



Mark Scheme (Results)

January 2021

Pearson Edexcel International Advanced Level
In Accounting (WAC12)
Unit 2: Corporate and Management Accounting

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Statement of Changes in Equity of Bangla Aluminium plc for year ended 31 December 2020

Q1 Mark scheme Figures are in £ millions	Ordinary Share of £1 Capital £	Share Premium £	Retained Earnings £	General Reserve £	A Capital Replacement Reserve (1)AO1 £	B Foreign Exchange Reserve (1)AO1 £	C Revaluation Reserve (1)AO1 £	Total Equity £
(i) Balance at 1 January 2020	54	8	16	7 (1)AO1 All four				85 (1)AO2
(ii) Final Dividend			(9.18) (1)AO2					(9.18)
(iii) Transfer			(3) (1)AO1		3 (1)AO1			-----
(iv) Transfer				(2) (1)AO1		2 (1)AO1		-----
(v) Revaluation							4.8 (1)AO2	4.8
(vi) Rights Issue	2.7 (1)AO2	0.378 (1)AO2						3.078 (1)AO2 All three
(vii) Transfer			3 (1)AO1		(3) (1)AO1			-----
(viii) Interim Dividend 2020			(3.402) (1)AO2					(3.402)
(ix) Loss for the year			(3.91) (1)AO2					(3.91) (1)AO2Both
(x) Balance at 31December 2020	56.7	8.378	(0.492) (1o/f) AO2	5	---	2	4.8 (1o/f)AO2	76.386 (1o/f)AO2

(a) [AO1] 10 [AO2] 12

AO1: Ten marks for correct labelling of account headings, insertion of opening balances and transfers in February, March and August.

AO2: Twelve marks for correct calculation and insertion of figures into statement for revaluation of property, rights issue of shares, interim dividend, loss for the year, total equity column, and end of year balances row.

(b)

[AO1] 2

AO1: Three marks for correct identification of capital reserves

Share Premium (1)AO1 Revaluation reserve (1)AO1 Ordinary Share Capital (1)AO1 (3)

(c) [AO2] 5

AO2: Five marks for correct calculation of maximum payable per share

Maximum amount payable

$$= \frac{(0.492)(10/f)AO2 + 5(10/f)AO2 + 2(10/f)AO2}{56.7(10/f)AO2} = 11.47 \text{ pence per share } (10/f)AO2 \text{ (5)}$$

(d) [AO1] 2 [AO3] 6

AO1: Two marks for entry of retained earnings and capital replacement reserve.

AO3: Six marks for entries of property, revaluation reserve, equipment, bank or supplier, retained earnings and profit & loss account.

Date	Details	Debit	Credit
		£m	£m
Feb 12	Retained earnings	3 (1)AO1	
	Capital Replacement reserve		3 (1)AO1
April 21	Property	4.8 (10/f)AO3	
	Revaluation reserve		4.8 (10/f)AO3
May 11	Equipment	2.9 (1)AO3	
	Bank / Supplier		2.9 (1)AO3
Dec 31	Retained earnings	3.91 (1)AO3	
	Statement of Comprehensive Income/ Profit & Loss/Appropriation account		3.91 (1)AO3

(8)

(e) [AO1] 2 [AO2] 4

AO1: One mark for correct formula

AO2: Four marks for correct calculation of gearing

The gearing ratio at 31 December 2020, using the formula $\frac{\text{Debt}}{\text{Debt} + \text{Equity}}$ (1)AO1

$$\frac{(23.614 (1)AO2 + 60) (1)AO2}{(23.614 + 60) (1)AO1 + 76.386 (1o/f)AO2} = \frac{83.614}{160} = 52.26\% (1o/f)AO2 \quad (5)$$

(f) **Mark scheme**

[1 AO1] [1 AO2] [4 AO3] [6 AO4]

Own figure rule applies.

Positive points

The debenture was taken out by Bangla Aluminium plc to expand the business which may bring in future profits.

The debenture interest will mean that future profits after interest may be reduced which means less tax is payable.

A debenture issue avoids the need for a further share issue and possible dilution of control of the existing shareholders of the business.

Negative points.

The gearing ratio of Bangla Aluminium plc has increased from 35% to 52% (o/f), an increase of 17% (o/f). This now makes the company highly geared as the ratio is over 50% (o/f).

A highly geared company is a risky company as it may have problems paying large amounts of interest to lender. Failure to pay interest, or pay back loans or debentures may see lenders take possession of Bangla Aluminium plc's assets or wind up the company.

High levels of interest to be paid may mean Bangla Aluminium plc have difficulty trying to make a profit. This year the company made a loss of £3.91 million. This may mean problems paying dividends to shareholders which may result in the share price falling.

A high geared company such as Bangla Aluminium plc may have problems if they try to raise further finance as lenders may think the risk of non-payment too great.

Conclusion

Bangla Aluminium plc is now a highly geared company which is risky. The disadvantages of high gearing are greater than the advantages of high gearing.

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	0	A completely incorrect response.
Level 1	1- 3	Isolated elements of knowledge and understanding which are recall based. Weak or no relevant application to the scenario set. Generic assertions may be present.
Level 2	4 - 6	Elements of knowledge and understanding, which may be applied to the scenario. Chains of reasoning are present, but may be incomplete or invalid. A generic or superficial assessment is present.
Level 3	7 - 9	Accurate and thorough understanding, supported by relevant application to the scenario. Some analytical perspectives are present, with developed chains of reasoning, showing causes and/or effects. An attempt at an assessment is presented, using financial and maybe non-financial information, in an appropriate format and communicates reasoned explanations.
Level 4	10 - 12	Accurate and thorough knowledge and understanding, supported throughout by relevant application to the scenario. A coherent and logical chain of reasoning, showing causes and effects. Assessment is balanced, wide ranging and well contextualised using financial and maybe non-financial information and makes an informed decision.

12 marks
Total for Question 1 - 55 marks

Q2.

(a) [AO1 5]

AO1: Five marks for calculating labour hours required to fulfil total demand for a week.

	Pot	Vase	Mug	Plate	Total
Weekly demand	20	18	42	12	
Time taken to produce	15 minutes	10 minutes	20 minutes	30 minutes	
Hours required	5	3	14	6	28
	(1)AO1	(1)AO1	(1)AO1	(1)AO1	(1o/f)AO1

(5)

(b) [AO1 2]

AO1: Two marks for explaining the term limiting factor

A limiting factor is a factor of production (1)AO1 which restricts the level of activity / quantity of output. (1)AO1 (2)

(c) [AO1 3] [AO2 9]

AO1: Three marks including selling price and for calculating contribution per unit for each product.

AO2: Nine marks for calculating the cost of clay material and cost of labour time for each product, and the total costs for each product.

Product	Pot	Vase	Mug	Plate
Selling price	7.00	6.00	6.80	10.00(1)AO1
Less Direct costs				
Clay material	0.70(1)AO2	0.50(1)AO2	0.30 (1)AO2	0.60(1)AO2
Labour time	3.00 (1)AO2	2.00(1)AO2	4.00 (1)AO2	6.00(1)AO2
Total costs	3.70	2.50	4.30	6.60(1o/f) AO2
Contribution	3.30	3.50 (1o/f) AO1 Both	2.50	3.40 (1o/f) AO1Both

(12)

(d) [AO3 6]

AO3: Six marks for calculating order of priority for production

Product	Pot	Vase	Mug	Plate
Contribution	3.30	3.50	2.50	3.40
Time taken to paint	15 minutes	10 minutes	20 minutes	30 minutes
Contribution per labour hour	13.20 (1o/f)AO3	21.00 (1o/f)AO3	7.50 (1o/f)AO3	6.80 (1o/f)AO3
	2	1 (1o/f)AO3 Both	3	4 (1o/f)AO3 Both

(6)

(e) [AO2 6]

AO2: Six marks for calculating the production schedule:

Order of Production	Product	Output	Hours
1	Vase	18 (1o/f) AO2	3
2	Pot	20 (1o/f) AO2	5(1o/f) AO2 Both
3	Mug	42 (1o/f) AO2	14
4	Plate	6 (1o/f) AO2	3(1o/f) AO2 Both

(6)

(f) [AO1 4] [AO2 3]

AO1: Four marks for calculating total contribution, rent, utility bills, and profit.

AO2: Three marks for calculating total contribution for each product and depreciation.

Product	Contribution per unit	Output	Total contribution	
Vase	3.50	18	63.00	Both
Pot	3.30	20	66.00	(1o/f)AO2
Mug	2.50	42	105.00	Both
Plate	3.40	6	20.40	(1o/f)AO2
		Total	254.40	(1o/f)AO1
	Less Fixed Costs	Rent	(40.00)	(1)AO1
		Utility Bills	(30.00)	(1)AO1
		Depreciation	(6.00)	(1)AO2
		Profit	178.40	(1o/f)AO1

(7)

(g)

(i)[AO1 1]

AO1: One mark for calculating hours required for assistant to work.

Hours required = $28 - 25 = 3$ hours. (1o/f) AO1

(1)

(ii)[AO3 3]

AO3: Three marks for calculating total pay for assistant.

3 hours required to produce 6 extra plates (1o/f) AO3

6 extra plates will bring in a contribution of (6×3.40) (1o/f) AO3 = £20.40(1o/f) AO3

(3)

(iii) [AO1 1]

AO1: One mark for calculating hourly rate

Hourly rate = $\frac{£20.40}{3} = £6.80$ per hour(1o/f) AO1

(1)

(h)[1 AO1] [1 AO2] [4 AO3] [6 AO4]

Answers may include:

Financial Aspects

Case For

Maria may be able to undertake keeping her own records accurately. This will reduce the need to hire a costly accountant when calculating annual profits and completing a tax return etc.

Case Against

Maria may find hardware expensive if she has to buy the equipment.

She may find software expensive if she has to buy outright or subscribe monthly,

The small business does not make a great deal of money so any extra expenditure must be justified.

Technical aspects

Case For

A bookkeeping program may ensure Maria keeps financial records in an orderly fashion. She may be very disorganised at the moment when it comes to paperwork etc.

Case Against

Maria may not require an ICT program for her limited bookkeeping requirements. She will not be selling on credit so will not have a list of trade receivables.

The bank statement, available at any time online, will provide the small business with a running bank balance.

The cash till will provide Maria with a running cash balance.

Human aspects

Case For

Maria may find the ICT programmes reduce her workload.

She may find understanding and implementing an ICT programme rewarding.

Case Against

She may find understanding an ICT programme difficult to comprehend and trying to implement an ICT programme frustrating.

Perhaps Maria is a creative individual, who enjoys making pottery and would not enjoy financial tasks on the computer.

Conclusion

The size (small) and nature (no credit given) of Maria's business may mean that she does not really need an ICT program to help her with bookkeeping and finance.

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12 marks

Total marks for Question 2 = 55 marks

Q3. Mark scheme

(a) AO3 (5)

AO3 : Five marks for correct calculation of purchase price.

Number of shares in Waverley = 21 000 000 x 2 = 42 000 000 (1) **AO3**

Number of shares in Peninsular Medicines = $\frac{42\,000\,000}{8}$ = 5 250 000 (1o/f) **AO3**

Three shares trading at £3.52 per share = (5 250 000 x 3) x 3.52 = £55 440 000 (1o/f) **AO3**
 Plus £0.37 cash = 5 250 000 x 0.37 = £1 942 500 (1o/f) **AO3**

Purchase price = £57 382 500 (1o/f) **AO3**
(5)

(b) AO1 (5) AO2 (4)

AO1: Five marks for correct adjustment and entry for all assets except property, and all liabilities.

AO2: Four marks for correct adjustment and entry for property, and calculation of goodwill.

Calculation of goodwill

Value of assets purchased				
Property, plant and equipment	43 616 000	Both		
Plus revaluation of property	3 750 000	(1) AO2		
Less equipment revaluation	(1 400 000)	(1) AO1		
Intangibles	11 500 000	Both		
Plus Calm Balm brand	3 000 000	(1) AO1		
Inventories	6 853 000			
Less revaluation	(940 000)	All three		
Trade receivables	<u>1 019 000</u>	(1) AO1		
Total asset value			67 398 000	
Value of liabilities purchased				
Mortgage	15 574 000	Both		
Bank loan	8 000 000	(1) AO1		
Trade and Other payables	1 683 000	Both		
Less adjustments	(880 000)	(1) AO1		
Total value of liabilities			(24 377 000)	
Purchase price			57 382 500	(1o/f) AO2
Less value of net assets purchased			(43 021 000)	(1o/f) AO2
= Goodwill			14 361 500	(1o/f) AO2

(9)

(c) AO2 (8) AO3 (2)

AO2: Eight marks for all entries of assets and liabilities, cash paid and shares issued.

AO3: Two marks for correct calculation and entry of share premium

<u>Acquisition account</u>							
1 Jan	Mortgage	15 574 000	Both	1 Jn	P P E	45 966 000	(1)AO2
	Bank loan	8 000 000	(1) AO2		Intangibles	14 500 000	(1)AO2
	Trade Payables	803 000	(1) AO2		Inventories	5 913 000	(1) AO2
	Cash	1 942 500	(1o/f)AO2		Trade Receivbles	1 019 000	Both
	Shares of £1 each	15 750 000	(1o/f) AO2		Goodwill	14 361 500	(1o/f)AO2
	Share Premium	39 690 000	(1o/f) AO3				
		<u>81 759 500</u>					
						<u>81 759 500</u>	

Workings for share premium:

15 750 000 shares at a premium of £2.52 per shares = £39 690 000 (1) AO3

(10)

(d) [AO2] 1 [AO3] 2 [AO4] 3

Peninsular Medicines plc have paid £14.36 million goodwill to buy the net assets of Waverley plc which had an agreed value of £43.02 million This represents 33.3% of the net asset value, or 25% of the purchase price.

For Goodwill

If Waverley plc are profitable then goodwill may be justified. We do not know if they are profitable, but the statement of financial position looks healthy and the retained earnings stands at £5 million.

Waverley have at least one well known brand name (Calm Balm) so a large goodwill may be justified. Waverley may have a range of products.

It appears the two companies are in a similar line of business (medicines/pharmaceuticals) so there may be vertical or lateral economies of scale to be enjoyed.

Shareholders may need to be persuaded financially to be taken over by an outside company and have their ownership diluted.

Against Goodwill

We do not know if Waverley is profitable or the width of their product range.

The percentage of goodwill in the purchase is high.

Conclusion

The size of the goodwill may/may not be justified.

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Level 3	5-6	Accurate and thorough knowledge and understanding. Application to the scenario is relevant and effective. A coherent and logical chain of reasoning, showing causes and effects is present. Evaluation is balanced and wide ranging, using financial and perhaps non-financial information and an appropriate decision is made.

Total for Question 3 - 30 marks

Q4 Mark scheme

(a) [AO1] 3 [AO2] 5 [AO1] : Three marks for inclusion of fixed costs, total fixed costs and total variable costs. [AO2] : Five marks for calculation of contribution per room month, and calculation of break-even point.	
Fixed Costs per month	Loan Interest = £2 115 Local tax = £675 Maintenance contract = <u>£395</u> (1)AO1 Total Fixed Costs = £3 185 (1)AO1
Variable Costs per room per month	Electricity = £10 Gas = £10 Water = <u>£5</u> Total Variable Costs = £25 (1)AO1
Contribution per room per month	(£480 - £25) (1o/f)AO2 = £455 (1o/f)AO2
Break even point	= <u>£3 185</u> (1o/f)AO2 = 7 rooms(1o/f)AO2 £455 (1o/f)AO2
8 marks	

(b) [AO1] 4 [AO3] 2

[AO2] : Four marks for calculation of contribution, total fixed costs and profit for year.

[AO3] : Two marks for calculation of total room months rental.

Number of rooms rented out in year:

Number of months of the year	2	4	3	2	1	Total rooms rented in year
Number of rooms rented out	6	7	8	9	10	
Total of rooms	12	28	24	18	10 (1)AO3	

$$\begin{aligned}
 \text{Contribution} &= 92 \times 455 \text{ (1o/f)AO2} = 41\,860 \text{ (1o/f)AO2} \\
 \text{Fixed costs} &= 3\,185 \times 12 = \underline{38\,220} \text{ (1o/f)AO2} \\
 \text{Profit} &= 3\,640 \text{ (1o/f)AO2}
 \end{aligned}$$

(6)

(c) (i) [AO3] 5

[AO3] : Five marks for calculation of margin of safety.

$$\begin{aligned}
 \text{Actual sales revenue} &= (92 \times £480) \text{ (1o/f)AO3} = £44\,160 \text{ (1o/f)AO3} \\
 \text{Break-even sales revenue} &= (7 \times 12 \times £480) \text{ (1o/f)AO3} = £40\,320 \text{ (1o/f)AO3} \\
 \text{Margin of safety} &= £3\,840 \text{ (1o/f)AO3}
 \end{aligned}$$

(5)

(ii)[AO3] 3

[AO3] : Three marks for calculation of margin of safety

$$\text{Margin of safety as a percentage of sales} = \frac{3\,840}{44\,160} \times 100 \text{ (1o/f)AO2} = 8.7\% \text{ (1o/f)AO2}$$

(3)

(d) [AO1] 2

[AO1] : Two marks for explaining an advantage of break-even analysis

An advantage of break-even analysis is that it ensures a business considers the likely outcome of a business proposal. (1)AO1 If the proposal does not look profitable, then adjustments need to be made to the proposal. (1)AO1 (2)

(e) [AO2]1 [AO3]2 [AO4]3

For adopting the new proposal

At present, Capital Residential plc pay £675 a month which is £8 100 per year.

If its predictions are correct, next year there will be 92 monthly room rentals received, which will result in a tax of (£44 160 x 15%) which is £6 624. This would be a tax saving of £1 476

Against the new proposal

If Capital Residential plc rented all rooms out every month, there would be 120 room rentals received. This would give a total revenue of £57 600. The tax at 15% would be £8 640. This would be an increase in tax of £540.

Conclusion

The decision by Capital Residential plc depends upon how many months rental they will receive from the rooms. The “break-even” point for tax is 112.5 monthly (ie 113) room rentals.

The deciding factor would be how many months’ rentals the company expects from the rooms in the next year. If they think they will achieve less than 113 room rentals, they should support the change to 15% of income. If they think they will achieve more than 112 room rentals, they should argue against the change to 15% of income..

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(6)

5. Mark scheme

(a)

(i)

[AO2] : Three marks for correct calculation of ordinary shares issued, preference dividend and earnings per ordinary share.

[AO3] : Two marks for correct calculation of net profit after tax.

$$\text{Earnings per ordinary share} = \frac{\text{Net profit after tax} - \text{preference dividend}}{\text{Issued ordinary shares}}$$

$$= \frac{\pounds 1\,250\,000 \text{ (1)AO3} - \pounds 200\,000 \text{ (1)AO3} - \pounds 240\,000 \text{ (1)AO2}}{28\,000\,000 \text{ (1)AO2}} = 2.89 \text{ pence per share (1o/f) AO2} \quad (5)$$

(ii)

[AO2] : Three marks for correct calculation of interim dividend paid per ordinary share, issued ordinary shares and total dividend per share.

[AO3] : One mark for correct calculation of total ordinary dividend paid in pounds.

$$\text{Dividend paid per share} = \frac{\text{Total ordinary dividend}}{\text{Issued ordinary shares}}$$

$$\text{Interim dividend paid} = 28\,000\,000 \times \pounds 0.0015 = \pounds 42\,000 \text{ (1)AO2}$$

$$= \frac{(\pounds 42\,000 + \pounds 210\,000) \text{ (1o/f) AO3}}{28\,000\,000 \text{ (1) AO2}} = 0.9 \text{ pence per share (1o/f) AO2} \quad (4)$$

(iii)

[AO1] : One mark for correct insertion of total ordinary dividend.

[AO2] : Two marks for correct insertion of net profit after tax and preference dividends and calculation of dividend cover.

$$\text{Dividend cover} = \frac{\text{Net profit after tax} - \text{preference dividend}}{\text{Total ordinary dividend}}$$

$$= \frac{\pounds 810\,000 \text{ (1o/f) AO2}}{\pounds 252\,000 \text{ (1o/f) AO1}} = 3.21 \text{ times (1 o/f)AO2} \quad (3)$$

(iv)

[AO1] : Two marks for correct insertion of market price of share and earnings per share.

[AO2] : One mark for correct calculation of price/earnings ratio.

$$\text{Price/earnings ratio} = \frac{\text{Market price of share}}{\text{Earnings per share}}$$

$$= \frac{32 \text{ p (1)AO1}}{2.89 \text{ p (1 o/f)AO1}} = 11.07 \text{ times (1o/f)AO2} \quad (3)$$

(v)

[AO1] : Two marks for correct insertion of market price of share and dividend per share.

[AO2] : One mark for correct calculation of dividend yield.

$$\begin{aligned} \text{Dividend yield} &= \frac{\text{Dividend per share}}{\text{Market price of share}} \times 100 \\ &= \frac{0.9 \text{ p (1o/f)AO1}}{32 \text{ p (1)AO1}} \times 100 = 2.81\% \text{ (1o/f)AO2} \end{aligned} \quad (3)$$

(vi)

[AO2] : Two marks for correct calculation of value of preference shares and correct calculation of return on capital employed.

[AO3] : Four marks for correct calculation of net profit before interest and tax, value of share capital and inclusion of debenture and reserves in capital employed.

$$\begin{aligned} \text{Return on Capital employed} &= \frac{\text{Net profit before interest and tax}}{\text{Capital employed}} \times 100 \\ &= \frac{\pounds 1\,250\,000 \text{ (1)AO3} + \pounds 450\,000 \text{ (1)AO3}}{(\pounds 14\,000\,000 \text{ (1)AO3} + \pounds 4\,800\,000 \text{ (1)AO2} + \pounds 5\,000\,000 + \pounds 900\,000 + \pounds 300\,000 \text{ (1)AO3 (all three)})} \\ &= \frac{\pounds 1\,700\,000}{\pounds 25\,000\,000} \times 100 = 6.8\% \text{ (1o/f)AO2} \end{aligned} \quad (6)$$

(b) [AO2] 1 [AO3] 2 [AO4] 3

Arguments for software

The software may react quicker than a human response if there is a sudden drop in the market price and selling the shares is advantageous. If Port Shelter Trading plc shares appear to be dropping further, then Benson Pensions will benefit by selling them as soon as possible.

The software will save time if Benson Pensions have a large portfolio of shares which need to be watched over in person. The alternative may be to arrange a meeting to discuss the share price, which may be time-consuming.

Arguments against software

The software follows a “one size fits all” approach and will sell the shares regardless of the individual company’s situation. It is possible that the share price fall may be temporary eg due to a reason outside the control of Port Shelter Trading plc.

The market may be falling as a whole, and this could see a large number of shares sold, much reducing the size of the portfolio.

The ratios for Port Shelter Trading plc are reasonably good. Benson could sell shares in a company that is doing quite well and has a promising future. The shares may rise in the future. Buying the shares back may be at a higher price than at which they were sold.

Conclusion

Using the software may /may not be a good idea for Benson Pensions.

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	0	A completely incorrect response.
Level 1	1-2	Isolated elements of knowledge and understanding that are recall based. Generic assertions may be present. Weak or no relevant application to the scenario set.
Level 2	3-4	Elements of knowledge and understanding, which are applied to the scenario. Some analysis is present, with developed chains of reasoning, showing causes and/or effects applied to the scenario, although these may be incomplete or invalid. An attempt at an evaluation is presented, using financial and perhaps non-financial information, with a decision.
Level 3	5-6	Accurate and thorough knowledge and understanding. Application to the scenario is relevant and effective. A coherent and logical chain of reasoning, showing causes and effects is present. Evaluation is balanced and wide ranging, using financial and perhaps non-financial information and an appropriate decision is made.

(6)

Total for Question 5 = 30 marks

Question 6

(a) AO1 (3) AO2 (12)

AO1: Three marks for calculation of depreciation.

AO2: Twelve marks for calculation of extra costs, including scrap value, net cash flows, and discounted net cash flows.

NPV Calculation	Cost			Scrap		Net		Discount	Discounted	
	Savings	Extra costs		value		cash flow		Factor	Net Cash Flow	
Year 0		135000				(135000)		1	(135000.00)	(1)AO2
Year 1	54000	16000	(1)AO2			38000	both	0.926	35188.00	both
Year 2	54000	16800	both			37200	(1o/f) AO2	0.857	31880.40	(1o/f) AO2
Year 3	54000	16800	(1)AO2			37200	both	0.794	29536.80	both
Year 4	54000	17640	both			36360	(1o/f) AO2	0.735	26724.60	(1o/f) AO2
Year 5	54000	17640	(1) AO2	5000	AO2	41360	(1o/f) AO2	0.681	28166.16	(1o/f) AO2
								Total NCF	16495.96	(1o/f) AO2

Workings:

$$\text{Depreciation per year} = \frac{(\pounds 135\,000 - \pounds 5\,000)}{5} \text{AO1} = \pounds 26\,000 \text{AO1}$$

15 marks

(b)

(i)AO1 (1) AO3 (1)

AO1: One mark for one point made.

AO3: One mark for development.

Answers may include:

One advantage of using the net present value method to assess an investment project is:

It takes into account the falling value of money over time. AO1 thus inflation is accounted for. AO3

The cost of capital could be seen as the target rate of return. AO1 This must be met ie NPV must be positive for the investment to proceed. AO3

(2)

(ii) AO1 (1) AO3 (1)

AO1 (1): One mark for one point made.

AO3 (1): One mark for development.

One disadvantage of using the net present value method to assess an investment project is:

The method may involve a large number of calculations. AO1 This may result in possible errors in the calculations / require skilled staff / take a lot of time. AO3

(2)

(c)AO1 (3): Three marks for calculation of profitability index.

Profitability index of investment

$$= \frac{\text{Net present value} + \text{cost of investment}}{\text{Cost of investment}} = \frac{151\,496 (1\text{o}/\text{f}) \text{ AO3}}{135\,000 (1)\text{AO3}}$$

$$= 1.122 (1\text{o}/\text{f}) \text{ AO3} \quad (3)$$

(d)AO3 (2) One mark for point made and one mark for development.

The profitability index allows the returns of different projects to be compared **AO3** even if the projects are of different size/ initial investment.**AO3**

2 marks

(e) AO2 (1) AO3 (2) AO4 (3)

In favour of Akme Robotics

The net present value of the investment is £16 496 (o/f) which is higher than that of Dijital Solutions plc of £12 000. The difference is £4 496.

In favour of Dijital Solutions

The profitability index of this investment is 1.15 which is higher than that of Akme Robotics plc which is 1.122 (o/f). The difference is 0.028.

The cost of the investment is £80 000 which is £55 000 less than Akme Robotics. It may be easier to raise the smaller sum.

Other points

Both projects will involve staff redundancies.

Conclusion

The profitability index states Dubai Foods should select Dijital Solutions plc for the investment. However, the NPV states choose Akme Robotics.

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(6)

Total for Question 6 – 30 marks

