

8

STOCK VALUATION

Companies may have stocks – or inventories – held in the form of raw materials, work-in-progress, finished goods, products bought for resale, and service items. Often the value of such stock is high, representing a considerable sum of money and so it is important that it is valued consistently, and proper controls are kept over the physical stock.

In this chapter we look at:

- valuation of stock, including the application of IAS 2, *Inventories*
- FIFO (first in, first out) and AVCO (average cost) methods of stock valuation
- use of a stores ledger record – or stock card – to calculate the value of closing stock
- effect on profits, in the short-term, of different methods of stock valuation
- advantages and disadvantages of FIFO and AVCO
- importance of the stock-take and stock reconciliation

STOCKS

Companies often have stocks – or inventories – in various forms:

- raw materials, for use in a manufacturing business
- work-in-progress (partly manufactured goods) and finished goods (ready for sale) of a manufacturing business
- products bought for resale by a retailer
- service items, such as stationery, bought for use within a business

Stock is often kept in the stores or storeroom of a company and the person who looks after it is the storekeeper.

VALUATION OF STOCK

The stock of materials held by a business invariably has considerable value and ties up a lot of money. At the end of the financial year, it is essential for a company to make a physical stock-take and to value its stock for use in the financial statements – in the calculation of profit, and for the balance sheet. This physical stock-take involves the company staff counting each item held in stock. The stock held is then valued as follows:

$$\text{number of items held} \times \text{cost per item} = \text{stock value}$$

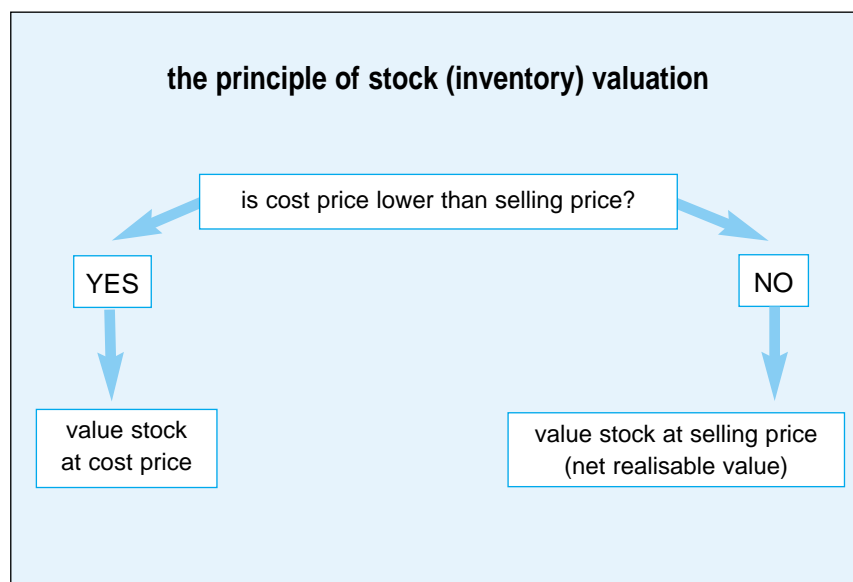
The auditors of a company may make random checks to ensure that the stock value is correct.

The value of stock at the beginning and end of the financial year is used to calculate the figure for cost of sales. Therefore, the stock value has an effect on profit for the year.

Stock can be valued at *either*:

- cost, which means the purchase price plus any other costs incurred to bring the product (or service) to its present location and condition, *or*
- net realisable value, which is the estimated selling price less the estimated costs to get the product into a condition necessary to complete the sale

Stock valuation is normally made at the lower of these two values, ie at the *lower of cost and net realisable value*. This valuation is taken from International Accounting Standard (IAS) No 2, *Inventories*. This valuation applies the prudence concept and is illustrated by the following diagram:



WORKED EXAMPLE: STOCK VALUATION

situation

The Clothing Store Limited bought a range of beachwear in the Spring, with each item costing £15 and retailing for £30. Most of the goods sell well but, by Autumn, ten items remain unsold. These are put on the bargain rail at £18 each. On 31 December, at the end of the store's financial year, five items remain unsold. At what price will they be included in the year end stock valuation?

Twelve months later, three items still remain unsold and have been reduced further to £10 each. At what price will they now be valued in the year end stock valuation?

solution

- At 31 December, the five items will be valued at a cost of £15 each, ie $5 \times £15 = £75$.
- Twelve months later, the three items remaining unsold will be valued at a net realisable value of £10 each, ie $3 \times £10 = £30$.

Important note: Stocks are never valued at selling prices when selling prices are above cost prices. The reason for this is that selling prices include profit, and to value stock in this way would recognise the profit in the financial statements before it has been realised.

METHODS OF STOCK VALUATION

The difficulty in stock valuation is in finding out the cost price of stock – this is not easy when quantities of a particular stock item are continually being bought in – often at different prices – and then sold. Some companies have stock in a number of different forms, eg a manufacturer may well have stocks of raw materials, work-in-progress and finished goods.

IAS 2, *Inventories*, allows companies to use one of two methods to calculate the cost price of their stock:

FIFO (first in, first out)

In this method, the first (oldest) stocks acquired are assumed to be used first. This means that the stock on hand at any time is assumed to consist of the most recently acquired items.

AVCO (average cost)

In this method, the weighted average cost of items held at the beginning of the year is calculated, using the formula:

$$\text{weighted average cost} = \frac{\text{total cost of goods in stock}}{\text{number of items in stock}}$$

The weighted average cost is then used to value goods sold. A new weighted average cost must be calculated each time that further stocks are bought during the year.

Note that the use of a particular valuation method does not necessarily correspond with the method of physical distribution adopted in the stores of the business. For example, in a car factory one car battery of type X is the same as another, and no-one will be concerned if the storekeeper issues one from the last batch received, even if the FIFO system has been adopted. However, perishable goods are always physically handled on the basis of first in, first out, even if the stock records use the AVCO method.

Having chosen a suitable stock valuation method, a business would continue to use that method unless there were good reasons for making the change. This is in line with the consistency concept of accounting.

recording stock values – stores ledger record

In order to be able to calculate accurately the price at which stocks of materials are issued and to ascertain a valuation of stock, a stores ledger record – or stock card – is used, as shown below. This method of recording stock data is also used in the Worked Example which follows.

STORES LEDGER RECORD									
Date	Receipts			Issues			Balance		
	Quantity	Cost	Total Cost	Quantity	Cost	Total Cost	Quantity	Cost	Total Cost
		£	£		£	£		£	£

Note that this price is the cost price to the business. It is not the selling price – stock records are usually kept at cost price.

Note the following points:

- the layout of the stores ledger record – or stock card – may vary slightly from one business to another
- many businesses use a computer system for their stock records
- a blank stores ledger record, which may be photocopied, is provided in the Appendix
- whilst it is good learning practice to use a stores ledger record, many examination questions require a calculation of stock value – this can be completed without a stores ledger record

WORKED EXAMPLE: STORE LEDGER RECORDS

situation

Ashok Patel runs a computer supplies company. One of the items stocked is the 'Zap' data disk.

To show how the stores ledger records would appear under FIFO and AVCO, the following data is used:
20-7

January Opening stock of 40 units at a cost of £3.00 each

February Bought 20 units at a cost of £3.60 each

March Sold 36 units for £6 each

April Bought 20 units at a cost of £3.75 each

May Sold 25 units for £6 each

What will be the profit for the period using the two stock valuation methods?

solution

Note: In the FIFO method, units issued at the same time may be valued at different costs. This is because the quantities received, with their costs, are listed separately and used in a specific order. There may be insufficient units at one cost, eg see the May issue, below.

FIFO

STORES LEDGER RECORD

Date	Receipts			Issues			Balance		
	Quantity	Cost	Total Cost	Quantity	Cost	Total Cost	Quantity	Cost	Total Cost
20-7									
Jan	Balance	£	£		£	£	40	3.00	<u>120.00</u>
Feb	20	3.60	72.00				40	3.00	120.00
							20	3.60	72.00
							<u>60</u>		<u>192.00</u>
March				36	3.00	108.00	4	3.00	12.00
							20	3.60	72.00
							<u>24</u>		<u>84.00</u>
April	20	3.75	75.00				4	3.00	12.00
							20	3.60	72.00
							20	3.75	75.00
							<u>44</u>		<u>159.00</u>
May				4	3.00	12.00			
				20	3.60	72.00			
				1	3.75	3.75	19	3.75	<u>71.25</u>

Note: In the 'Balance' columns, a new list of stock quantities and costs is started after each receipt or issue. When stock is issued, costs are used from the **top** of the list downwards.

AVCO

In this method, each quantity issued is valued at the weighted average cost per unit, and so is the balance in stock. The complete list of different costs does not have to be re-written each time.

STORES LEDGER RECORD

Date	Receipts			Issues			Balance		
	Quantity	Cost	Total Cost	Quantity	Cost	Total Cost	Quantity	Cost	Total Cost
Jan	Balance	£	£		£	£	40	3.00	<u>120.00</u>
Feb	20	3.60	72.00				40	3.00	120.00
							20	3.60	72.00
							<u>60</u>	3.20	<u>192.00</u>
March				36	3.20	115.20	24	3.20	<u>76.80</u>
April	20	3.75	75.00				24	3.20	76.80
							20	3.75	75.00
							<u>44</u>	3.45	<u>151.80</u>
May				25	3.45	86.25	19	3.45	<u>65.55</u>

Note: Weighted average cost is calculated by dividing the quantity held in stock into the value of the stock. For example, at the end of February, the weighted average cost is $\text{£}192 \div 60 \text{ units} = \text{£}3.20$, and at the end of April it is $\text{£}151.80 \div 44 = \text{£}3.45$.

The closing stock valuations at the end of May 20-7 under the two methods show total cost prices of:

FIFO £71.25

AVCO £65.55

The difference comes about because different stock valuation methods have been used.

effect on profit

In the example above, the selling price was £6 per unit. The effect on gross profit of using different stock valuations is shown below.

		FIFO	AVCO
		£	£
Sales:	61 units at £6	<u>366.00</u>	<u>366.00</u>
Opening stock:	40 units at £3	120.00	120.00
Purchases:	20 units at £3.60	147.00	147.00
	20 units at £3.75		
		267.00	267.00
Less Closing stock:	19 units	<u>71.25</u>	<u>65.55</u>
Cost of sales		<u>195.75</u>	<u>201.45</u>
Gross profit = Sales – Cost of sales		<u>170.25</u>	<u>164.55</u>

Notice that the cost of sales figure is also obtainable by adding up the values in the 'Issues' column. You can also check this, both in Units and in Values:

opening stock + receipts – issues = closing stock

The Worked Example shows that in times of rising prices, as here, FIFO produces the higher reported profit and AVCO the lower. The reason for this is that, here, FIFO gives a higher closing stock, which means that cost of sales is lower and profit is higher; by contrast, AVCO gives a lower closing stock, which means that cost of sales is higher and profit is lower. Although the profit difference in this Worked Example is not significant, to a large company the difference could be a considerable money amount. However it is important to note that, over the life of a business, total profit is the same, whichever method is chosen: the closing stock of one period becomes the opening stock of the next and, in this way, profit is allocated to different years depending on which method is used.

ADVANTAGES AND DISADVANTAGES OF FIFO AND AVCO

FIFO (first in, first out)

advantages

- it is realistic, ie it assumes that goods are issued in order of receipt
- it is easy to calculate
- stock valuation comprises the actual costs at which items have been bought
- the closing stock valuation is close to the most recent costs
- it is one of the two methods which IAS 2, *Inventories*, allows companies to use
- acceptable for tax purposes

disadvantages

- costs at which goods are issued are not necessarily the latest prices, so cost of sales may not represent current prices
- in times of rising prices, profits are higher than with other methods (resulting in more tax to pay)
- the method is cumbersome as the list of different costs must be maintained

AVCO (average cost)

advantages

- over a number of accounting periods reported profits are smoothed, ie both high and low profits are avoided
- fluctuations in purchase costs are evened out so that issues per unit do not vary greatly
- logical, ie it assumes that identical units, when purchased at different times, have the same value
- closing stock valuation is close to current market values (in times of rising prices, it will be below current market values)
- the calculations can be computerised more easily than the other methods
- it is one of the two methods which IAS 2, *Inventories*, allows companies to use
- acceptable for tax purposes

disadvantages

- a new weighted average has to be calculated after each receipt, and calculations may be to several decimal places
- because they are averaged, issues and stock valuation are usually at costs which never existed
- issues may not be at current costs and, in times of rising prices, will be below current costs

The important point to remember is that a business must adopt a consistent stock valuation policy, ie it should choose a method of finding the cost price, and not change it without good reason. FIFO and AVCO are the two methods allowed under IAS 2, *Inventories*, and a company might decide to use FIFO for one type of stock and AVCO for another. The table on the next page provides a comparison of the FIFO and AVCO methods of stock valuation. Note that the two methods are simply valuation techniques and do not affect the cash generated by the business, or the way in which the goods are physically moved.

CATEGORIES OF STOCK

IAS 2, *Inventories*, requires that, in calculating the lower of cost and net realisable value, note should be taken of:

- separate items of stock, or
- groups of similar items

This means that the stock valuation 'rule' must be applied to each separate item of stock, or each group or category of similar stocks. The total cost cannot be compared with the total net realisable value, as is shown by the Worked Example which follows.

WORKED EXAMPLE: VALUING YEAR END STOCKS

situation

The year end stocks for the two main groups of stock held by the Paint and Wallpaper Company Limited are found to be:

	Cost	Net realisable value
	£	£
Paints	2,500	2,300
Wallpapers	5,000	7,500
	<u>7,500</u>	<u>9,800</u>

Which one of the following stock valuations do you think is correct?

- (a) £7,500
- (b) £9,800
- (c) £7,300
- (d) £10,000

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See next page for the solution to the Worked Example.

a comparison of the two main methods of stock valuation

	FIFO	AVCO
method	The costs used for goods sold or issued follow the order in which the goods were received.	Does not relate issues to any particular batch of goods received, but uses a weighted average cost.
calculation	It is easy to calculate costs because they relate to specific receipts of goods.	More complex because of the need to calculate weighted average costs.
stock valuation	Stock valuations are based on the most recent costs of goods received.	Weighted average costs are used to value closing stock.
acceptability under accounting standards	FIFO is acceptable under IAS 2, <i>Inventories</i> .	AVCO is acceptable under IAS 2, <i>Inventories</i> .
profits and taxation	In times of rising prices FIFO results in higher reported profits than AVCO, resulting in more tax being payable. This method is acceptable for tax purposes.	AVCO, by using a weighted average cost, smooths out some of the peaks and troughs of profit and loss. This method is acceptable for tax purposes.
administration	Use of FIFO will mean keeping track of each receipt of stock until the goods are issued. This can be a time-consuming process.	There is no need to track each receipt as a weighted average cost is used. This also means it is easier to computerise the stock records.
cost of sales	In a time of rising prices FIFO uses older, out of date prices for goods issued and cost of sales.	AVCO gives an average price for goods issued and cost of sales.

solution

Stock valuation (c) is correct because it has taken the 'lower of cost and net realisable value' for each group of stock, ie

	£
Paints (at net realisable value)	2,300
Wallpapers (at cost)	<u>5,000</u>
	<u>7,300</u>

You will also note that this valuation is the lowest possible choice, indicating that stock valuation follows the prudence concept of accounting.

THE STOCK-TAKE AND STOCK RECONCILIATION

the stock-take

A company needs to check regularly that the quantity of stock held is the same as that recorded in the stock records. This is done by means of a stock-take – counting the physical stock on hand to check against the balance shown by the records, and to identify any theft or deterioration.

Stock-taking is carried out on either a periodic basis or continuously. A *periodic basis* involves carrying out a stock-take of all items held at regular intervals (often twice a year). *Continuous stock-taking* is a constant process where selected items are counted on a rotating basis, with all items being checked at least once a year (expensive, desirable or high-turnover items will need to be checked more frequently).

stock reconciliation

The object of the stock-take is to see if the stock records represent accurately the level of stock held. The comparison between the stock-take and the stock record is known as stock reconciliation. This is an important process because

- an accurate stock figure can then be used to value the stock
- it will highlight any discrepancies which can then be investigated

Discrepancies and queries in stock reconciliation need to be referred to the company's managers and any other people who may need to know, eg the firm's auditors who are organising the stock-take. If the discrepancy is a small shortfall in the physical stock compared with the stock record, it will be authorised for write-off. Larger discrepancies will need to be investigated, as they could have been caused by:

- an error on the stock record, such as
 - a failure to record a receipt or an issue of goods
 - an administrative error, eg 100 items received recorded as 10 items
 - different items issued to those recorded, eg a size 8 issued instead of a size 10
 - an error in calculating the balance of stock

- theft of stock
- damaged stock being disposed of without any record having been made

Once an accurate figure for closing stock has been agreed it can then be used in the financial statements – to calculate profit, and for the balance sheet.

CHAPTER SUMMARY

- Companies may have stocks – or inventories – held in the form of raw materials, work-in-progress, finished goods, products bought for resale, and service items.
- At the end of the financial year, the company must make a physical stock-take and value its stock for use in the financial statements – in the calculation of profit, and for the balance sheet.
- In order to be able to calculate accurately the price at which stocks of materials are issued and to ascertain a valuation of stock, a stores ledger record – or stock card – is used.
- The overriding principle of stock valuation – set out in IAS 2, *Inventories* – is that stocks are to be valued at the lower of cost and net realisable value.
- IAS 2, *Inventories*, allows two methods to be used to value stock:
 - FIFO (first in, first out)
 - AVCO (average cost)
- Having chosen a stock valuation method, a company should apply it consistently.
- The use of either FIFO or AVCO may result in a different value for closing stock and, hence, a different reported profit for a particular time period. However, over the life of a business, total profit is the same, whichever method is chosen.
- IAS 2, *Inventories*, requires that, in calculating the lower of cost and net realisable value, note should be taken of
 - separate items of stock, or
 - groups of similar items
- A stock-take is carried out regularly to check that the quantity of stock held is the same as that recorded in the stock records. A stock-take is carried out on either a periodic basis or continuously.
- Stock reconciliation is the process of comparing the stock-take and the stock record. Small shortfalls in physical stock may be authorised for write-off by the company's managers or auditors; larger discrepancies will need to be investigated to establish their cause.

This chapter completes your studies for AS Unit 3. However, this chapter prepares you for AS Unit 4 where you will be looking at aspects of management accounting.

QUESTIONS

NOTE: an asterisk (*) after the question number means that an answer to the question is given at the end of this book.

- 8.1* Complete the following sentences:
- (a) Stock levels and movements are recorded on a
 - (b) The process of comparing the physical stock with the stock records is known as
 - (c) The international accounting standard that sets out the accounting treatment for the valuation of stock is IAS ..., ..
 - (d) The usual basis for stock valuation is at the lower of and

- 8.2* Breeden Bakery Limited makes 'homestyle' cakes which are sold to supermarket chains. The company uses the first in, first out (FIFO) method for valuing its stocks. Complete the following stores ledger record for wholewheat flour for May 20-7:

STORES LEDGER RECORD: wholewheat flour								
Date	Receipts			Issues			Balance	
	Quantity kgs	Cost per kg	Total Cost	Quantity kgs	Cost per kg	Total Cost	Quantity kgs	Total Cost
20-7		£	£		£	£		£
Balance at 1 May							10,000	2,500
6 May	20,000	0.30	6,000				30,000	8,500
10 May				20,000				
17 May	10,000	0.35	3,500					
20 May				15,000				

8.3

The supplies department of Peoples Bank has the following movements of an item of stock for June 20-4:

		units	cost per unit £	total cost £
1 June	Balance	2,000	2.00	4,000
15 June	Receipts	1,000	2.30	2,300
21 June	Issues	2,500		

You are to complete the following table for FIFO and AVCO:

Date 20-4	Description	FIFO £	AVCO £
21 June	Total issue value		
30 June	Total closing stock value		

8.4

Wyezed Limited stocks two types of goods, Wye and Zed. The company values Wye using a FIFO basis, and Zed on an AVCO basis.

The following are the stock movements during the month of August 20-4:

Wye – FIFO basis

20-4		units	cost per unit £
1 Aug	Balance	5,000	5.00
10 Aug	Receipts	2,000	5.25
18 Aug	Receipts	3,000	5.50
23 Aug	Issues	8,000	

Zed – AVCO basis

20-4		units	cost per unit £
1 Aug	Balance	10,000	4.00
6 Aug	Receipts	5,000	4.30
19 Aug	Receipts	7,500	4.40
24 Aug	Issues	12,000	

(b) At 31 August 20-4, the net realisable value of each type of stock is:

- Wye £10,000
- Zed £46,000

Show the amount at which stocks should be valued on 31 August 20-4 in order to comply with IAS 2, *Inventories*.

8.5

From the following information prepare stores ledger records for product Alpha using:

- (a) FIFO
- (b) AVCO
- 20 units of the product are bought in January 20-7 at a cost of £3 each
 - 10 units are bought in February at a cost of £3.60 each
 - 8 units are sold in March
 - 10 units are bought in April at a cost of £4.00 each
 - 16 units are sold in May

Note: a blank stores ledger record, which may be photocopied, is provided in the Appendix

8.6

JayKay Limited is formed on 1 January 20-7 and, at the end of its first half-year of trading, the stores ledger records show the following:

20-7	PRODUCT JAY		PRODUCT KAY	
	Receipts (units)	Issues (units)	Receipts (units)	Issues (units)
Jan	100 at £4.00		200 at £10.00	
Feb		80	100 at £9.55	
Mar	120 at £4.21			240
Apr	70 at £3.94		90 at £10.50	
May		140	150 at £10.00	
Jun	105 at £4.30			100

At 30 June 20-7, the net realisable value of each type of stock is:

product Jay	£1,050.00
product Kay	£1,950.00
	<u>£3,000.00</u>

You are to:

- Complete stores ledger records for products Jay and Kay using (a) FIFO, (b) AVCO.
- The business has decided to use the FIFO method. Show the amount at which its stocks should be valued on 30 June 20-7 in order to comply with IAS 2, *Inventories*.

Note: a blank stores ledger record, which may be photocopied, is provided in the Appendix

8.7*

Go Games Limited sells computer games. At the end of the financial year, the company's stocks include:

300 copies of 'X1X' game that cost £40 each and will sell at only £30, because it is an out-of-date version.

260 copies of a newly-released game, 'X-TRA-G' that cost £56 each and will be sold for £90 each.

100 copies of a current version of 'X-TREME 2' game, which is expected to be up-dated to 'X TREME 3' in the near future. These cost £35 each and normally sell for £55, but because they may soon be out-of-date, Go Games Limited has reduced the price to £42 each.

You are to:

Calculate the total value of the stock items described above, in order to comply with IAS 2, *Inventories*. Include an explanation of your calculations.

8.8*

A football club shop holds stocks of replica club strip as well as other goods and clothing. The club strip has recently been changed and the old version will have to be sold at greatly reduced prices. At the end of the financial year, the stocks in the shop include:

	Cost	Net realisable value
	£	£
Replica strip (old version)	3,800	2,500
Replica strip (new version)	8,400	11,000
	<u>12,200</u>	<u>13,500</u>

You are to:

Determine the total value of the stock items above, in order to comply with IAS 2, *Inventories*.

8.9*

Denise Watson sells one type of agricultural machine, a mini-baler. She provides the following information for April 2008.

Denise had 2 mini-balers in stock at 1 April 2008. They cost £1,200 each.

Date	Purchases	Sales
1 April	3 @ £1,200	
2 April		4 @ £2,900
7 April	4 @ £1,350	
17 April		4 @ £3,000
21 April	8 @ £1,400	
24 April		7 @ £3,000

Total purchases for the month: £20,200. Total sales for the month: £44,600

Denise has calculated her gross profit to be £24,782, using the weighted average cost method (AVCO) of valuing her stock.

She sells her mini-balers in the order in which she purchases them. For this reason, she believes she should change her method of valuing stock to the first in first out method (FIFO).

REQUIRED

- Prepare a trading account for the month of April 2008 using the FIFO method of valuing stock.
- Discuss one advantage and one disadvantage of using the weighted average cost method (AVCO) of valuing stock. Advise whether she should change her method of valuing stock.

Assessment and Qualifications Alliance (AQA), Second Specimen Paper for 2010

8.10

Tom Greenacre buys and sells one model of caravan. He provides the following information for April 2007.

On 1 April, there was one caravan in stock, which had cost £17,700.

Date	Purchases	Sales
10 April	2 @ £18,000 each	
18 April		2 @ £23,000 each
26 April	3 @ £18,400 each	
30 April		2 @ £23,000 each

REQUIRED

- Calculate the value of closing stock at 30 April 2007, using the weighted average cost (AVCO) method of stock valuation
- Discuss whether or not a change from the weighted average cost (AVCO) method to the first in first out (FIFO) method would be beneficial to Tom's business.

Assessment and Qualifications Alliance (AQA), 2007

8.11*

Your friend, Gerry Gallagher, has recently set up in business selling plastic toys. The transactions for his first month of trading are:

1 April	Bought 500 toys at £1.50 each
3 April	Sold 250 toys at £2.50 each
7 April	Bought 1,000 toys at £1.40 each
14 April	Sold 600 toys at £2.60 each
20 April	Sold 300 toys at £2.70 each
27 April	Bought 1,050 toys at £1.62 each

At the end of April he asks you to help him to value his closing stock. He has heard that other firms in the toy trade value their stock using either FIFO or AVCO. He asks you to do the calculations for him, and also to work out his gross profit using each of the two stock valuation methods. He comments that he 'will use the stock valuation that gives the higher profit' because he wants to impress his bank manager.

You are to:

- (a) Calculate his closing stock valuation using each of the two methods. (Note: do not use a stock record card.)
- (b) Calculate the gross profit for the month, using each of the two methods.
- (c) Respond to his comment.

8.12

You work as an accounts assistant at Kurt Plastics PLC and, for the last few days, you have been carrying out a stock-take and a stock reconciliation. There are discrepancies with two stock lines:

STOCK NUMBER	UNIT PRICE	STOCK RECORD	PHYSICAL STOCK
146	£2 each	10	8
523	£200 each	100	90

You take this information to the company accountant who asks what actions you would take to deal with these discrepancies.

REQUIRED

- (a) What is the purpose of a stock-take?
- (b) What is meant by stock reconciliation?
- (c) How will you respond to the company accountant? Give your reasons.