# MET1 Paper P3 2007
# Management Economics and Accounting
# CRIB (P. Guest)

It should be recognised that for questions of the type found in this examination there is no unique first class answer. In addition, the clarity of the structure and the logical construction of an argument are as important as demonstrating knowledge of the material.

## Section A

1.

(a) The candidate should show knowledge of the work of Porter's analysis of industry competition in his Competitive Strategy (1980). The five main competitive forces are within industry competition, substitute products, barriers to entry, buyer power, and supplier power. The candidate should describe each in some detail, explaining the way in which these factors determine competition.

(b) The candidate should consider the way in these five competitive forces can be measured in practice. For example, one aspect of within industry competition can be measured using concentration ratios. Alternatively, the presence of substitute products can be measured using the cross-elasticity of demand, in particular by examining price movements between substitute products.

(c) The candidate should consider these issues with regard to an industry of their choosing. The candidate is free to select any particular geographical region. The candidate could outline any future role for government policy in shaping competition within the chosen industry.

2.

The answer could first address the different objectives that management may have. These motives could be divided into profitability motives and managerial utility objectives. The former would include economies of scale, market share and diversification gains. The latter would include managerial salaries, power, prestige, perks, risk reduction and protection from acquisition. The next part could address the constraints on the management's pursuit of growth. The Marris model shows that growth can be obtained at the cost of lower market valuation. The view that there are severe constraints suggests that the market for corporate control or other disciplinary actions such as investor activism are very efficient. The candidate should critically examine this view.

## Section B

3.

(a) The answer should explain the key differences between acquisition and merger accounting. The most important difference is that with acquisition accounting an intangible asset called goodwill is created, and the candidate should explain what this consists of and how it is accounted for. The other differences are that with merger accounting; target assets and creditors are consolidated at pre merger book value; target pre-merger reserves are included in acquirer reserves and available for dividend payment; acquirer accounts reflect target's profit for full

merger year; previous year's accounts are restated as if merger in effect at that time. The candidate should note that merger accounting will have a more favourable impact on profitability but no impact on cash flow. The candidate could note the criteria that have to meet for merger accounting to be employed.

(b) The candidate should note that in the UK since 1998 purchased goodwill must be capitalised and either:

- amortised over its useful economic life or not amortised if not appropriate, or;
- if the useful economic life exceeds 20 years, or if the goodwill is not amortised, then the value must be reviewed annually for impairment

Impairment is a reduction in the recoverable amount of an asset below its carrying value. The "capitalise-amortize" method has the advantages of bring simple and cheap to implement, and the treatment is consistent with the treatment for other assets. However, amortisation is even more arbitrary than other assets, and it also encourages acquirers to inflate target fair values to decrease goodwill. The "hold with impairment" method avoids annual reduction in profits but may produce more volatile year-to-year profits, and if goodwill becomes impaired, the charge in any one year can be huge. In recent years companies have suffered massive goodwill impairment (e.g., AOL $54bn). The method makes sense where goodwill is indefinite, and the advantage is that it gives the most accurate value of goodwill. However, the problem comes in actually valuing goodwill accurately, and acquirers reporting any impairment. A third method is to immediately write-off the goodwill to the income statement, which is consistent with the treatment of other intangible assets. However, goodwill on acquisition is much easier to value and this approach appears overly conservative. Finally, the goodwill could be immediately written off to reserves. This method existed in the UK prior to FRS10 in 1998 and gives the same result as merger accounting and is therefore subject to the same criticisms. Furthermore, it also encourages acquirers to write-down fair value of target assets, thus increasing goodwill which is written off thus improving profitability

(c) In considering the weaknesses of merger accounting the candidate could note the following:

- Having two methods of accounting for same underlying transaction makes it difficult for investors to compare firms financial performance
- The transparency provided by purchase accounting is far superior to pooling of interest. Pooling doesn't make management accountable for the investments it has made
- Merger accounting is perhaps appropriate if a genuine merger takes place. However, virtually all business combinations are acquisitions, and thus all business combinations should be accounted for in the same way that other asset acquisitions are accounted for – based on the values exchanged

These are the arguments made by the US Financial Accounting Standards Board (FASB) to justify the banning of merger accounting in the US. The FASB also noted that eliminating pooling would increase financial reporting comparability between US acquisitions and those in other countries, since every other major country had either outlawed or severely restricted the use of pooling The candidate should also note that the method of accounting matters because firms spend real resources trying to achieve merger accounting, despite the fact that the two methods have no impact on cash flow. The candidate could consider why this occurs (i.e. stock market inefficiency, or management remuneration being tied to profitability). The candidate should

consider whether there is still a legitimate case for acquirers to use merger accounting under certain conditions.

4.
(a) The candidate should define the following:

(i) The accruals concept is consistent with the realisation concept in that revenues and costs are recognised as they are earned or incurred, not as money is received or paid. This distinguishes accruals accounting from cash accounting. Under cash accounting it is the time of payment or receipt of cash that determines in which accounting period a transaction should be accounted for. Under accruals accounting it is the time an expense is incurred or revenue earned that determines the accounting period in which the transaction is accounted for.

(ii) The matching concept requires the revenues earned by a business to be matched with the expenses incurred in earning those revenues. In reality the revenues of a specific transaction are not matched with the expenses of that transaction but the revenues of each accounting period are matched with the expenses of that period. The difficulty associated with this is of course identifying which accounting period benefits from certain types of expense. For example, an asset such as plant or machinery that will enable revenues to be earned over several accounting periods should be charged as an expense in the form of depreciation to each period that will benefit.

(iii) The quick ratio measures the company's ability to meet existing current liabilities by excluding inventory from the current ratio in its calculation, as this is the least liquid current asset.

(iv) Share premium as the amount resulting from issuing shares at a price higher than their par value, and that this item must be disclosed in the balance sheet as a reserve.

(b)

**Profit & Loss Account as at 31 December 2006**

| | | £,000 |
|---|---|---|
| Revenue | | 1400 |
| Initial stock | 0 | |
| Plus purchases | 620 | |
| Minus end stock | (195) | |
| Cost of goods sold | | 425 |
| Wages | | 72 |
| **Gross profit** | | 903 |
| Administrative expenses | | 525 |
| Bad debt | | 32 |
| Depreciation | | 104 |
| **Operating profit** | | 243 |
| Interest paid | | 12 |
| **Profit on ordinary activities before taxation** | | 231 |
| Taxation on profit on ordinary activities | | 69 |
| **Profit after taxation attributable to ordinary shareholders** | | 161 |
| Dividends on preference shares | | 8 |
| Dividends on ordinary shares | | 60 |
| **Retained profit** | | 93 |

**Balance Sheet as at 31 December 2006**

| | | £,000 |
|---|---|---|
| **Fixed assets** | | |
| Equipment at cost (purchased on 31st March 2006) | 1,400 | |
| Cumulative depreciation | 104 | |
| | | 1,297 |
| **Current assets** | | |
| Debtors | | 288 |
| Stock | | 195 |
| Wages | | 8 |
| Cash | | 60 |
| | | 551 |
| **Current liabilities** | | |
| Creditors | | 220 |
| Administrative expenses | | 25 |
| Tax | | 69 |
| Dividends | | 40 |
| | | 354 |
| **Net current assets** | | 197 |
| **Total assets less current liabilities** | | 1,493 |
| **Long term liabilities** | | |
| Loans (6%) | | 200 |
| Preference share capital | | 200 |
| | | 400 |
| **Net assets** | | 1,093 |
| **Capital & reserves** | | |
| Ordinary share capital | | 800 |
| Share premium account | | 200 |
| P&L account | | 93 |
| **Shareholders funds** | | 1,093 |

**Section C**

5.

(a) The candidate is expected to outline some of the main differences between traditional costing with volume-based allocation and activity-based costing, including the following:

- Traditional costing collects costs by functional unit and by type. Activity-based costing collects costs by activity.
- Thus activity-based costing requires an activity analysis, usually conducted by a group drawn from a range of functions within the firm.
- Traditional costing adopts a fixed vs. variable distinction for costs, whereas activity-based costing has a much broader view of the causes of cost variation.
- Traditional costing usually allocates overheads using one or a few volume-based allocation bases, such as labour hours or machine hours. In activity-based costing a series of cost drivers are determined with the intention that overheads are charged to cost units using some form of business rationale, for example, invoice costs are charged in relation to the number of invoices.
- Traditional costing is used for preparing accounting reports, but is recognised as being of limited value for decision-making. Proponents of activity-based costing argue that activity-based costs are valuable for many types of decision-making.
- Activity-based costing has a wider view of variability and will trace the consequences of actions outside of the traditional operational areas. For example, decisions about how a product will be manufactured may have significant effects on procurement costs.
- Activity-based costs can be viewed as a series of building blocks that can be used for a range of different purposes, such as budgeting and cost management.

(b)

(i)

Overhead allocation rate is total annual customer-related costs divided by total quantity ordered per year: £0·48 per unit

| Customers | 1 | 2 | 3 |
|---|---|---|---|
| | £ | £ | £ |
| Profit before customer costs | 160,000 | 102,000 | 200,000 |
| Customer costs (quantity x overhead allocation rate) | 76,800 | 48,960 | 96,000 |
| Profit after customer-related costs | 83,200 | 53,040 | 104,000 |
| Profit % on profit before customer costs | 52% | 52% | 52% |

(ii)

**Cost driver calculation**

| | | |
|---|---|---|
| Order costs per order | £120 | Order costs / Number of orders per year |
| Invoice costs per invoice | £30 | Invoice issuing costs / Number of invoices issued per year |
| Delivery pack costs per pack | £22 | Delivery pack costs / Delivery packs assembled per year |
| Delivery mileage per mile | £0.35 | Delivery mileage costs / Total annual delivery mileage |
| Delivery fixed costs per unit | £0.06 | Delivery fixed costs / Quantity ordered per year |

**Number of delivery packs (Quantity ordered per year / delivery pack size)**

| Customers | 1 | 2 | 3 |
|---|---|---|---|
| | 400 | 1020 | 200 |

**Activity based customer profitability**

| Customers | 1 | 2 | 3 | *Note* |
|---|---|---|---|---|
| | £ | £ | £ | |
| Profit before customer costs | 160,000 | 102,000 | 200,000 | |
| *less Customer costs* | | | | |
| Order costs | 5,760 | 14,400 | 2,880 | Number of orders per year x cost per order |
| Invoice costs | 720 | 3,600 | 720 | Number of invoices issued per year x cost per invoice |
| Delivery pack costs | 8,800 | 22,440 | 4,400 | Number of delivery packs per year x cost per pack |
| Delivery mileage costs | 13,440 | 16,800 | 2,520 | Deliveries per year x distance per average delivery x cost per mile |
| Delivery fixed costs | 10,071 | 6,420 | 12,588 | Units ordered per year x delivery fixed costs per unit |
| Total annual customer-related costs | 38,791 | 63,660 | 23,108 | |
| Net profit per customer | 121,209 | 38,340 | 176,892 | |
| Net profit % on profit after customer costs | 76% | 38% | 88% | |

(c) All customers appear to earn the same rate of profit under the traditional method, and each customer appears equally profitable. The net profit will change directly in line with sales. The activity-based costing approach indicates that there are significant differences in profitability between customers; in this sample the net profit % of customer 3 is much greater than that of customer 2. There is a range of possible managerial actions.

- Attempt to raise the prices for customers, such as 2, to compensate for the higher costs that they are causing. This may not be possible if Smith's position in the market is weak.
- Seek to negotiate different conditions with customers who are imposing higher costs on Smiths. For example, increasing the delivery pack size for customer 2 to 200 would yield cost savings of £11,220 and increase the profit rate to 49%.
- Examine any scope for cost reduction within Smiths. For example, reducing invoice and order costs would have a proportionately larger effect on the customers who had high levels of these costs, such as customer 2.
- Combinations of the above.

6.

(a)
The candidate should note that pricing is a crucial aspect of a company's success, that firms can adopt various different pricing policies. Given a particular pricing policy, there are several different techniques for setting price. These techniques rely on cost information that is gathered by the management accounting system. The candidate should describe in critical detail these different techniques. The "Optimal price setting approach" sets marginal revenue to marginal cost, and hence uses the demand and marginal revenue curves to profit maximize. The advantages are that it is accurate and realistic. The disadvantages include the facts that one must have realistic estimates of demand at different price levels but it is very difficult in practice to make such estimates, and that price is only one factor that influences demand and controlling for these other factors is difficult. The "full cost plus pricing" method adds a percentage mark up for profits to full cost. The advantages include the facts that it is simple, quick and cheap and allows prices to be justified to customers. However, the disadvantages are that it is unlikely to profit maximise, price depends on demand conditions and depends on overhead absorption rates. Furthermore, it is inflexible in the short run and ignores opportunity costs. The "variable cost plus pricing" method adds a profit margin to the variable cost and has the advantages of being simple and easy to use (avoiding complexity and arbitrariness of fixed overhead apportionment). It avoids the problem of over- / under-absorption of fixed overheads due to unanticipated variation in activity and hence false sense of security that fixed costs will necessarily be absorbed. It is convenient where there is a readily identifiable basic variable cost, the size of mark-up can be varied, and it draws attention to contribution and the effects of higher or lower sales on profit. The disadvantages are that it ignores demand conditions and ignores fixed costs in the pricing decision. Finally, with the "minimum pricing" method can be employed if a firm is willing to charge a price that leaves it no worse off than if it did the next most profitable thing. In this case, must take into account the incremental costs used and the opportunity costs used. The minimum price is unlikely to be the actual price charged, but is useful because it shows the absolute minimum below which price should not be set and the incremental profit that would be obtained from any charge in excess of minimum. Whether a firm will use minimum pricing depends on the nature of its business and the technique can also be used to establish whether to fulfil a special order. For example, a firm with regular source of income but spare capacity would cover its longer-term running costs in its prices for regular products and therefore pricing for say, special orders, need take no account of fixed costs. However, a firm that has no regular source of income and relies exclusively on its ability to respond to demand (e.g., consulting firm) would be less likely to do so. The candidate should distinguish between costs (and revenues) that are relevant and those that are not. Irrelevant costs are past (or sunk or committed) costs, and future costs that do not vary with the decision, whilst relevant costs are opportunity costs which are the cost of being deprived of the next best option and future costs that do vary with the decision (incremental costs). The candidate should note that firms must be careful about the signal sent out to other customers using the minimum pricing method.

(b)
The candidate should note that the pricing of goods and services that are bought and sold between divisions within the same group (transfer pricing) is renowned as a difficult issue. Economic theory suggests that where there is a perfect market, the transfer price should be marginal cost (which will equal marginal revenue in a perfect market). However, very few companies operate

in perfect markets. From this position it has been argued that where there is no external market for the good or service, marginal cost will always produce a transfer price that will maximise the profits of the whole group. Under restrictive assumptions this will be true, but it ignores the behavioural implications that arise, particularly for the divisions that make substantial losses. For example, if a division transfers all output at marginal cost it would produce a loss equal to its fixed costs. These behavioural implications are in many respects the key issue in determining a transfer price and they cannot be ignored. Ideally a transfer price would cause each division to operate at a level that maximises the profits for the whole group. In reality this is not simply a technical issue as profits are determined in part by the motivation of managers. Some theorists have argued that the best transfer price is one that maximises the effort of managers. It is further argued that motivation is often improved by decentralization and autonomy and so the transfer price must be as close to market prices as possible. In fact there is good evidence that if a clear market price exists, that should be used as the transfer price, possibly with a small adjustment. However in many instances there is no single market price. This occurs whenever a product or service is unique for a particular customer, and may also occur when products and services are of different quality. Many firms adopt a consistent approach to pricing regardless of whether the customer is another division or an external company. In most instances divisions set prices based on full cost plus a profit margin. The definitions of cost and the size of the margin vary widely. Thus it is very common for transfer prices to be set using a cost plus formula. Some companies use this as a basis for negotiation between divisions, as there are good grounds for arguing that an internal transfer gives rise to lower costs than an external sale. For example there will be no marketing costs or bad debts.

**Section D**

7

(a) The candidate should contrast the NPV approach and/or the IRR techniques with other methods such as the payback method. The importance of taking into account the actual timing of cash flows should be explained. Answers should make clear that the NPV and IRR methods will give the same accept / reject decision, but may result in different rankings of projects. A good answer may mention the appropriate treatment of risk (adjustment of the numerator, or the denominator) and inflation.

(b) The discounted cash flow approach requires determination of the discount rate, i.e., the cost of capital. The discount rate should be the marginal cost of capital to the firm, but this is difficult to know. The student should define and discuss the weighted average cost of capital. The candidate should discuss the various sources of finance – retentions, new equity and debt, and how we can measure the cost of capital for each. The cost of debt is easy to determine when the debt is traded as we can divide the annual interest payments by the current market value of debt. If not traded the firm can observe similar firms whose debt is traded. The major difficulty is with determining the cost of equity. The candidate should discuss the dividend valuation model and CAPM and their limitations. Finally, a good answer will briefly mention the risk of the investment.

8

(a) The candidate should recognise that dividends may have both real effects and signalling effects on the market value of a company. For example, investors value the information content of dividends and may refuse to believe a firm's reported earnings unless they are backed up by an appropriate dividend policy. The candidate should consider the different schools of thought on dividend policy. The dividend irrelevance theory argues that under certain conditions, the retention ratio will have no impact on market value. The work of Miller and Modigliani showed the irrelevance of dividend policy in a world without taxes, transaction costs, or other market imperfections. However, the rightists argue that high dividends will increase market value, because of reasons such as irrational investor behaviour and natural clienteles for high payout stocks. On the other hand, the leftists argue that if dividends are taxed more heavily than capital gains, investors should pay more for stocks with low dividend yields. In other words, they should accept a lower pre-tax rate of return from securities offering returns in the form of capital gains rather than dividends. The candidate should critically consider the empirical evidence in this area and how important these factors are likely to be in practice. The empirical evidence shows in favour of the leftist position with high yielding stocks also having higher rates of return. However, there are drawbacks with the empirical approaches. Following the Tax Reform Act of 1986 the tax rates on capital gains and dividends were equalised and this largely undercut the leftists' arguments. The distinction between capital gains and dividends is also less important for financial institutions, many of which operate free of all taxes and therefore have no reason to prefer capital gains to dividends or vice versa.

(b) Management will take into account the above factors if applicable in determining the firm's retention ratio. However, empirical evidence shows that firms have long run target dividend payout ratios. Managers focus more on dividend changes than on absolute levels. Dividend changes follow shifts in long run, sustainable earnings. Managers "smooth" dividends. Transitory earnings changes are unlikely to affect dividend payouts. Managers are reluctant to make dividend changes that might have to be reversed. They are particularly worried about having to rescind a dividend increase.