mixed cost is an item with a fixed minimum cost per period plus a variable cost for every unit of activity or output.

**Example:**

A company uses a photocopier machine under a rental agreement. The photocopier rental cost is Rs.4,000 per month plus Rs.2 per copy produced.

The company makes 15,000 copies during a month:

Total cost is as follows:

	Rs.
Fixed cost	4,000
Variable cost (15,000 × Rs. 2)	30,000
	34,000

Mixed costs are important in cost and management accounting. It is often assumed that the total costs of an activity are mixed costs, consisting partly of fixed costs and partly of variable costs.

For example, it might be assumed that the total selling and distribution costs for a company each month are mixed costs. If this assumption is used, the total mixed costs can be divided into two separate parts, fixed costs and variable costs.

If costs can be analysed as a fixed amount of cost per period plus a variable cost per unit, estimating what future costs should be, or what actual costs should have been, becomes fairly simple.

**Example:**

The management accountant of a manufacturing company has estimated that production costs in a factory that manufactures Product Y are fixed costs of Rs.250,000 per month plus variable costs of Rs.30 per unit of Product Y output.

The expected output next month is 120,000 units of Product Y.

Expected total costs are therefore:

	Rs.
Variable costs (120,000 × Rs.30)	3600,000
Fixed costs	250,000
	3,850,000

5.5 Stepped cost

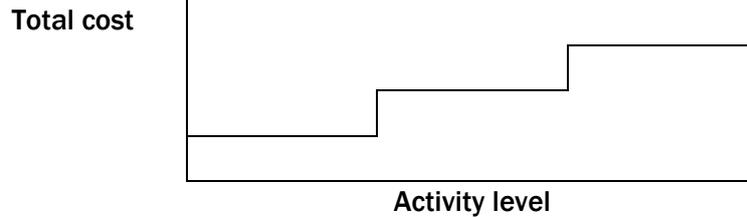
A **stepped fixed cost** is a cost which:

- ❑ has a fixed cost behaviour pattern within a limited range of activity, and
- ❑ goes up or down in steps when the volume of activity rises above or falls below certain levels.

On a cost behaviour graph, step fixed costs look like steps rising from left to right.



Illustration:



Example:

A company might pay its supervisors a salary of Rs. 20,000 each month.

When production is less than 2,000 hours each month, only one supervisor is needed:

When production is between 2,001 and 4,000 hours each month, two supervisors are needed.

When output is over 4,000 hours each month, three supervisors are needed.

The cost profile is as follows:

Activity level:	Rs.
2,000 hours or less (1 × Rs. 20,000)	20,000
2,001 to 4,000 (2 × Rs. 20,000)	40,000
Over 4,000 (3 × Rs. 20,000)	60,000

The supervision costs are fixed costs within a certain range of output, but go up or down in steps as the output level rises above or falls below certain levels.



Practice questions

2

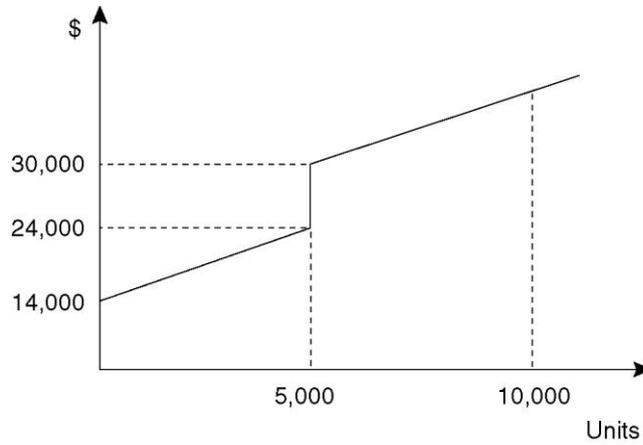
On the axes provided, on which the vertical axis denotes cost and the horizontal axis the appropriate level of activity, show the following cost behaviour graphs:

- (a) Fixed costs
- (b) Variable costs
- (c) Semi-variable costs
- (d) Annual rates bill
- (e) Direct labour cost
- (f) Annual telephone bill
- (g) Direct materials cost if bulk discount is offered on all purchases once the total purchased exceeds a certain level
- (h) Supervisory costs
- (i) Labour costs if staff are paid a fixed weekly wage for a 35-hour week and any additional production is completed in overtime, when staff are paid time and a half.

<p>(a)</p> 	<p>(b)</p> 	<p>(c)</p> 
<p>(d)</p> 	<p>(e)</p> 	<p>(f)</p> 
<p>(g)</p> 	<p>(h)</p> 	<p>(i)</p> 

**Practice questions****3**

- 1** From the information in this cost behaviour graph, describe the behaviour of this item of cost, and calculate the total cost at 10,000 units of output.



6 DIRECT AND INDIRECT COSTS

Section overview

- Introduction
- Direct costs
- Indirect costs (overheads)
- Full cost

6.1 Introduction

Costs may also be classified as:

- direct costs; or
- indirect costs (also known as overheads).

There are direct and indirect material costs, direct and indirect labour costs and direct and indirect expenses.

6.2 Direct costs



Definition: Direct costs

Direct costs: Costs that can be traced in full to a cost unit.

A direct cost can be attributed in its entirety to the cost of an item that is being produced.

For example, in a manufacturing company that produces television sets, the direct cost of making a television consists of direct materials and direct labour costs, and possibly some direct expenses.

- The direct materials cost is the cost of the raw materials and components that have gone into making the television.
- The direct labour cost is the cost of the labour time of the employees who have been directly involved in making the television.

Direct materials



Definition: Direct materials

Direct materials are all materials that become part of the cost unit.

Direct materials are all materials that can be attributed directly in full to a cost unit.

They are used directly in the manufacture of a product or in providing a service.

Direct materials may consist of either or both:

- ❑ **raw materials**, such as glass, metals and chemicals
- ❑ **components** purchased from an external supplier: for example the direct materials of a car manufacturer include components purchased from other suppliers, such as windows, wheels and tyres.

Examples of direct materials include:



Example: Direct materials

Cost unit	Direct materials
Pair of shoes	Leather, glue, nails, laces
Office chair	Wheels, a stand, a seat (with seat cushion), back rest, arm rests and fabric
Restaurant meal	Ingredients
Car	Steel, aluminium, windows, lights, gear box, engine, wheels etc. etc.
House	Bricks, wood, cement

Services might also incur some direct materials costs. For example, with catering and restaurant services the direct materials include the major items of food (and drink).

Direct labour



Definition: Direct labour

Direct labour is labour time that can be attributed directly in full to a cost unit.

Direct labour costs are the specific costs associated with the labour time spent directly on production of a good or service.

Labour costs are direct costs for work done by direct labour employees. Direct labour employees are employees whose time is spent directly on producing a manufactured item or service.



Example: Direct labour employees

Cost unit	Direct labour
Car	Machinists working in the machining department Assembly workers in the assembly department Workers in the spray painting shop
House	Bricklayers are direct labour employees of a house-building firm
Tonne of coal	Miners

Direct labour costs also include the cost of employees who directly provide a service.



Example: Direct labour employees (service industry).

Cost unit	Direct labour
Day of storage	Warehouse staff
Audit (other consultancy product)	Professional staff
Teaching day	Teachers (tutorial staff at a college)

Direct expenses



Definition: Direct expenses

Direct expenses are expenses that can be attributed directly in full to a cost unit.

Direct expenses are expenses that have been incurred in full as a direct consequence of making a unit of product, or providing a service, or running a department.

In manufacturing, direct expenses are not common for manufactured units of output, and direct costs normally consist of just direct materials and direct labour costs.



Example: Direct expenses

Cost unit	Direct expense
A house	Hire of equipment (for example a cement mixer) Payment of fees to sub-contractors.

Prime cost

The prime cost of an item is its total direct cost.



Definition: Prime cost

The prime cost of a cost unit is the sum of all of the direct costs of making that unit.



Illustration: Prime cost

	Rs.	
Direct material cost	X	
Direct labour cost	X	
Direct expenses	X	
Prime cost	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-top: 1px solid black;">X</td> </tr> </table>	X
X		

6.3 Indirect costs (overheads)



Definition: Indirect cost

An indirect cost (overhead cost) is any cost that is not a direct cost.

Indirect costs (overheads) cannot be attributed directly and in full to a cost unit.

Indirect costs include production overheads and non-production overheads. Each of these might include indirect materials costs, indirect labour costs and indirect expenses costs.

Indirect material costs

Indirect materials are any materials that are used or consumed that cannot be attributed in full to the item being costed. Indirect materials are treated as an overhead cost, and may be classified as production overheads, administration overheads or sales and distribution overheads.

Indirect materials in production include cleaning materials and any materials used by production departments or staff who are not engaged directly in making a product.

Indirect production materials may also include some items of materials that are inexpensive and whose cost or value is immaterial. These may include nails, nuts and bolts, buttons and thread, and so on. The effort of measuring a cost for these materials is not worth the value of the cost information that would be produced; therefore these 'direct' materials are often treated as indirect materials.



Practice question

4

In which of the following types of company would fuel costs be treated as a direct material cost?

- 1 Manufacturing company
- 2 Road haulage (road transport) company
- 3 Construction company
- 4 Motorway fuel station

Indirect labour costs

Indirect labour costs consist mainly of the cost of indirect labour employees. Indirect labour employees are individuals who do not work directly on the items that are produced or the services that are provided.

Some factory workers do not work directly in the production of cost units but are necessary so that production takes place. In a manufacturing environment, indirect labour employees include staff in the stores and materials handling department (for example, fork lift truck drivers), supervisors, and repairs and maintenance engineers.

All employees in administration departments and marketing departments (sales and distribution staff) – including management – are normally indirect employees.

Indirect expenses

Many costs incurred cannot be directly linked to cost units.

For example, the rental costs for a factory and the costs of gas and electricity consumption for a factory cannot be attributed in full to any particular units of production. They are indirect production costs (production overheads).

In a manufacturing company, all costs of administration are usually treated as indirect costs (administration overheads) and all or most sales and distribution costs are also usually treated as sales and distribution overheads.

6.4 Full cost

The full cost of a unit of product (or the full cost of a unit of service) is a cost that includes both direct costs and some overheads. The full cost of a unit of product might be analysed as follows:



Illustration: Full cost

	Rs.
Direct materials cost	X
Direct labour cost	X
Direct expenses	X
Prime cost	<u>X</u>
Manufacturing overhead (or production overhead)	X
Full production cost	<u>X</u>
Non-production costs	
Administration overhead	X
Selling and distribution overhead	X
Full cost of sale	<u>X</u>

Notes:

- 1 Prime cost plus a share of production overheads are the full production cost or 'fully absorbed production cost' of the cost unit.
- 2 In cost accounting systems, it is common practice to include production overheads in unit costs and measure the full production cost per unit. However, administration and selling and distribution overhead costs are not usually included in the cost of each unit. Instead, they are treated in total as an expense for the period ('period costs' – see below).

7 PRODUCT COSTS AND PERIOD COSTS

Section overview

- Product costs and period costs

7.1 Product costs and period costs

Costs are typically classified as either product costs or period costs when preparing financial statements.



Definition: Product cost

Product costs are costs associated with goods that are produced or purchased for resale.

Product costs are accounted for as inventory and held on the balance sheet (subject to accounting valuation rules) until the inventory is sold. Only when the inventory is sold are product costs expensed in the profit and loss account.

Product costs include the prime cost (direct materials + direct labour + direct expenses) plus the production overhead.



Definition: Period cost

Period costs are costs that are deducted as expenses during a particular period. They do not contribute towards the value of inventory and are therefore not held on the balance sheet. They are therefore expensed when they occur – i.e. in the period in which they occurred.

Period costs are the non-production overheads

In summary then

- product costs** are expensed when the inventory is sold
- period costs** are expensed as soon as they are incurred



Example: A retailer

A retailer owns a shop, employs a shop assistant, invests in sales and advertising and acquires goods for resale.

The cost of goods purchased for resale is product costs and accounted for as inventory. These are only expensed when the goods are sold (which may be in a subsequent accounting period).

The sales and advertising costs and the salary of the shop assistant are period costs which are expensed immediately in the accounting period in which they were incurred. Note that the salary of the shop assistant would be called an administration expense.

8 COST ESTIMATION: HIGH/LOW METHOD

Section overview

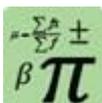
- Cost estimation: analysing fixed and variable costs
- High/low analysis
- High/low analysis when there is a step change in fixed costs
- High/low analysis when there is a change in the variable cost per unit

8.1 Cost estimation: analysing fixed and variable costs

Earlier sections explained that the importance of semi-variable costs in accounting.

The total costs associated with a business (or a part of a business, for example a production line) are the sum of the fixed costs and the variable costs. In other words, the total is semi variable in nature.

If total costs can be divided into fixed costs or variable costs per unit of output or unit of activity, a formula for total costs is:



Formula: Total costs

$$y = a + bx$$

Where:

y = total costs in a period

x = the number of units of output or the volume of activity in the period

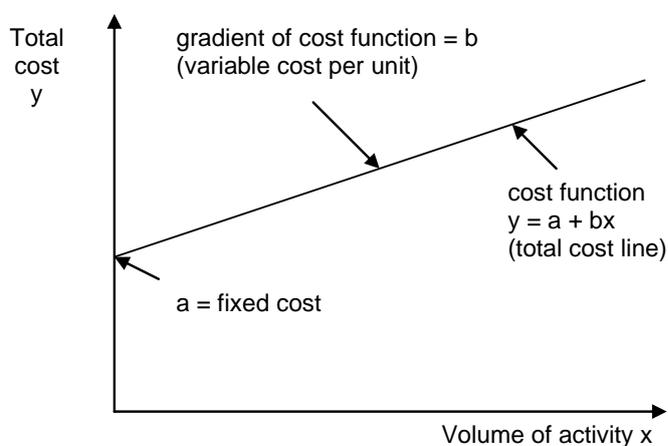
a = the fixed costs in the period

b = the variable cost per unit of output or unit of activity.

The linear cost function equation $y = a + bx$ can be drawn on a cost behaviour graph as follows.



Illustration: Linear total cost function



The total cost function can be used to estimate costs associated with different levels of activities. This is very useful in forecasting and decision making.

There are two methods of constructing the total cost function equation:

- high/low analysis
- linear regression analysis.

8.2 High/low analysis

High/low analysis can be used to estimate fixed costs and variable costs per unit whenever:

- there are figures available for total costs at two different levels of output or activity;
- it can be assumed that fixed costs are the same in total at each level of activity; and
- the variable cost per unit is constant at both levels of activity.

High/low analysis uses two historical figures for cost:

- the highest recorded output level, and its associated total cost
- the lowest recorded output level, and its associated total cost.

It is assumed that these 'high' and 'low' records of output and historical cost are representative of costs at all levels of output or activity.

The difference between the total cost at the high level of output and the total cost at the low level of output is entirely variable cost. This is because fixed costs are the same in total at both levels of output.

The method

Step 1: Take the activity level and cost for:

- the highest activity level
- the lowest activity level

Step 2: The variable cost per unit can be calculated as:

$$\frac{\text{difference in total costs}}{\text{difference in the number of units}}$$

Step 3: Having calculated a variable cost per unit of activity, fixed cost can be calculated by substitution into one of the cost expressions. The difference between the total cost at this activity level and the total variable cost at this activity level is the fixed cost.

Step 4: Construct the total cost function.

This is best seen with an example.



Example: High/low method

A company has recorded the following costs in the past six months:

Month	Production (units)	Total cost (Rs.)
January	5,800	40,300
February	7,700	47,100
March	8,200	48,700
April	6,100	40,600
May	6,500	44,500
June	7,500	47,100

Step 1: Identify the highest and lowest activity levels and note the costs associated with each level.

	Production (units)	Total cost (Rs.)
March	8,200	48,700
January	5,800	40,300

Step 2: Compare the different activity levels and associated costs and calculate the variable cost:

	Production (units)	Total cost (Rs.)
March	8,200	48,700
January	5,800	40,300
	2,400	8,400

Therefore: 2,400 units cost an extra Rs. 8,400.

Therefore: The variable cost per unit = $\text{Rs. } 8,400 / 2,400 \text{ units} = \text{Rs. } 3.5 \text{ per unit}$

Step 3: Substitute the variable cost into one of the cost functions (either high or low).

Total cost of 8,200 units:

$$\text{Fixed cost} + \text{Variable cost} = \text{Rs. } 48,700$$

$$\text{Fixed cost} + 8,200 \times \text{Rs. } 3.5 = \text{Rs. } 48,700$$

$$\text{Fixed cost} + \text{Rs. } 28,700 = \text{Rs. } 48,700$$

$$\text{Fixed cost} = \text{Rs. } 48,700 - \text{Rs. } 28,700 = \text{Rs. } 20,000$$

Step 4: Construct total cost function

$$\text{Total cost} = a + bx = 20,000 + 3.5x$$

Note that at step 3 it does not matter whether the substitution of variable cost is into the high figures or the low figures.



Example: Cost of other levels of activity

Returning to step 3 above but this time substituting into the low figures.

Step 3: Substitute the variable cost into one of the cost functions (either high or low).

Total cost of 5,800 units:

$$\text{Fixed cost} + \text{Variable cost} = \text{Rs. } 40,300$$

$$\text{Fixed cost} + 5,800 \times \text{Rs. } 3.5 = \text{Rs. } 40,300$$

$$\text{Fixed cost} + \text{Rs. } 20,300 = \text{Rs. } 40,300$$

$$\text{Fixed cost} = \text{Rs. } 40,300 - \text{Rs. } 20,300 = \text{Rs. } 20,000$$

Once derived, the cost function can be used to estimate the cost associated with other levels of activity.



Example: High/low method

The company is planning to make 7,000 units and wishes to estimate the total costs associated with that level of production.

$$\text{Total cost} = 20,000 + 3.5x$$

$$\text{Total cost of 7,000 units} = 20,000 + 3.5 \times 7,000 = \text{Rs. } 44,500$$


Practice questions
5

- 1** A manufacturing company has budgeted to operate for 110,500 hours in the year, which is 85% capacity. Expected total costs for the year are Rs.615,200.

The management accountant has also estimated that at 100% capacity, total annual costs would be Rs.662,000.

Required

Using high/low analysis, estimate the variable cost per hour worked and the total annual fixed costs.

- 2** Entity Z is trying to obtain a cost estimate for the costs of repairs. The following monthly repair costs have been recorded for the past six months.

Month	Number of machines repaired	Cost of repairs Rs.
1	38	31,000
2	41	32,700
3	25	26,500
4	21	23,600
5	36	29,900
6	32	28,900

Required

Use high/low analysis to estimate the fixed costs of repairs each month and the variable cost per machine repaired.

Estimate the expected costs of repairs in a month when 30 machines are repaired.

8.3 High/low analysis when there is a step change in fixed costs

High/low analysis can also be used when there is a step increase in fixed costs between the 'low' and the 'high' activity levels, provided that the amount of the step increase in fixed costs is known.

If the step increase in fixed costs is given as a money amount, the total cost of the 'high' or the 'low' activity level should be adjusted by the amount of the increase, so that total costs for the 'high' and 'low' amounts use the same fixed cost figure. After this adjustment the difference between the high and low costs is solely due to variable cost. The variable cost can be identified and cost functions constructed for each side of the step.

The method

Step 1: Take the activity level and cost for:

- the highest activity level
- the lowest activity level.

Step 2: Make an adjustment for the step in fixed costs;

- add the step in fixed costs to the total costs of the lower level of activity; or
- deduct the step in fixed costs from the total costs of the higher level of activity.

Step 3: The variable cost per unit can be calculated as:

$$\frac{\text{difference in total costs}}{\text{difference in the number of units}}$$

Step 4: Having calculated a variable cost per unit of activity, fixed cost can be calculated by substitution into one of the cost expressions. (use the unadjusted pair).

Step 5: Construct the total cost function of the unadjusted level.

Step 6: Construct the total cost function for the adjusted level by reversing the adjustment to its fixed cost.

This is best seen with an example.


Example: High/low method with step in fixed costs

A company has identified that total fixed costs increase by Rs.15,000 when activity level equals or exceeds 19,000 units. The variable cost per unit is constant over this range of activity.

The company has identified the following costs at two activity levels. (Step 1)

	Production (units)	Total cost (Rs.)
High	22,000	195,000
Low	17,000	165,000

Step 2: Make an adjustment for the step in fixed costs.

	Production (units)	Total cost (Rs.)
High	22,000	195,000
Low (165,000 + 15,000)	17,000	180,000

Step 3: Compare the different activity levels and associated costs and calculate the variable cost:

	Production (units)	Total cost (Rs.)
High	22,000	195,000
Low	17,000	180,000
	5,000	15,000

Therefore: 5,000 units cost an extra Rs. 15,000.

Therefore: The variable cost per unit = $\text{Rs. } 15,000 / 5,000 \text{ units} = \text{Rs. } 3 \text{ per unit}$

Step 4: Substitute the variable cost into one of the cost functions (either high or low).

Total cost of 22,000 units:

$$\text{Fixed cost} + \text{Variable cost} = \text{Rs. } 195,000$$

$$\text{Fixed cost} + 22,000 \times \text{Rs. } 3 = \text{Rs. } 195,000$$

$$\text{Fixed cost} + \text{Rs. } 66,000 = \text{Rs. } 195,000$$

$$\text{Fixed cost} = \text{Rs. } 195,000 - \text{Rs. } 66,000 = \text{Rs. } 129,000$$

Step 5: Construct total cost function (unadjusted level) above 19,000 units

$$\text{Total cost} = a + bx = 129,000 + 3x$$

Step 6: Construct total cost function below 19,000 units

$$\text{Total cost} = a + bx = (129,000 - 15,000) + 3x$$

$$\text{Total cost} = a + bx = 114,000 + 3x$$

The cost functions can be used to estimate total costs associated with a level as appropriate.

**Example: High/low method**

The company is planning to make 20,000 units and wishes to estimate the total costs associated with that level of production.

$$\text{Total cost} = 129,000 + 3x$$

$$\text{Total cost of 20,000 units} = 129,000 + 3 \times 20,000 = \text{Rs. } 189,000$$

The step increase in fixed costs is given as a percentage amount

When the step change in fixed costs between two activity levels is given as a percentage amount, the problem is a bit more complex.

The costs associated with a third activity level must be found. This activity level could be either side of the activity level that triggers the step increase in fixed costs. This means that there are two activity levels which share the same fixed cost (though it is unknown). These can be compared to identify the variable cost.

The fixed cost at any level can then be calculated by substitution and the fixed cost the other side of the step can be calculated from the first fixed cost.


Example: High/low method with step in fixed costs

A company has identified that total fixed costs increase by 20% when activity level equals or exceeds 7,500 units. The variable cost per unit is constant over this range of activity.

The company has identified the following costs at three activity levels. (Step 1)

	Production (units)	Total cost (Rs.)
High	11,000	276,000
Middle	8,000	240,000
Low	5,000	180,000

Step 2: Choose the pair which is on the same side as the step.

	Production (units)	Total cost (Rs.)
High	11,000	276,000
Middle	8,000	240,000

Step 3: Compare the different activity levels and associated costs and calculate the variable cost:

	Production (units)	Total cost (Rs.)
High	11,000	276,000
Middle	8,000	240,000
	3,000	36,000

Therefore: 3,000 units cost an extra Rs. 36,000.

Therefore: The variable cost per unit = $\text{Rs. } 36,000 / 3,000 \text{ units} = \text{Rs. } 12 \text{ per unit}$

Step 4: Substitute the variable cost into one of the cost functions

Total cost of 11,000 units:

$$\text{Fixed cost} + \text{Variable cost} = \text{Rs. } 276,000$$

$$\text{Fixed cost} + 11,000 \times \text{Rs. } 12 = \text{Rs. } 276,000$$

$$\text{Fixed cost} + \text{Rs. } 132,000 = \text{Rs. } 276,000$$

$$\text{Fixed cost} = \text{Rs. } 276,000 - \text{Rs. } 132,000 = \text{Rs. } 144,000$$

Step 5: Construct total cost function above 7,500 units

$$\text{Total cost} = a + bx = 144,000 + 12x$$

Step 6: Construct total cost function below 7,500 units

$$\text{Total cost} = a + bx = (144,000 \times \frac{100}{120}) + 12x$$

$$\text{Total cost} = a + bx = 120,000 + 12x$$

The cost functions can be used to estimate total costs associated with a level as appropriate.

8.4 High/low analysis when there is a change in the variable cost per unit

High/low analysis can also be used when there is a change in the variable cost per unit between the 'high' and the 'low' levels of activity. The same approach is needed as for a step change in fixed costs, as described above.

When the change in the variable cost per unit is given as a percentage amount, a third 'in between' estimate of costs should be used, and the variable cost per unit will be the same for:

- the 'in between' activity level and
- either the 'high' or the 'low' activity level.

High/low analysis may be applied to the two costs and activity levels for which unit variable costs are the same, to obtain an estimate for the variable cost per unit and the total fixed costs at these activity levels. The variable cost per unit at the third activity level can then be calculated making a suitable adjustment for the percentage change.


Example: High/low method with step in variable costs

A company has identified that total fixed costs are constant over all levels of activity but there is a 10% reduction in the variable cost per unit above 24,000 units of activity. This reduction applies to all units of activity, not just the additional units above 24,000..

The company has identified the following costs at three activity levels. (Step 1)

	Production (units)	Total cost (Rs.)
High	30,000	356,000
Middle	25,000	320,000
Low	20,000	300,000

Step 2: Choose the pair which is on the same side as the change.

	Production (units)	Total cost (Rs.)
High	30,000	356,000
Middle	25,000	320,000

Step 3: Compare the different activity levels and associated costs and calculate the variable cost:

	Production (units)	Total cost (Rs.)
High	30,000	356,000
Middle	25,000	320,000
	5,000	36,000

Therefore: 5,000 units cost an extra Rs. 36,000.

Therefore: The variable cost per unit above 24,000 units
 $= \text{Rs. } 36,000 / 5,000 \text{ units} = \text{Rs. } 7.2 \text{ per unit}$

Therefore: The variable cost per unit below 24,000 units
 $= \text{Rs. } 7.2 \text{ per unit} \times \frac{100}{90} = \text{Rs. } 8 \text{ per unit}$

Step 4: Substitute the variable cost into one of the cost functions

Total cost of 30,000 units:

$$\text{Fixed cost} + \text{Variable cost} = \text{Rs. } 356,000$$

$$\text{Fixed cost} + 30,000 \times \text{Rs. } 7.2 = \text{Rs. } 356,000$$

$$\text{Fixed cost} + \text{Rs. } 216,000 = \text{Rs. } 356,000$$

$$\text{Fixed cost} = \text{Rs. } 356,000 - \text{Rs. } 216,000 = \text{Rs. } 140,000$$

Step 5: Construct total cost function above 24,000 units

$$\text{Total cost} = a + bx = 140,000 + 7.2x$$

Step 6: Construct total cost function below 24,000 units

$$\text{Total cost} = a + bx = 140,000 + 8x$$

The cost functions can be used to estimate total costs associated with a level as appropriate.

9 COST ESTIMATION: LINEAR REGRESSION ANALYSIS

Section overview

- The purpose of linear regression analysis
- The linear regression formulae

9.1 The purpose of linear regression analysis

Linear regression analysis is a statistical technique for calculating a line of best fit from a set of data:

$$y = a + bx$$

The data is in 'pairs', which means that there are a number of different values for x , and for each value of x there is an associated value of y in the data.

Linear regression analysis can be used to estimate fixed costs and the variable cost per unit from historical data for total costs. It is an alternative to the high-low method.

Linear regression analysis can also be used to predict future sales by projecting the historical sales trend into the future (on the assumption that sales growth is rising at a constant rate, in a 'straight line').

Regression analysis and high-low analysis compared

There are important differences between linear regression analysis and the high-low method.

- ❑ High-low analysis uses just two sets of data for x and y , the highest value for x and the lowest value for x . Regression analysis uses as many sets of data for x and y as are available.
- ❑ Because regression analysis calculates a line of best fit for all the available data, it is likely to provide a more reliable estimate than high-low analysis for the values of a and b .
- ❑ In addition, regression analysis can be used to assess the extent to which values of y depend on values of x . For example, if a line of best fit is calculated that estimates total costs for any volume of production, we can also calculate the extent to which total costs do seem to be linked (or 'correlated') to the volume of production. This is done by calculating a **correlation co-efficient**, which is explained later.
- ❑ Regression analysis uses more complex arithmetic than high-low analysis, and a calculator or small spreadsheet model is normally needed

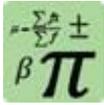
In summary, linear regression analysis is a better technique than high-low analysis because:

- ❑ it is more reliable and
- ❑ its reliability can be measured.

9.2 The linear regression formulae

Linear regression analysis is a statistical technique for calculating a line of best fit where there are a number of different values for x , and for each value of x there is an associated value of y in the data.

The linear regression formulae for calculating a and b are shown below.



Formula: Regression analysis formula

Given a number of pairs of data a line of best fit ($y = a + bx$) can be constructed by calculating values for a and b using the following formulae.

$$a = \frac{\sum y}{n} - \frac{b \sum x}{n}$$

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

Where:

- $x, y =$ values of pairs of data.
- $n =$ the number of pairs of values for x and y .
- $\Sigma =$ A sign meaning the sum of. (The capital of the Greek letter sigma).

Note: the term b must be calculated first as it is used in calculating a .

Approach

- Set out the pairs of data in two columns, with one column for the values of x and the second column for the associated values of y . (For example, x for output and y for total cost.
- Set up a column for x^2 , calculate the square of each value of x and enter the value in the x^2 column.
- Set up a column for xy and for each pair of data multiply x by y and enter the value in the xy column.
- Sum each column.
- Enter the values into the formulae and solve for b and then a . (It must be in this order as you need b to find a).

Linear regression analysis is widely used in economics and business. One application is that it can be used to estimate fixed costs and variable cost per unit (or number of units) from historical total cost data.

The following example illustrates this use

**Example: Linear regression analysis**

A company has recorded the following output levels and associated costs in the past six months:

Month	Output (000 of units)	Total cost (Rs m)
January	5.8	40.3
February	7.7	47.1
March	8.2	48.7
April	6.1	40.6
May	6.5	44.5
June	7.5	47.1

Required: Construct the equation of a line of best fit for this data.

Working:

	x	y	x ²	xy
January	5.8	40.3	33.64	233.74
February	7.7	47.1	59.29	362.67
March	8.2	48.7	67.24	399.34
April	6.1	40.6	37.21	247.66
May	6.5	44.5	42.25	289.25
June	7.5	47.1	56.25	353.25
	<u>41.8</u>	<u>268.3</u>	<u>295.88</u>	<u>1,885.91</u>
	= Σx	= Σy	= Σx^2	= Σxy

$$b = \frac{n \Sigma xy - \Sigma x \Sigma y}{n \Sigma x^2 - (\Sigma x)^2}$$

$$b = \frac{6(1,885.91) - (41.8)(268.3)}{6(295.88) - (41.8)^2}$$

$$b = \frac{11,315.46 - 11,214.94}{1,775.28 - 1,747.24} = \frac{100.52}{28.04} = 3.585$$

(This is the cost in millions of rupees of making 1,000 units)

$$a = \frac{\Sigma y}{n} - \frac{b \Sigma x}{n}$$

$$a = \frac{268.3}{6} - \frac{3.585(41.8)}{6}$$

$$a = 44.72 - 24.98 = 19.74$$

Line of best fit:

$$y = a + bx$$

$$y = 19.74 + 3.585x$$

SOLUTIONS TO PRACTICE QUESTIONS

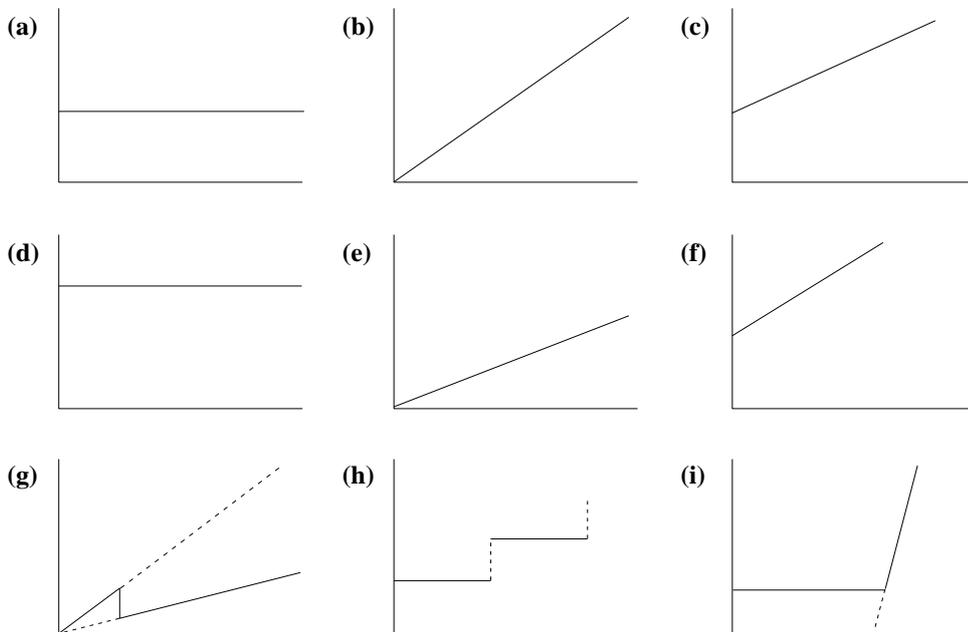
Solutions

1

- 1 **Chief accountant's salary.** Accounting department costs are an administration cost, and the salary of the chief accountant is treated in full as an administration costs.
- 2 **Telephone charges.** These are usually treated as administration costs, unless the charges can be traced directly to telephones in the manufacturing department or the sales and distribution department. When charges can be traced directly to telephones in the manufacturing department, they should be recorded as manufacturing costs.
- 3 **Office cleaning services.** These are usually treated as administration costs, unless the charges can be traced directly to offices used by the sales and distribution staff, or the production staff.
- 4 **Warehouse staff.** These are manufacturing costs when the warehouse is used to store raw materials and components. They are sales and distribution costs when the warehouse is used to store finished goods. If the warehouse stores raw materials and finished goods, the wages costs should be apportioned between production costs and sales and distribution costs.

Solutions

2



Solution**3**

The cost item is a mixed cost. Up to 5,000 units of output, total fixed costs are Rs.14,000 and the variable cost per unit is Rs.(24,000 – 14,000)/5,000 units = Rs.2 per unit.

At the 5,000 units of output, there is a step increase in fixed costs of Rs.6,000 (from Rs.24,000 total costs to Rs.30,000 total costs). Total fixed costs therefore rise from Rs.14,000 to Rs.20,000. The variable cost per unit remains unchanged.

At the 10,000 units level, total costs are therefore:

	Rs.
Variable costs (10,000 × Rs.2)	20,000
Fixed costs	20,000
Total costs	<u>40,000</u>

Solutions**4**

- 1 Manufacturing company.** Fuel costs are an indirect expense. Fuel used in the company's vehicles is unlikely to be considered a material cost at all, but would be treated as an overhead expense.
- 2 Road haulage company.** Since fuel is a major cost of operating a road haulage service, fuel costs are likely to be treated as a direct material cost of operations.
- 3 Construction company.** Fuel costs are likely to be an indirect expense, for the same reasons that apply to a manufacturing company.
- 4 Motorway service station.** This sells fuel to customers. In a retail operation, items sold to customers are direct costs of sale. The cost of the fuel sold is therefore a direct material cost (= a cost of sale).

Solutions**5****1** 110,500 hours = 85% capacity.Therefore 100% capacity = $110,500 \text{ hours} / 85\% = 130,000 \text{ hours}$.

	hours	Rs.
High: Total cost of	130,000	= 662,000
Low: Total cost of	110,500	= 615,200
Difference: Variable cost of	<u>19,500</u>	<u>= 46,800</u>

Therefore the variable cost per hour = $\text{Rs.}46,800 / 19,500 \text{ hours} = \text{Rs.}2.40$.**Substitute in high equation**

	Cost
	Rs.
Total cost of 130,000 hours	662,000
Variable cost of 130,000 hours ($\times \text{Rs.}2.40$)	312,000
Therefore fixed costs	<u>350,000</u>

2

	hours	Rs.
High: Total cost of	41	= 32,700
Low: Total cost of	<u>21</u>	<u>= 23,600</u>
Difference: Variable cost of	20	= 9,100

Therefore variable cost per unit repaired = $\text{Rs.}9,100 / 20 \text{ hours} = \text{Rs.}455$.**Substitute in low equation**

	Cost
	Rs.
Total cost of 21 units	23,600
Variable cost of 21 units ($\geq \text{Rs.}455$)	9,555
Therefore fixed costs per month	<u>14,045</u>

Cost estimate for 30 units

	Cost
	Rs.
Fixed costs	14,045
Variable cost of 30 units ($\times \text{Rs.}455$)	13,650
Estimated total costs	<u>27,695</u>

If this estimate is used to prepare a budget for a period, it might be rounded to a convenient number, say **Rs.27,700**.



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2015

FINANCIAL ACCOUNTING AND REPORTING I

STUDY TEXT

