Answers

This solution is intended to assist candidates by providing an indication of the possible content of an answer. In using the solution for study purposes candidates should note that other relevant material would also be awarded marks.

1 (a) (i) Financing requirements for Centaur Magazines Ltd

	Year ended 31 January					
	2006	**2007**	**2008**	**2009**	**2010**	**2011**
	£000	**£000**	**£000**	**£000**	**£000**	**£000**
Sales	180,000	206,000	252,000	312,000	356,000	382,000
NPAT (15%)	27,000	30,900	37,800	46,800	53,400	57,300
Dividends (60% NPAT)	16,200	18,540	22,680	28,080	32,040	34,380
(a) Cap. employed (80% sales)	144,000	164,800	201,600	249,600	284,800	305,600
Equity (Increased by retained profit)	90,000	102,360	117,480	136,200	157,560	180,480
Max. loans (60% equity)	54,000	61,416	70,488	81,720	94,536	108,288
(b) Funds available	144,000	163,776	187,968	217,920	252,096	288,768
Shortfall (b – a)	–	(1,024)	(13,632)	(31,680)	(32,704)	(16,832)

(ii) Financing requirements for Centaur Radio Ltd

	Year ended 31 January				
	2007	**2008**	**2009**	**2010**	**2011**
	£000	**£000**	**£000**	**£000**	**£000**
Sales	80,000	87,000	98,000	107,000	116,000
Operating profit (10%)	8,000	8,700	9,800	10,700	11,600
Add Depreciation*	2,100	3,380	4,750	5,270	5,520
	10,100	12,080	14,550	15,970	17,120
Working capital	(5,300)	(5,500)	(5,200)	(5,100)	(4,420)
Operating cash flows	4,800	6,580	9,350	10,870	12,700
Investment outlay	(12,700)	(12,800)	(13,700)	(5,200)	(2,500)
Cash surplus/(deficit)	(7,900)	(6,220)	(4,350)	5,670	10,200

Note that the dividend requirements of the parent company are not included in the cash surplus/(deficit) figures shown above. Their inclusion would show a much bleaker picture.

* Depreciation calculation

	Year ended 31 January				
	2007	**2008**	**2009**	**2010**	**2011**
	£000	**£000**	**£000**	**£000**	**£000**
Cumulative investment	12,700	25,500	39,200	44,400	46,900
New depreciation (10%)	1,270	2,550	3,920	4,440	4,690
Existing depreciation	830	830	830	830	830
	2,100	3,380	4,750	5,270	5,520

(b) Comments on Centaur Magazines Ltd financing plans may include:

- Sales, profits and net assets are expected to more than double over the next five years;
- The total dividends paid to the parent company over the period more than cover the financing needs of the company. Foregoing dividends during the period may, therefore, be an alternative to raising new finance;

Comments on the Centaur Radio Ltd financing plans may include:

- Sales are expected to rise by 55% over the next five years. This may not be sufficient to meet the expectations of the directors of Centaur Communications plc.
- A large increase in the asset base is required (gross investment £73·4 million) to achieve the increase in sales of £41 million by the end of the period;
- The assumption that the additional depreciation charges will have no effect on the net profit margin is surprising given the size of these charges, particularly in the later years. More information on the cost savings is, therefore, required.
- There would be insufficient cash to finance the annual dividend needs of the parent company.

The approach to establishing financing needs adopted in (a)(i) above provides more approximate figures than those provided (a)(ii). The former approach relies heavily on assumptions that existing relationships (e.g. sales to capital employed) will continue in the future. Such assumptions may not be very reliable, particularly where new strategies are being adopted or where investment is being made in new technologies. The approach used in (a)(ii), however, is less dependent on the continuation of existing relationships (for example, specific forecasts are provided for investment outlays). The approach used in (a)(i) also fails to account precisely for depreciation, which is a non-cash item that should be added back to profit in arriving at operating cash flows. However, the approach used in (a)(ii) calculates the depreciation charges for each year during the forecast period.

It is, therefore, the approach used in (a)(ii) that is likely to provide more reliable information.

(c) Before making a final decision, the board of directors of Centaur Communications plc may consider the following issues:

- A substantial disposal requires shareholder approval. It may, therefore, be useful to check that shareholders agree with the proposal before a final decision is made;
- The effect of the disposal will be to reduce the size of Centaur Communications plc by a significant amount. This may lead to a loss of benefits, such as benefits of scale, and may increase vulnerability to takeover;
- The effect of the disposal will also be a less well diversified business, which may increase the level of risk;
- Other options to that of divestment, such as replacing the existing management team, may be investigated;
- Other forms of divestment, such as a demerger, may also be investigated;
- Selling off Centaur Radio Ltd through competitive bidding may maximise sales proceeds.

(d) (i) Internal rate of return

The IRR calculations shown below are based on the key assumptions discussed in the case study. As the cash generated will be used to repay the loan, a calculation of the cash available each year to repay the loan is required.

Cash available to repay loan

			Year to 31 January		
	2007	**2008**	**2009**	**2010**	**2011**
	£000	**£000**	**£000**	**£000**	**£000**
Sales	78,000	82,000	88,000	95,000	104,000
Operating profit (10%)	7,800	8,200	8,800	9,500	10,400
Add Depreciation*	1,210	1,640	2,200	2,540	2,880
	9,010	9,840	11,000	12,040	13,280
Working capital	(1,000)	(800)	(200)	(400)	(100)
Operating cash flows	8,010	9,040	10,800	11,640	13,180
Less Interest on loan**	(2,160)	(2,037)	(1,875)	(1,675)	(1,281)
Investment outlay	(3,800)	(4,300)	(5,600)	(3,400)	(3,400)
Cash to repay loan	2,050	2,703	3,325	6,565	8,499

* Depreciation calculation

	Year to 31 January				
	2007	**2008**	**2009**	**2010**	**2011**
	£000	**£000**	**£000**	**£000**	**£000**
Cumulative investment	3,800	8,100	13,700	17,100	20,500
New depreciation (10%)	380	810	1,370	1,710	2,050
Existing depreciation	830	830	830	830	830
	1,210	1,640	2,200	2,540	2,880

** Interest and loan calculation
Initial loan
The amount of loan finance required can be calculated as follows:

	£000
Purchase price (12 x £7,500)	90,000
Less Contribution from shareholders (£48,600 + £5,400)	54,000
Loan finance required	36,000

Loan interest charges and capital repayments

	Year to 31 January				
	2007	**2008**	**2009**	**2010**	**2011**
	£000	**£000**	**£000**	**£000**	**£000**
Loan at start of year	36,000	33,950	31,247	27,922	21,357
Cash to repay loan	(2,050)	(2,703)	(3,325)	(6,565)	(8,499)
Loan at end of year	33,950	31,247	27,922	21,357	12,858
Interest (6%)	(2,160)	(2,037)	(1,875)	(1,675)	(1,281)

Proceeds from sale of investment

	£000
Proceeds from sale of company (14 x £10,400)	145,600
Less Loan to be repaid	12,858
Proceeds available to ordinary shareholders	132,742
Less Amount due to management team (10%)	13,274
Proceeds available to Astrid Ltd	119,468

The IRR can now be calculated
Trial 1 using a discount rate of 20% (i.e. the cost of capital)

	£000
£119,468 x 0·402	48,026
Less Initial Investment	48,600
Net present value (NPV)	(574)

The IRR is slightly below this figure as the net present value (NPV) is negative.
Trial 2 using a discount rate of 19%

	£000
£119,468 x 0·419	50,057
Less Initial Investment	48,600
Net present value (NPV)	1,457

Thus the IRR is = 19% + 1%[1,457/(1,457 + 574)] = 19·7% which is just below the cost of capital. Thus, accepting the investment proposal would reduce shareholder wealth.

Note: As the cash flows are a simple outflow (of £48,600) followed, five years later by an inflow (of £119,468), the IRR can also be determined, simply and accurately from the solution to the equation:
48,600 = 119,468/(1 + IRR)^5
Thus:

(1 + IRR)^5	= 119,468/48,600
(1 + IRR)^5	= 2·458183
(1 + IRR)	= 2·458183^0.2
(1 + IRR)	= 1·19708
IRR	= 19·708%

(ii) Improving the IRR

This may be done by increasing the level of gearing adopted by the company. By increasing the proportion of borrowings, the equity shareholders will benefit from a gearing effect. Let us assume that 50 per cent of the purchase price was borrowed.

Initial loan

The amount of loan finance required can be calculated as follows:

	£000
Purchase price (12 x £7,500)	90,000
Less Contribution from shareholders (£40,500 + £4,500)	45,000
Loan finance required	45,000

Cash available to repay loan

	Year to 31 January				
	2007	2008	2009	2010	2011
	£000	£000	£000	£000	£000
Sales	78,000	82,000	88,000	95,000	104,000
Operating profit (10%)	7,800	8,200	8,800	9,500	10,400
Add Depreciation	1,210	1,640	2,200	2,540	2,880
	9,010	9,840	11,000	12,040	13,280
Working capital	(1,000)	(800)	(200)	(400)	(100)
Operating cash flows	8,010	9,040	10,800	11,640	13,180
Less Interest on loan*	(2,700)	(2,609)	(2,482)	(2,318)	(1,963)
Investment outlay	(3,800)	(4,300)	(5,600)	(3,400)	(3,400)
Cash to repay loan	1,510	2,131	2,718	5,922	7,817

*** Loan interest charges and capital repayments**

	Year to 31 January				
	2007	2008	2009	2010	2011
	£000	£000	£000	£000	£000
Loan at start of year	45,000	43,490	41,359	38,641	32,719
Cash to repay loan	(1,510)	(2,131)	(2,718)	(5,922)	(7,817)
Loan at end of year	43,490	41,359	38,641	32,719	24,902
Interest (6%)	(2,700)	(2,609)	(2,482)	(2,318)	(1,963)

Proceeds from sale of investment

	£000
Proceeds from sale of company (14 x £10,400)	145,600
Less Loan to be repaid	24,902
Proceeds available to ordinary shareholders	120,698
Less Amount due to management team (10%)	12,070
Proceeds available to Astrid Ltd	108,628

The IRR can now be calculated

Trial 1 using a discount rate of 20% (i.e. the cost of capital)

	£000
£108,628 x 0·402	43,669
Less Initial Investment	40,500
Net present value (NPV)	3,169

The above trial indicates that the IRR is higher than the cost of capital as the NPV is positive. A further trial, using a higher discount rate is required.

Trial 2 using a discount rate of 22%

	£000
£108,628 x 0·370	40,192
Less Initial Investment	40,500
Net present value	(308)

Thus the IRR is a little below 22%. This is above the cost of capital of Astrid Ltd and means that the investment proposal is now expected to increase shareholder wealth. However, the additional borrowing makes the investment more risky and so an increase in the required rate of return may be needed to compensate for the additional financial risk.

Note: Once again, the cash flows are a simple outflow (of £40,500) followed, 5 years later by an inflow (of £108,628) and so the IRR can also be determined from the equation:

$40{,}500 = 108{,}628/(1 + \text{IRR})^{\wedge 5}$

Thus:

$(1 + \text{IRR})^{\wedge 5} = 108{,}628/40{,}500$

$(1 + \text{IRR})^{\wedge 5} = 2{\cdot}682173$

$(1 + \text{IRR}) = 2{\cdot}682173^{\wedge 0{\cdot}2}$

$(1 + \text{IRR}) = 1{\cdot}21814$

$\text{IRR} = 21{\cdot}814\%$

(e) (i) Due diligence investigations can cover a variety of areas and may involve gathering information relating to:

– Financial performance and position including audited financial statements, budgets, details of major expenses, contingent liabilities, and accounting policies;
– Material contracts and agreements, including credit agreements, lease agreements and financial relationships with banks and other financial institutions;
– Litigation and disputes with suppliers, customers and government agencies, such as the Inland Revenue, Customs and Excise and Ofcom;
– Employees and directors including employment agreements, compensation for loss of office, incentive schemes, and details of any disputes;
– The quality of assets held including details of ownership rights, current market values and current condition;
– Technology including fitness for purpose, usability and maintainability.
– Competitive environment including details of main competitors, reputation of the company within the market and main market drivers;
– Regulatory environment including relevant regulations governing the industry and their implications for the company.

(ii) Various factors should be considered when deciding between AIM and the main market. The main advantages of the main market are that:

– The company will have a higher profile, which may be helpful in its dealings with suppliers, customers and lenders;
– Financing for future growth can be easily raised by well-regarded companies as large institutional investors dominate the market;

The main advantages of AIM are that:

– It specialises in smaller companies and attracts investors that are seeking to invest in smaller companies. (It is often claimed that smaller companies are overlooked on the main market.);
– Fewer conditions are imposed on companies seeking to join the market. (For example, there is no minimum requirement for a trading record whereas for the main market, it is three years.);
– The costs of flotation are less than on the main market. (Flotation fees on the main market can consume up to 10% of the total amount raised in an initial public offering.);
– There is no minimum requirement for the proportion of shares to be held by the public. (For the main market, it is 25%);
– There is no requirement to seek prior approval from shareholders for substantial acquisitions and disposals. (For the main market, prior approval must be sought.);
– Smaller companies can switch to the main market when it has outgrown AIM.

				Marks
1	**(a)**	**(i)**	2 marks for each correct line of calculations	14
		(ii)	2 marks for correct operating profit line, 4 marks for correct depreciation line, 1 mark each additional correct line (max. 4 marks)	10
	(b)		7 marks for comments relating to companies, 3 marks for comparison of approaches	10
	(c)		2 marks per point (max. 10 marks)	10
	(d)	**(i)**	3 marks for correct depreciation calculation, 6 marks for correct calculation to repay loan, 3 marks for correct interest charges and capital repayments, 2 marks for correct calculation of loan requirement, 2 marks for correct calculation of proceeds available to Astrid Ltd, 4 marks for IRR calculations	20
		(ii)	2 marks for suggesting additional gearing, 6 marks for repeating methodology as in (i) above, (inc. 2 marks for IRR)	8
	(e)	**(i)**	2 marks per point (max. 14 marks)	14
		(ii)	2 marks per point (max. 14 marks)	14
				100