## MARK PLAN AND EXAMINER'S COMMENTARY

The marking plan set out below was that used to mark this question. Markers were encouraged to use discretion and to award partial marks where a point was either not explained fully or made by implication. In many cases, more marks were available than could be awarded for each requirement. This allowed credit to be given for a variety of valid points which were made by candidates.

### General point about candidates' handwriting

As in previous papers, there were a number of instances in the scripts where the markers found it extremely difficult to read the candidates' handwriting. If a marker is unable to read what has been written then no marks can be awarded for the passage in question.

### QUESTION 1

### Total marks: 35

**General comments**
This question had the lowest average mark on the paper. Candidate performance was, in general, poor.

This was a three-part question that tested the candidates' understanding of the investment decisions element of the syllabus and there was also a small section with an ethics element to it. In the scenario the founders of a private UK engineering company were planning to sell their majority shareholding. In part (a) candidates were required to advise the founders of a range of suitable prices for their shareholding and the strengths and weaknesses of each of the valuation methods chosen. In part (b) they were required to explain how the Shareholder Value Analysis (SVA) approach to company valuation differs from the methods that they chose in part (a). Finally in part (c) candidates were required to explain the ethical issues facing a firm of ICAEW Chartered Accountants when asked to give valuation advice to the founders of a company for which they also provide an annual external audit.

**1(a)**

| | | | |
|---|---|---|---|
| **Total asset value (historic)** | | | |
| Value per share | | £9,115/3,000 | **£3.04** |
| (or 60% x 3000 x £3.04 = £5,472,000 in total) | | | |
| **Total revalued assets** | | | |
| [9,115 + 10,250 + 4,025 + 488 – 11,635] | | £12,243/3,000 | **£4.08** |
| (or 1800 x £4.08 = £7,344,000) | | | |
| | | | |
| **Earnings valuation (Earnings x P/E)** | | | |
| | | | |
| **Separating 2012-14 from 2015 in the calculations and not simply using 2012-15 average** | | | |
| | | | |
| Average annual earnings 2012-4 **(W1)** | | £1,277 | |
| Average p/e ratio | (18.5 + 19.0 + 14.4 + 16.5)/4 = | 17.1 | |
| Total value | £1,277 x 17.1 | £21,836 | |
| Value per share | £21,836/3,000 | | **£7.28** |
| (or 1800 x £7.28 = £13,104,000) | | | |
| Adjustment for using listed p/e's (take off, say, 30%) | | £7.28 x 70% | **£5.10** |
| | | | |
| | | | |
| Current 2015 earnings | | 1,739 | |
| Average p/e ratio | | 17.1 | |
| Total value | £1,739 x 17.1 | £29,737 | |
| Value per share | £29,737/3,000 | | **£9.91** |
| (or 1800 x £9.91 = £17,838,000) | | | |
| Adjustment for using listed p/e's (take off, say, 30%) | | £9.91 x 70% | **£6.94** |

**Working 1**

| PAST EARNINGS | 2012 £'000 | 2013 £'000 | 2014 £'000 | 2015 £'000 |
|---|---|---|---|---|
| Profit before interest and tax | 1,840 | 1,880 | 1,875 | 2,450 |
| less: Interest (£4,150 x 6%) | (249) | (249) | (249) | (249) |
| Profit before tax | 1,591 | 1,631 | 1,626 | 2,201 |
| less: Tax at 21% | (334) | (343) | (341) | (462) |
| Earnings | 1,257 | 1,288 | 1,285 | 1,739 |

Average 2012-4 (£1,257 + £1,288 + £1,285)/3 1,277

***Note:*** *Candidates could also earn marks here by using the 2012-15 earnings data as a whole but would have been penalised for not separating 2012-4 from 2015 – the latter's earnings are atypically high.*

*Average PAIT 2012-15 = (£2,011.25 – £249) x 0.79 = £1,392*
*Value = 17.1 x £1,392/3,000 = £7.93*

**Dividend valuation**

| | | | |
|---|---|---|---|
| Average dividend yield (2.5% + 3.4 % + 2.9% + 3.6%)/4 | | 3.1% | |
| Dividends | £660/3.1% | £21,290 | |
| | | £21,290/3,000 | **£7.10** |
| (or 1,800 x £7.10 = £12,780,000) | | | |
| Adjustment for using listed yields (take off, say, 30%) | | £7.10 x 70% | **£4.97** |

**Commentary**

- Based on the above figures the price range is approximately £3 to £7 per share.
- Bear in mind the Rowes' wish to sell 60% of the shares and this would give the purchaser control of the business – thus a premium would be payable.
- Asset values – historic so not equal to MV and only considers tangible assets and ignores income. Revalued figures are better as they are more up to date, but they still have the same disadvantages.
- The P/E ratio is normally a better guide as it considers the earnings creating potential of the company rather than just the value of its assets. However this year's earnings are much higher than the previous three years so it is prudent to consider past earnings as well as current. Is 2015 an unusual year or will earnings now be at this level?
- Buying the shares would give control and the purchaser will be looking forwards and intending to generate future earnings from Limehouse, not liquidate (asset strip) it as in asset values. It will be necessary to discount (by, say 30%) this p/e valuation because Limehouse's shares will be less marketable.
- The dividend yield approach is most effective when an investor is looking for dividend income rather than control. As with P/E it will be necessary to discount (by, say 30%) the yield valuation because Limehouse's shares will be less marketable. If earnings are growing from 2015 then perhaps future dividend growth should be allowed for in the calculation.

Part (a) was not answered well by most candidates. Many showed a real lack of understanding of how to value a company and a small minority could produce no calculations at all. Very few of them were able to apply their learning to the specific scenario. For example, the vast majority of the candidates said that one of the disadvantages of the P/E approach was that earnings might be erratic, but then made no use of the data in the question which showed exactly that problem. So the candidates' overall performance here was disappointing. This was perhaps the most straightforward set of calculations that the examining team has set on this topic. The errors which stood out because they were so fundamental were:

- Not knowing the basic accounting equation of net assets = equity. Many candidates failed to deduct the debentures in arriving at an equity valuation. A sizeable minority of candidates just used non-current assets as the value, ignoring net current assets and the debentures.
- Using profits before interest and tax (PBIT) as the earnings figure.
- Taking the most recent PBIT figure without question when it was clearly, and deliberately, way out of line with the figures for the previous three years.
- Using the Gordon growth model to calculate a growth rate for dividends which hadn't changed for four years.
- Reducing a dividend yield, for the non-marketability of the company's shares, rather than increasing it.

| | |
|---|---|
| Total possible marks | 23 |
| Maximum full marks | 23 |

**1(b)**

Shareholder value analysis (SVA) is an income measure (not asset based) and concentrates on a company's ability to generate value and thereby increase shareholder wealth. SVA is based on the premise that the value of a business is equal to the sum of the present values of the cash flows generated by all of its activities rather than the earnings or dividends.

The value of the business is calculated from the cash flows generated by drivers 1-6 which are then discounted at the company's cost of capital (driver 7). SVA links a business' value to its strategy (via the value drivers).

The seven value drivers are a key element of the SVA approach to valuing a company.

1. Life of projected cash flows
2. Sales growth rate
3. Operating profit margin
4. Corporate tax rate
5. Investment in non-current assets
6. Investment in working capital
7. Cost of capital

The majority of a DCF value estimate comes from the "residual value", the worth of the company at the end of the projection period. That, naturally, depends heavily on the cash flows estimate in the final year modelled – a result, logically, of the trend in the early years.

Candidates fared better in part (b), but weaker candidates could not identify the seven drivers of value in SVA, nor could they discuss how the technique could be used to value a business.

| | |
|---|---|
| Total possible marks | 8 |
| Maximum full marks | 8 |

**1(c)**

CWS is already the external auditor for Limehouse – so there's a possible conflict of interest here.
CWS will need to establish separate teams and "Chinese walls".
Limehouse directors may be keen for a low valuation of the company – thus pressure could be applied to CWS re the external audit. There could be intimidation or a self-interest threat.
CWS should behave with integrity.
CWS should behave objectively.

In general, part (c) was done well and the vast majority of candidates produced good answers.

| | |
|---|---|
| Total possible marks | 4 |
| Maximum full marks | 4 |

## QUESTION 2
## Total marks: 35

**General comments**
This question had the highest percentage mark on the paper and the vast majority of candidates produced answers of a "pass" standard.

This was a four-part question that tested the candidates' understanding of the financing options element of the syllabus. It was based around a kitchenware manufacturing company which was planning to raise capital to fund an expansion of the business. This capital would be raised either by (i) a rights issue of ordinary shares or (ii) an issue of new debentures. Part (a) of the question required candidates to demonstrate the impact of the two funding options on the company's profits. Within this they were required to calculate the resultant earnings per share (EPS) and gearing figures. In part (b) they were then asked to make use of their calculations from part (a) to evaluate the impact of the two funding methods on the company and its shareholders. Part (c) used the scenario to test the candidates' understanding of the Efficient Market Hypothesis (EMH) and behavioural finance. Part (d) required candidates to apply their understanding of dividend policy theory to the scenario.

**2(a)**

**(i)**

| **Projected Income Statements for the year to 31 August 2016** | **Rights Issue £'000** | **Debenture Issue £'000** |
|---|---|---|
| Sales (£25,800 x 1.20) | 30,960 | 30,960 |
| Variable costs (60% x sales) | (18,576) | (18,576) |
| Fixed costs (£4,900+ £1,500) | (6,400) | (6,400) |
| Profit before interest | 5,984 | 5,984 |
| Interest [W1] | (410) | (824) |
| Profit before tax | 5,574 | 5,160 |
| Tax @ 21% | (1,171) | (1,084) |
| Profit after tax | 4,403 | 4,076 |
| Dividends [W2] | (3,700) | (3,125) |
| Retained profit | 703 | 951 |

**Workings**

| **W1** | | **£'000** | **£'000** |
|---|---|---|---|
| Current interest payment | £8,200 x 5% | 410 | 410 |
| Extra interest from debt issue | £6,900 x 6% | 0 | 414 |
| Total | | 410 | 824 |

| **W2** | | **£'000** | **£'000** |
|---|---|---|---|
| Current dividend payment | (£3,125/12,500 = £0.25/share) | 3,125 | 3,125 |
| Extra dividend from rights issue | (£6,900/£3) x £0.25 | 575 | 0 |
| Total | | 3,700 | 3,125 |

**(ii)** Earnings/share (EPS) £4,403/(12,500 + 2,300) £0.30
£4,076/12,500 £0.33

**(iii)** Gearing ratio $\frac{£8,200}{£31,145 + £703 + £6,900}$ 21.2%

$\frac{£8,200 + 6,900}{£31,145 + £951 + £6,900}$ 38.7%

In part (a) most candidates got full marks for the equity and debt income statements, although a disappointing number of them failed to calculate correctly the number of additional shares in the rights issue. Also, when calculating the EPS figure, a minority of candidates used, incorrectly, the company's retained earnings or dividends figure. Few candidates scored full marks when calculating the new gearing figures. The main reason for this was that candidates couldn't reflect correctly the impact of the additional £6.9m funds raised in the gearing ratio.

| | |
|---|---|
| Total possible marks | 15 |
| Maximum full marks | 15 |

**2(b)**

| | | |
|---|---|---|
| Current earnings/share | £3,958/12,500 | £0.32 |
| Current gearing ratio (book value) | £8,200 / £31,145 | 26.3% |

Rayner's EPS figure worsens with the rights issue (dilution because of extra shares issued), but improves (marginally) with the issue of debt (tax relief on interest a factor here).

However, Rayner's gearing ratio (currently 26.3%) decreases to 21.2% with the equity issue, but increases quite significantly with the extra debt (up to 38.7%). The latter may be considered rather high. Note that the gearing is based on book values rather than market values (MV's) and were MV's to be taken into account the gearing levels would be considerably lower. For example:

| | | |
|---|---|---|
| Current gearing at MV (assuming debt is quoted at par) | Equity (12,500 x £3.45) | £43,125 |
| | Debt | 8,200 |
| | | 51,325 |

Gearing ratio at current MV (£8,200/£51,325) 16.0%

The projected income statements show that there is a high level of coverage for interest payments under both options and therefore, the relatively high level of gearing with the debt issue is unlikely to be a problem providing future profits are maintained at the projected level.

In part (b) candidates' discussion of the implications of their calculations from part (a) was, generally, very weak. Too few of them compared their predicted EPS and gearing figures to the current figures. Also too many of them allowed their understanding of the M&M theory of gearing to dominate their answers, rather than answering the question asked.

| | |
|---|---|
| Total possible marks | 7 |
| Maximum full marks | 7 |

**2(c)**

**The marketing director feels that the shares are overpriced**

However, the efficient markets hypothesis (EMH) holds that stock markets are considered in the main to be efficient, i.e. all share prices are "fair". Investment returns are those expected for the risks undertaken. Information is rapidly and accurately incorporated into share values. When share prices at all times rationally reflect all available information, the market in which they are traded is said to be efficient. In efficient markets investors cannot make consistently above-average returns other than by chance.

An efficient market is one in which share prices reflect all of the information available. There are three levels of efficiency:

**Weak Form** - prices only change when new information about a company is made available. There are no changes in anticipation of new information. Information arrives in a random manner (the random walk theory) and so the chartist theory (technical analysis) will not hold up here. The market is efficient in the weak form if past prices CANNOT be used to earn consistently abnormal profits.
**Semi Strong Form** - prices reflect all information about past price movements and all knowledge that is publicly available/anticipated. The market can anticipate price changes before new information is formally announced. The market is efficient in the semi-strong form if publicly available information (e.g. historical share prices, dividend announcements) CANNOT be used to earn consistently abnormal profits.
**Strong Form** - share prices reflect all information about past price movements, all knowledge that is publicly available/anticipated and from insider knowledge available to specialists or experts. The market is efficient in the strong form if all information (private and public) CANNOT be used to earn consistently abnormal profits.

**The marketing director feels that investors are irrational**

Behavioural finance is an alternative view to the EMH because of investors' irrational tendencies such as :

| | | |
|---|---|---|
| Overconfidence | Representativeness | Narrow framing |
| Miscalculation of probabilities | Ambiguity aversion | Positive feedback |
| Cognitive dissonance | Availability bias | Conservatism |

Part (c) was generally answered well. Candidates who scored lower marks failed to explain properly (i) the three forms of EMH and/or (ii) the key elements of behavioural finance.

| | |
|---|---|
| Total possible marks | 8 |
| Maximum full marks | 7 |

**2(d)**

The danger of radically altering the dividend policy is that Rayner's shareholders will sell their shares and share price will fall. This is the clientele effect. Rayner should establish a consistent policy and stick to it. Dividends also have a signalling effect and a sudden decrease in dividend may well have a negative impact on market confidence in the company.

Reference to main dividend policy theory:

**Traditional theory** - Shareholders would prefer dividends today rather than dividends or capital gains in future. Cash now is more certain than in the future.

**M&M theory** - share value is determined by future earnings and the level of risk. The amount of dividends paid will not affect shareholder wealth providing the retained earnings are invested in profitable investment opportunities. Any loss in dividend income will be offset by gains in share price.

Overall, part (d) was answered well.

| | |
|---|---|
| Total possible marks | 7 |
| Maximum full marks | 6 |

## QUESTION 3

## Total marks: 30

**General comments**
The average mark for this question was very good and most candidates demonstrated a good understanding of this area of the syllabus.

This was a four-part question which tested the candidates' understanding of the risk management element of the syllabus. In the scenario a manufacturing company was investigating how it might manage various aspects of its proposed expansion overseas. Part (a) required candidates to calculate the sterling income arising from a range of hedging techniques applied to a Californian sales contract. In part (b) candidates were required to advise the company's board of whether it should hedge those Californian (dollar) receipts. Part (c) required candidates to explain the different types of currency risk that could arise were the company to expand its operations overseas. In part (d) the company was planning to invest its income from the Californian contract in a UK deposit account in six months' time. Candidates were asked to explain how the company could hedge its exposure to interest rate risk.

**3(a)**

**(i)**

| | | | |
|---|---|---|---|
| £ strengthens | $\frac{\$5.3m}{(1.5398 \times 1.05)}$ | $\frac{\$5.3m}{1.6168}$ | **£3,278,080** |
| £ weakens | $\frac{\$5.3m}{(1.5398 \times 0.95)}$ | $\frac{\$5.3m}{1.4628}$ | **£3,623,188** |

**(ii)**
**Money market hedge (MMH)**

| | | | |
|---|---|---|---|
| Receipt in sterling would be | $\frac{\$5.3m}{[1 + (2.8\%/2)]}$ | $\frac{\$5.3m}{1.014}$ | $5,226,824 borrowed |
| Converted at spot rate | $\frac{\$5,226,824}{1.5398}$ | £3,394,483 | |
| Invested at 3.6% p.a. | £3,394,483 x [1 + (3.6%/2)] | | **£3,455,583** |

**(iii)**
**OTC currency option**
A put option would be used (i.e. at $1.5280/£)

| | | | |
|---|---|---|---|
| Receipt in sterling would be | $\frac{\$5.3m}{1.5280}$ | £3,468,586 | |
| less: Option premium | 5.3m x £0.005 | (26,500) | |
| | | | **£3,442,086** |

**(iv)**
**Forward contract (FC)**

| | | | |
|---|---|---|---|
| Receipt in sterling would be | $\frac{\$5.3m}{(1.5398 - 0.0084)}$ | $\frac{\$5.3m}{1.5314}$ | £3,460,885 |
| less: Arrangement fee | 5.3m x £0.003 | (15,900) | |
| | | | **£3,444,985** |

Most candidates' answers to part (a) were good, but common errors noted were
(i) incorrect calculations when strengthening or weakening sterling by 5% e.g. adding or subtracting 0.05,
(ii) using a call option rather than a put option and (iii) omitting the fee for the forward contract.

| | |
|---|---|
| Total possible marks | 10 |
| Maximum full marks | 10 |

**3(b)**

| | | |
|---|---|---|
| Sterling receipt at spot rate | $5.3m / 1.5398 | **£3,442,005** |

A weaker £ (using 5% change) gives the highest receipt and vice versa for stronger £

The FC premium suggests a weakening of sterling.

MMH gives best outcome and this is £13k higher receipt than from the option. A rate of $1.5221/£ is break-even point for the option (i.e. a 1.14% weakening of sterling).

The option gives the company some flexibility unlike the MMH or the FC.

IMT's directors' attitude to risk important.

Other relevant points

Part (b)'s discussion was, overall, reasonable. However, too many candidates, as in Question 1, failed to link their calculations from part (a) to their advice, relying in part (b) on their understanding of the relevant theory.

| | |
|---|---|
| Total possible marks | 9 |
| Maximum full marks | 9 |

**3(c)**

Currency risks:
**Transaction risk** – the risk of adverse exchange rate movements occurring in the normal international trading transactions as in (a) above.
**Economic risk** - the effect of adverse exchange rate movements on the international competitiveness of a company. So sales prices in one currency (customers) could become less competitive whilst costs might become more expensive in another currency (suppliers)
**Translation risk** – the risk that the company will make exchange losses when the accounting results of its overseas branches are translated into sterling.

Candidates' performance in part (c) was very variable and, whilst there were many good answers, too many candidates wrote about other types of risk rather than the currency risk specifically asked about in the requirement and will have scored zero marks.

| | |
|---|---|
| Total possible marks | 6 |
| Maximum full marks | 6 |

**3(d)**

Interest rate risk:
**Forward Rate Agreement (FRA)** – this is the equivalent of a forward contract on short-term interest rates. It is purchased OTC from its bank. It allows lenders to fix a rate of interest on a future deposit.
**Interest rate futures** – these are similar to FRA's except that the terms, amounts and periods are standardised. Futures contracts are traded on a futures exchange. Buying an interest rate future equates to investing in debt.
**Interest rate options** – these grant the buyer of the option the right, but nor the obligation to deal at an agreed interest rate at a future maturity date. They allow an organisation to limit its exposure to adverse interest rate movements, while allowing it to take advantage of favourable interest rate movements.

Part (d) was, mostly, answered well, but a lot of candidates suggested an interest rate swap, which would be totally inappropriate in this scenario.

| | |
|---|---|
| Total possible marks | 6 |
| Maximum full marks | 5 |