The May 2002 Management Accounting Fundamentals paper will use a new approach to examining called objective testing. This was described in December's Insider, but it’s worth reinforcing here that, because you will not be able to choose your questions, it is more important than ever to study the whole syllabus and leave nothing to chance.

Absorption costing, which is a core syllabus topic, is the method used to attribute indirect costs (overheads) to cost units. Overheads include indirect material costs, indirect labour costs and indirect expenses. Remember, an indirect cost is one which cannot be directly attributed to a cost unit.

So why do we need to include overheads in our cost unit? We do it to value the cost unit at full production cost to satisfy the requirements of SSAP9 Stocks and Work in Progress which recommends that stock valuation should include an element of fixed production overhead.

The basis of many exam questions is to calculate an appropriate overhead absorption rate. The following example is one method of doing this. ABC Ltd produces a product called Z and absorbs production overheads on a unit basis. The budgeted information for the year ending 31 January 2003 is as follows:

- Budgeted output = 100,000 units
- Budgeted production department overheads = £250,000

The budgeted production overhead absorption rate for the forthcoming period would be £250,000 ÷ 100,000 = £2.50 per unit.

Overheads are incurred across the whole of an organisation. An organisation can be broken into three core functions: production; selling and distribution; and administration. Overheads can be identified with each of these functions within the organisation.

The production function in such an organisation is usually made up of a number of cost centres – departments directly involved in production (for example, a machining department) and those involved in servicing the production departments (for example, a maintenance department).

So how do you calculate the overhead absorption rate? First, an organisation must identify the various production and service departments and estimate their overheads for the forthcoming period.

The next stage is “allocation”. This is where any overheads that can be clearly identified with the production and service departments are allocated to each department accordingly – for example, the supervisor’s wages for the assembly department would be allocated to that department.

Common overheads that cannot be allocated directly to either the production or service departments – for example, rent and rates, depreciation and insurance – need to be “apportioned”. This involves spreading the common overheads between the various departments on as fair a basis as possible.

- Overhead – the possible basis on which costs are apportioned.
- Rent and rates – for the area occupied by each department.
- Depreciation – the value of the plant and machinery in each department.

Once all of the overheads are allocated and apportioned to the production and service departments, the next stage is “reapportionment”. This involves recharging the service department overheads to the production departments.

The bases of the reapportionment will depend on the benefits that are derived by the production departments from those service departments. For example, the maintenance service department costs may be reapportioned to the production departments based on the time spent maintaining the machinery in each of the production departments.

An added complication relating to reapportionment, which you may encounter in the exam, is where the organisation may have reciprocal service departments, where two or more departments perform services for each other. This makes reapportionment of the service department overheads to the production departments difficult, as some of the overheads for one service department will be included in the overheads of another.

The answer is to use the “repeated distribution method”, an example of which we will look at next month.

The service department overheads are reapportioned to ensure that all of the overheads relating to the production process are within the production departments and ready for the calculation of the overhead absorption rates. There are six methods that can be used to calculate the overhead absorption rates:

- rate per unit;
- rate per labour hour;
- rate per machine hour;
- rate as % of direct wages;
- rate as % of direct materials;
- rate as % of prime costs (the total of direct cost).

The calculation of the overhead absorption rates involves taking the estimated overhead – the overhead for each of the production departments after allocation, apportionment and reapportionment – and dividing it by an estimated activity level for each production department.

In the earlier example, ABC’s budgeted production overhead absorption rate for the forthcoming period was £250,000 ÷ 100,000 = £2.50 per unit. This is the rate that ABC would use to charge production overhead to its cost unit.

You may not be told in the exam which
method to use, so you will need to decide. ABC uses a rate per unit. Most organisations calculate the production overhead absorption rates on a time basis—a rate per hour for machine or labour. This is because overheads normally increase in relation to time. Therefore, the longer a unit spends in the production department, the more overhead it should be charged.

You should note however that, if an organisation produces just one product, the production overhead charge per unit would be the same regardless of the method used to calculate the overhead absorption rate. If this was the case, as with ABC, the organisation would probably use the rate per unit method.

If a method is not specified in the exam then ask yourself questions. Is the organisation producing more than one product? Is the production department machine- or labour-intensive? Once you have determined the departmental overhead absorption rate it can be used to charge an element of production overhead to the cost unit.

Overhead absorption rates are usually predetermined (calculated in advance of the period to which they relate). If we did not use an estimated overhead absorption rate and simply depended on an actual rate there would be fluctuations in the value of the cost unit. For example, where repair costs may be high one month and low the next, by using an actual rate we would absorb more of the real repair costs in our cost units one month compared with the next.

The problem of using actual rates is compounded by not knowing the overheads incurred until the end of an accounting period. The organisation is unable to report stock valuation and product profitability accurately and setting appropriate selling prices becomes difficult.

It is therefore unlikely that the estimated overhead charged to our cost units will be the same as the actual overhead cost incurred during the period. This difference is calculated by comparing the absorbed overheads—those charged to our cost units, based on the estimate—with the actual overheads incurred during the period. If the amount charged to our cost units is greater than the actual incurred, we have overabsorbed the overheads. In other words, we have charged too much overhead to our cost units and vice versa.

These differences arise for two reasons. First, the actual activity may be different from that used to calculate the overhead absorption rate. Second, the estimated overheads may be different from what was actually incurred.

Let’s look at an example of under-absorption. During the period, ABC recorded the following actual results:

- actual output – 110,000 units;
- actual production overheads incurred – £300,000.

The under- or over-absorption value is:

- absorbed – (£2.50 x 110,000) £275,000;
- actual production overhead incurred – £300,000;
- under absorption – £25,000.

So how do you deal with the under- or over-absorption of the overheads to the cost units? One possible solution is to go back and adjust the overhead charge to the cost unit to take account of this. In reality, however, this would not be practical. Alternatively, you could carry the difference in the overhead account into the next period, but again this cannot be the answer, as it would simply distort future reporting.

The usual treatment of under- or over-recovery of overhead is to account for it as a period cost and adjust the profit and loss account accordingly. So if you have overabsorbed—in other words, charged too much to the cost unit—then you credit the profit and loss account with the value of the over-absorption. If you have underabsorbed—charged too little to your cost unit—then you debit the profit and loss account with the value of the under-absorption.

Following on from our example above, ABC would account for the £25,000 under-absorption as follows:

- debit – profit and loss account;
- credit – production overhead account.

Organisations should review their overhead absorption rates regularly to ensure they are set at an appropriate level. Charging too much overhead to a cost unit may cause over-pricing and could result in lost business. On the other hand, charging too little overhead to a cost unit could result in setting selling prices too low.

It is virtually impossible to avoid under- or over-absorption of overheads altogether but, by regularly reviewing and updating the rates, the amounts involved can be kept to a minimum.

Louise Burke is the examiner for management accounting fundamentals at foundation level and co-author of the CIMA Study System for Management Accounting Fundamentals

Next month: how to answer an objective test question on absorption costing