



ACCA

Paper P4

Advanced Financial Management

Revision Mock Examination

June 2017

Answer Guide

Health Warning!

How to pass

Attempt the examination under exam conditions BEFORE looking at these suggested answers. Then constructively compare your answer, identifying the points you made well and identifying those not so well made.

If you got basic definitions and rules wrong: re-revise by re-writing them out until you get them correct.

How to fail

Simply read or audit the answers congratulating yourself that you would have answered the questions as per the suggested answers.

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Tutorial Help and Key Points

(a)

- MMD is a UK based company and will have no currency exposure on sterling payments and receipts.
- Therefore, only the net dollar receipts and payments should be hedged. From the information given in the question
- MMD may hedge the net dollar exposure using forward contract, money market hedge, futures and options.

Forward contract

- The four months forward rate is not given.
- Use interpolation of the three months and one year forward rates to calculate the four month forward rate.
- Because dollars would be sold for pound in four month forward offer rate of should be fixed under the contract.

Money market hedge

- Calculate the amount to deposit in dollars
- Convert the amount pound sterling into the amount to be deposited using the spot rate
- Borrow the necessary amount in pounds sterling

Futures contract

- Determine the date contract. This is the contract that matures after the transaction date.
- Determine whether to buy/sell to enter the contract and do the opposite to close the contract.
- Calculate the basis at the transaction date.
- Calculate the lock in rate as the futures price plus/minus the basis at transaction date.
- Calculate the total amount under the future hedge.
- Calculate the number of contracts.
- Discuss the advantages and disadvantages of futures contract.

Options contract

- Determine the date contract. This is the contract that matures after the transaction date.
- Determine whether to buy a call option or put option.

- Calculate the number of contracts for each exercise price.
- Calculate the premium for each exercise price.
- Calculate the over/under hedge amount.
- Calculate the final amount for each exercise price.
- Comment on the option contract.

(b)

- XYZ Co's information will be used to estimate the project's asset beta.
- Then based on SUBAN plc's capital structure, the project's equity beta and weighted average cost of capital will be estimated.
- Assume that the beta of debt is zero.

(c)

- Calculate the net present value of the project by discounting the cash flows provided using the cost of capital calculated in (b) above.
- Identify the five variables needed to calculate the value of option to delay: P_a , P_e , r , t and s
- Calculate the $D1$ and $D2$
- Calculate $ND1$ and $ND2$
- Calculate the value of the option to delay as the value of a call option
- Add the value of the option to delay to the NPV to determine the overall value of the project.

(d)

- Discuss the benefits of delaying the project
- Comment on the overall value of the project

Comment on the assumptions and limitations of the Black-Scholes option pricing model in calculating the value of option to delay.

(e)

- Discuss the argument for hedging foreign exchange exposure.
- Discuss the argument for hedging foreign exchange exposure.

Marking scheme

(a)

Forward contract

Four month forward rate	1
Amount payable in pounds under forward contract	½

Money market hedge

Amount deposited in dollars	½
Conversion at spot rate	½
Amount borrowed in pounds	½

Futures contract

December contract	1
Sell to enter	1
Lock in rate	1
Amount in pounds	1
Number of contracts	1

Options contract

Put option to have the right to sell pounds	1
Number of contracts	2
Premium	2
Over/under hedge calculation using forward contract	2
Net outcome	2
Overall conclusion	2

Max 15 marks

(b)

Market value of XYZ equity	1
Combine asset beta of XYZ	1
Other activities asset beta	1
Game production beta	2
Game production equity beta	1
CAPM: cost of equity	1
WACC	1

8 marks

(c)

Value of project without considering option to delay decision and conclusion	2
Current price variable (Pa) for BSOP formula	1
Additional cost (Pe) for BSOP formula	1
Other variables for BSOP formula	1
Calculation of N(d1)	2
Calculation of N(d2)	2
Value of the option to delay decision	1
Revised value of project and conclusion	2

12 marks

(d) 1 to 2 marks per well explained point Max

5 marks

(e) Argument for hedging
Argument against hedging

3 – 4
3 – 4
6 marks

Professional marks

4 marks

Answer

(a)

Report to the Board of Directors (BoD) of MMD plc

This report is to advise MMD plc on an appropriate hedging strategy to manage the foreign exchange exposure in five months' time, the appropriate cost of capital to be used to calculate the net present value of the game project, the value of the project with and without the option to delay. It also discusses the argument for and against hedging foreign exchange exposure.

Hedging foreign exchange exposure (a)

The company can use forward contract, money market hedge, currency futures and currency options. The forward contract results into a net guaranteed payment of £604,341 which is lower than the money market hedge of £609,017. The option is more expensive than the other hedging methods. However, should the dollar weaken more than the relative strike price the company could let the option lapse in order to take advantage of the market exchange rate. The currency futures is more favourable than the forward market. However, futures contract is standardized and there may be over or under hedge. For example the number of contract is as; $\text{£}604,150 / 62500 = 9.67$ contracts. Also currency futures require margin payments and there exist basis risk. Holding all other factors constant MMD should use the futures contract as it gives the lowest net payment of £604,150.

Appropriate cost of capital for the game project (b)

XYZ Co's information was used to estimate the project's asset beta as it is assumed that the business risk of XYZ's film product is same as that of the one undertaken by MMD. Then based on MMD plc's capital structure, the project's equity beta and weighted average cost of capital was estimated as 11% (appendix B).

Value of the game project (c and d)

The overall value of the project was calculated as the net present value of the project plus the value of the option to delay.

The project without the option produces negative net present value of \$2.98 which would be financially unacceptable but with the flexibility provided by real options to delay the project managers could take action to help boost the project's NPV if it falls behind forecast. An option to delay gives the company the right to undertake the project in a later period without losing the opportunity. This option will give the company's managers the time to monitor and take appropriate actions to respond to changing situations such as increase in competition and how popular the film will be within the next two years before it will commit capital and other resources into the project. They can create and take advantage of options in managing the project. The value of the flexibility to delay has a value of \$9.61 which would turn the negative NPV to positive making the overall value of the project \$6.55 million. However, it should be emphasised that the value of the option is based on the Black-Scholes model which has many assumptions such as the risk free rate, the difficulties of calculating the standard deviation which measures the volatility of the present value of the cash inflows. It was also assumed that debt is risk free, hence debt beta is zero.

Argument for and against hedging

The marketing manager's position is based on the theoretical case put forward for not managing corporate risk. In a situation of market efficiency where information is known and securities are priced correctly, holding well diversified portfolios will eliminate (or at least significantly reduce) unsystematic risk. The position against hedging states that

in such cases companies would not increase shareholder value by hedging or eliminating risk because there will be no further reduction in unsystematic risk. In a situation of perfect markets, the cost of reducing any systematic risk will exactly equal the benefit derived from such a reduction. Shareholders would not gain from risk management or hedging, in fact if the costs exceed the benefits due to transactional costs then hedging may result in a reduction in shareholder value.

However, hedging or the management of risk may result in increasing corporate (and therefore shareholder) value if market imperfections exist, and in these situations reducing the volatility of a company's earnings will result in higher cash inflows. Proponents of hedging cite three main situations where reduction in volatility may increase cash flows – in situations: where the rate of tax is increasing; where a firm could face significant financial distress costs due to high volatility in earnings; and where stable earnings increases certainty and the ability to plan for the future and therefore resulting in stable investment policies by the firm.

Active hedging may reduce agency costs. For example, unlike shareholders, managers and employees of the company may not be diversified. Hedging allows the risks exposed to them to be reduced. Additionally hedging may allow managers to not be concerned about market movements which are not within their control and instead allow them to focus on business issues on which they can exercise control. A consistent hedging strategy or policy may be used as a signalling tool to reduce the conflict of interest between bondholders and shareholders, and thus reduce restrictive covenants.

The case for hedging or not is not clear cut and should not be taken on an individual or piecemeal basis. Instead the company should consider its overall risk management strategy and the resultant value creation opportunities. Subsequent hedging decisions should be based on the overall strategy.

Recommendation

It is recommended that the board proceed with the game project, haven taken into consideration the value of the option to delay and all the assumptions associated with the Black-Scholes model used to calculate the value of the option to delay. The company should also take steps to manage it foreign exchange exposure as hedging has many advantages in imperfect market.

Report compiled by:
Date:

Appendix A

Forward contract

Interpolation of the three month and one year forward rates for buying dollars will be needed to calculate the five month forward rate.

This may be estimated as;

3monthrate 1.9066

1yearrate 1.8901

Difference 0.0165

Assuming the rate decline in a linear manner;

5month forward rate = $1.9066 - (0.0165 \times 2/9) = \1.9029

Forward contract will fix the £ payment at: $\frac{\$1,150,000}{1.9029} = £604,341$

Money market hedge

With money market hedge involving payment of dollars, the company should borrow an appropriate amount in pounds sterling today convert it immediately at the spot rate to dollars, place it on deposit account and repay the loan plus its interest on the due date. How much will be borrowed depends on how much is to be invested in order to get the amount of the exposure;

Deposit = $\$1,150,000 / (1 + (0.02 \times 5/12)) = \$1,140,496$

Convert pounds sterling into \$1,140,496 at the spot rate, = $1,140,496 / 1.9156 = £595,373$

Borrow = $£595,373 \times (1 + (0.055 \times 5/12)) = £609,017$

The effective lock in rate = $1,150,000 / 609,017 = \$1.8883$

This is more expensive than the forward contract.

Futures

- What contract? The appropriate contract will be the contract that matures immediately after the transaction date 1st November. This is the December contract, which matures at the end of December.
- Sell: ASK plc should sell December sterling futures
- Basis

Spot rate 1.9156

Future price (December) 1.8986

Basis 0.017

Assuming the basis will decline in a linear manner over the seven months, then the expected basis in five month= $0.017 \times \frac{2}{7} = 0.00486$

Therefore the expected lock-in futures rate may be estimated as: $1.8986 + 0.00486 = 1.9035$ representing a total payment of

$$(1,150,000 / 1.9035) = £604,150.$$

- This is more favourable than the forward market. However, futures contract is standardized and there may be over or under hedge. For example the number of contract is as; $£604,150 / 62500 = 9.67$ contracts Also currency futures require margin payments and there exist basis risk.

Options

- What contract? The appropriate contract will be the contract that matures immediately after the transaction date 1st November. This is the December contract, which matures at the end of December.
- Put option. Since the contract size is denominated in pound sterling, the company will need to sell pound for dollars, therefore it needs to buy a put option to get the right to sell pounds.

- No of contract

(a)	(b)	c=(b/a)	(d)	e=(c/d)
Exercise price	\$	£	contract size	Number of contract
			£	
1.8800	1,150,000	611,702	31,250	19.57 = 19 under hedged
1.9000	1,150,000	605,263	31,250	19.37 = 19 under hedged

- Premium payment

$$1.8800 = 31,250 \times 19 \text{ contracts} \times 2.96 \text{ cent} = \$17,575 \text{ at spot rate of } 1.9156$$

=£9,175

$$1.9000 = 31,250 \times 19 \text{ contracts} \times 4.34 \text{ cent} = \$25,769 \text{ at spot rate of } 1.9156$$

=£13,452

- Under hedge (using forward contract)

$$1.8800 = 1.8800 \times 31,250 \times 19 = \$1,116,250 - \$1,150,000 = \$37,750 \text{ at forward rate of } 1.9029 = \textbf{£17,736}$$

$$1.9000 = 1.9000 \times 31,250 \times 19 = \$1,128,125 - \$1,150,000 = \$21,875 \text{ at forward rate of } 1.9029 = \textbf{£11,496}$$

- Overall outcome

Basic cost = $31250 \times 19 \text{ contracts} = £593,750$

Exercise price	Basic cost (£)	Premium	Under hedged	Total cost
1.8800	593,750	9,175	17,736	620,661
1.9000	593,750	13,452	11,496	618,698

The option is more expensive than the other hedging methods. However, should the dollar weaken more than the relative strike price the company could let the option lapse in order to take advantage of the market exchange rate.

Holding basis risk constant the futures contract will be recommended as it gives the lowest net payment.

Appendix B

(b)

XYZ Co's information will be used to estimate the project's asset beta. Then based on MMD plc's capital structure, the project's equity beta and weighted average cost of capital will be estimated. Assume that the beta of debt is zero.

XYZ Co Market value of equity = $\$1.20 \times 400\text{m shares} = \480m

XYZ Co Market value of debt = $\$96\text{m}$

XYZ Co combined asset beta = $1.40 \times \$480\text{m} / (\$480\text{m} + \$96\text{m} (0.7)) = 1.228$

XYZ Co asset beta of other activities = $1.25 \times \$360\text{m} / (\$360\text{m} + \$76.8\text{m} (0.7)) = 1.088$

Combined asset beta was calculated as the weighted average of the asset betas of game production and other activities. So given the combined asset beta and asset beta of other activities, we can calculate the asset beta of the game production as follows:

$1.228 = \text{game production asset beta} \times 0.25 + 1.088 \times 0.75$

Game production asset beta = $[1.228 - (1.088 \times 0.75)] / 0.25 = 1.648$

Game production equity beta based on MMD plc capital structure =

$1.648 \times [(\$18\text{m} + \$3.6\text{m} (0.7)) / \$18\text{m}] = 1.879$

Using CAPM, game project: $K_e = 3.5\% + 1.879 \times 4.5\% = 11.96\%$

WACC Game project:

$= (11.96\% \times \$18\text{m} + 4.5\% \times \$3.6\text{m}) / (\$18\text{m} + \$3.6\text{m}) = 10.72\% = 11\%$

Appendix C

(c)

The overall value of the project is the net present value of the project plus the value of the option to delay.

Net present value of the project without the option to delay

Year	0	1	2	3	4	5	6
Cash flows	(7)	(7)	(35)	25	18	10	5
Discount factor (11%)	1.000	0.901	0.812	0.731	0.659	0.593	0.535
Present value	(7)	(6.31)	(28.42)	18.28	11.86	5.93	2.68

Net present value = - \$2.98

Option to delay

An option to delay gives the company the right to undertake the project in a later period without losing the opportunity creating a call option on the future investment.

P_a = Present value of future cash inflows from the project. This is the present value from years 3 to 6 = $(18.28 + 11.86 + 5.93 + 2.68) = 38.75$

P_e = Exercise price = 35, t = Exercise date = 2 years, r = Risk free rate = 3.5%,
 s = Volatility = 30%

$$d_1 = \frac{[\ln(38.75/35) + (0.035 + 0.5 \times 0.302) \times 2]}{(0.30 \times \sqrt{2})} = 0.6170$$

$$N(d_1) = 0.5 + 0.2324 = 0.7324$$

$$d_2 = 0.6170 - (0.30 \times \sqrt{2}) = 0.1927$$

$$N(d_2) = 0.5 + 0.0753 = 0.5753$$

$$\begin{aligned}\text{Value of option to delay} &= (38.75 \times 0.7324) - (35 \times 0.5753 \times e^{-0.035 \times 2}) \\ &= 28.38 - 18.77 \\ &= \$9.61\end{aligned}$$

$$\text{Overall value of the project} = \$9.61 - \$2.98 = \$6.55 \text{ million}$$

The overall net present value of the project with the option to delay is positive and therefore the project is financially acceptable.

Answer 2

Tutorial Help and Key Points

(a)

Corporate value is the present value of free cash flow using the WACC as the discount factor:

$FCF = PBIT - \text{tax} + \text{non cash flows} - \text{cash investment in working capital and non-current assets.}$

$$\text{Corporate value} = \frac{FCF_0 (1 + g)}{WACC - g}$$

Equity value = corporate value – debt value

(b)

Cash offer

Compare the cash offer of \$2.55 to the current market price of \$2.90.
Calculate the percentage gain.

Share exchange

Calculate the market value of the combined business as the sum of the earning of the two companies, plus a synergy value of \$150,000 and multiply by the combined P/E ratio of 15 times.

Calculate the combined business number of shares by adding the new shares to be issued to acquire Aimtown Co ($2,400,000 \times 2/3$) to the current number of share of Kenswoth Co.

Calculate the market price of combined business as the combined market value divided by combined number of shares.

Calculate the gain.

(c)

Discuss the reactions of the shareholders of the two companies by comparing the percentage gain on cash and share offers. Also discuss the advantages and disadvantages of each offer.

(d)

Discuss the argument for and against employing a strategy of diversification through M/A

Marking scheme

(a)

Calculation of free cash flows	3
Calculation of company value	2
Calculation of equity value	1
Calculation of share price	1

	7

(b)

Cash offer

Additional value created for Kenswoth Co shareholders	3
Value created per share for Aimtown Co shareholders	1

Share-for-share offer

Expected share price for the combined company	2
Value created for Aimtown Co share	1
Value created for Kenswoth Co share	1

	8

(c)

Discussion

Aimtown Co shareholders	2
Kenswoth Co shareholders	2
Assumptions made	2

	6

(d)

Argument for	2
Argument against	2

	4

Answer

(a)

Estimating the current value of Aimtoun Co share, using the free cash flow to firm methodology:

Corporate value is the present value of free cash flow using the WACC as the discount factor:

$$\text{Corporate value} = \frac{\text{FCF}_0 (1 + g)}{\text{WACC} - g}$$

FCF = PBIT – tax + non cash flows – cash investment

$$\text{FCF} = \$1,230,000 - (\$1,230,000 \times 20\%) + \$1,206,000 - \$110,000 - \$900,000 = \$1,180,000$$

The growth rate $g = 206\%$ (given in the question)

WACC is given in the question as 11%.

$$\text{Corporate value} = \frac{\$1,180,000 (1.0206)}{0.11 - 0.0206} = \$13,471,000$$

Equity value = corporate value – debt value

$$\text{Equity value} = \$13,471,000 - \$6,500,000 = \$6,971,000$$

$$\text{Price per share} = \$6,971,000 / 2,400,000 \text{ shares} = \$2.90$$

(b)

Cash offer:

Aimtown Co shareholders will receive \$2.95 per share upon the takeover against the current share price of \$2.90.

Gain per share = $\$2.95 - \$2.90 = \$0.05$ per share, $= 0.05/2.90 = 1.7\%$ increase.

Kenswoth Co shareholders gain/loss can be calculated by comparing the current market price to the market price immediately after the acquisition of Aimtown Co.

Current share price = \$4.80

Revised share price after acquisition using P/E ratio method of valuation:

Current earnings of Kenswoth Co = $\$4.8/15 = \$0.32 \times 10 \text{ million} = \$3,200,000$

Combined earnings of two companies = $\$3,200,000 + \$620,000 = \$3,820,000$

Add cost savings (synergy) = \$150,000

Total combine earnings after acquisition = \$3,970,000

P/E ratio post-acquisition given as 15 times

Value of company post-acquisition before payment of Kenswoth Co shares

$= 15 \times \$3,970,000 = \$59,550,000$

Less cash paid to Kenswoth Co shareholders

$(\$2.95 \times 2,400,000 \text{ shares}) = \underline{\$ (7,080,000)}$

Value of company post-acquisition = \$52,470,000

Total number of shares after acquisition

(same as that of Kenswoth Co) = 10,000,000 shares

Market price post acquisition = $\$52,470,000 / 10,000,000 = \5.25

Gain to Kenswoth Co shareholders = $5.25 - 4.8 = 0.45 = 0.45/4.8 = 9.4\%$ increase.

Share for share exchange

Aimtown Co Co shareholders would receive two Kenswoth Co shares for three of their shares.

Number of shares in combined company:

Kenswoth Co shares before acquisition = 10,000,000

New shares issued to acquire Aimtown Co ($2,400,000 \times 2/3$) = 1,600,000

Total number of shares after acquisition = 11,600,000

Total combine earnings after acquisition (see above) = \$3,970,000

Market value post acquisition = $\$3,970,000 \times 15$ (P/E ratio) = \$59,550,000

Market price post acquisition = $\$59,550,000 / 11,600,000 = \5.13

Gain to Kenswoth Co shareholders = $5.13 - 4.8 = 0.33 = 0.33 / 4.8 = 6.9\%$ increase.

Gain to Aimtown Co shareholders:

Value of the current three shares = $3 \times \$2.90 = 8.7$

But the three share will give two shares in the new business with a value of = $2 \times \$5.13 = \10.26

A gain of = $\$10.26 - \$8.7 = \$1.57 = 1.57 / 8.7 = 17.9\%$

(c)

Reaction of Aimtown Co and Kenswoth Co shareholders to the takeover offer

The shareholders of Aimtown Co and shareholders of Kenswoth Co would accept the acquisition proposal and the method of payment based on whether their wealth would increase, that is if it would increase the value of their shares.

Aimtown Co shareholders

Under the cash offer, Aimtown Co shareholders would make a gain of 5 cents per share representing only 1.7% increase in wealth. Even though cash offer is certain, the shareholders would be totally bought out and they would not be part of the combined business, and given the minimal increase in wealth they are unlikely to accept this cash offer. However, the share for share exchange would increase their wealth by approximately 18%, and given the general acceptable premium level of about 20%, and the fact that this 18% is greater the value of the option delay (follow up product) they may prefer the share for share exchange.

Kenswoth Co shareholders

Kenswoth Co shareholders would be happy for either payment options as both leads to increase in the share price. However, the cash offer produces a better increase in wealth (9.4%) than the share for share exchange (6.4%), and given that fact the control would not be diluted using the cash offer, they may prefer the cash offer to the share for share exchange. They may also be concerned about whether there are other investment opportunities relatively better than acquiring Aimtown Co.

Assumptions made in the estimates

The major assumptions made in the estimations include;

The calculation of Aimtown Co current market price was based on the assumption that the free cash flows would grow at a constant growth rate of 2.06% to infinity, the cost of capital used is consistent with the risk of the company, and that the company would be in operational existence to infinity.

In calculating the post-acquisition market price the P/E ratio method was used on the assumption that the P/E ratio of the combined business would remain constant at 15 times. It was also assumed that the combined activities would reduce cost by \$150,000 per year resulting into increase in market value of the combined business.

The calculation of the value of option to delay was based on the principles of Black-Scholes model on the assumption that the option can only be exercised at the end of the two years but it appears that the option could be exercised any time during the period. It was also assumed that the risk associated with the present value of the cash flows are accurately measured by the standard deviation of 32% and that all the variables used remain constant over the period.

(d)

Diversification may be used to help a business reduce its overall risk. At a point when one particular industry is thriving, another may be in difficulties. Thus, by operating in more than one industry, it may be possible to achieve less volatility in overall sales and profits. Furthermore, a diversified business may be in a stronger position to survive a downturn in one of the industries in which it has invested.

Diversification, however, may not enhance shareholder value. It can be a costly exercise as a premium often has to be paid in order to acquire another business (as is the case in this question). The key issue is whether diversification by a business will provide any benefits to shareholders that the shareholders themselves cannot achieve. It may well be cheaper and simpler for a shareholder to hold a diversified portfolio of shares than for a business to acquire another.

Tutorial Help and Key Points

(a)

- APV is calculated as the based case NPV plus or minus the present value of the finance effect cash flows.
- Based case NPV is calculated as the present value of the net cash flows discounted using ungeared cost of equity.
- The cost of equity ungeared should be calculated using the asset beta of CAP as the proxy company
- The cash flows from financing effects are the issue costs, tax saved on interest, and the net interest saved on the subsidised loan.
- Conclude on the acceptability of the project based on the APV

(b)

- Discuss the situations where APV is appropriate to be used to evaluate investment project instead of using NPV.
- Explain the processes involved in calculating APV.
- Discuss the assumption used in the calculation of APV.

Marking scheme

(a)

Sales	1
Variable cost	1
Fixed cost	$\frac{1}{2}$
Tax	1
Tax saved on capital allowance	2
Residual value	$\frac{1}{2}$
Working capital	2
Cost of equity un-gearred	2
Base case NPV	1
Issue cost	1
Tax shield on interest	2
Subsidies	1
APV and conclusion	<u>1</u>

Max 16 marks

(b)

Situations where APV is better than NPV	3 - 4
APV approach	3 - 4
Assumptions made	3 - 4

Max 9 marks

Answer

(a)

Calculation of base case NPV:

Year	0	1	2	3	4	5
Sales		3,605	8,487	11,474	16,883	
Variable cost		(2,019)	(5,092)	(6,884)	(10,298)	
Fixed cost		<u>(1030)</u>	<u>(1910)</u>	<u>(3060)</u>	<u>(4277)</u>	
		556	1,485	1,530	2,308	
Tax			(167)	(446)	(459)	(692)
Tax savings on capital allowances			150	113	84	192
Cost of equipment	(2000)					
Residual value					200	
Working capital	<u>(750)</u>	<u>(23)</u>	<u>(23)</u>	<u>(24)</u>	<u>820</u>	
	(2750)	533	1,445	1,173	2,953	500
DF (Keu) 12%	<u>1</u>	<u>0.893</u>	<u>0.797</u>	<u>0.712</u>	<u>0.636</u>	<u>0.567</u>
Present value	(2750)	476	1152	835	1878	(284)
Base case NPV						= \$1307
Present value of Issue cost						= (\$56)
Present value of Tax savings on interest						= \$73
Present value of subsidy						= \$101

				APV		1425

Since the APV is positive the project is financially acceptable.

Workings

(1) Sales

Year	1	2	3	4
Selling price	5	5	5	5
Inflation (3%)	1.03 ¹	1.03 ²	1.03 ³	1.03 ⁴
Units (000)	700	1600	2100	3000
sales	3,605	8,487	11,474	16,883

(2) Variable cost

Year	1	2	3	4
Units (000)	700	1600	2100	3000
Variable cost	2.8	3	3	3.05
Inflation (3%)	1.03 ¹	1.03 ²	1.03 ³	1.03 ⁴
Total variable cost	2,019	5,092	6,884	10,298

(3) Fixed cost

Year	1	2	3	4
Units (000)	700	1600	2100	3000
Fixed cost	1000	1800	2800	3800
Inflation (3%)	1.03 ¹	1.03 ²	1.03 ³	1.03 ⁴
Total fixed cost	1030	1910	3060	4277

(4) Tax savings on capital allowances

Year 1: 2000 x 25% x 30%	= 150
2: 75% x 150	= 113
3: 75% x 113	= 85
4 difference	= <u>192</u>
(2000 - 200) = 1800 x 30%	<u>540</u>

(5) Working capital

Year	0	1	2	3	4
Total working capital	<u>750</u>	<u>773</u>	<u>796</u>	<u>820</u>	
Cash flows	(750)	(23)	(23)	(24)	(820)

(6) Ungearred cost of equity using CAP as the proxy

$$\text{CAP Co asset beta} = 1.5 \times \$128\text{m} / (\$128\text{m} + \$31.96\text{m} \times 0.8) \text{ approx.} = 1.25$$

$$\text{Ungearred cost of equity} = 2\% + 1.25 \times 8\% = 12\%$$

(7) Present value of Tax savings on interest

$$\begin{array}{rcl} \text{Interest on normal loan} & = & 40\% \times 2750 \times (1.5\% + 2.5\%) = 44 \\ \text{Interest on subsidised loan} & = & 60\% \times 2750 \times (2.5\% - 1.00\%) = \underline{25} \\ \text{Total interest payable} & & \underline{69} \end{array}$$

$$\text{Tax savings on interest} = 69 \times 30\% = 21$$

Present value of tax savings on interest (assuming 4% interest on normal loan)

$$\text{Annuity factor year 2 to 5 (as tax is paid in arrears): } 4.452 - 0.962 = 3.49$$

$$\text{Present value of tax savings on interest} = 3.49 \times 21 = 73$$

(8) Present value of net subsidy

$$\text{Net subsidy} = \$2750 \times 60\% \times 0.025 \times 70\% = 29$$

$$\text{Present value of net subsidy (at 4\%)} = 29 \times 3.49 = 101$$

Alternatively, 2% or 2.5% could be used depending on the assumptions made. Credit will be given where these are used to estimate the annuity factor, where the assumption is explained.

(b)

Situations where APV is better than NPV

The APV method may be better than NPV because:

1. There is a significant change in capital structure of the company as a result of the investment.
2. There are subsidised loans or other benefits (grant) associated explicitly with an individual project and which requires discounting at different rate than that applied to the mainstream cash flows.
3. The investment involves complex tax payments and tax allowances, and or has periods when taxation is not paid.
4. The operating risk of the company changes as a result of the investment.

Adjusted present value Approach

Adjusted present value is calculated as the base case net present value plus or minus the present value of the finance effect cash flows; issue cost; tax savings on interest and net subsidy. The value of the project is initially assessed considering only the business risk involved in undertaking the project by discounting the relevant cash flow using ungeared

cost of equity. The discount rate used is based on CAP Co's asset beta which measures only the business risk of that company. Since CAP Co is in the same line of business as the project, it is deemed appropriate to use its discount rate, instead of 16% that SAT Co uses normally. The impact of debt financing and the subsidy benefit are then considered. In this way, SAT Co can assess the value created from its investment activity and then the additional value created from the manner in which the project is financed.

Assumptions made

- It is assumed that all figures used are accurate and any estimates made are reasonable. SAT Co may want to consider undertaking a sensitivity analysis to assess this.
- It is assumed that the initial working capital required will form part of the funds borrowed but that the subsequent working capital requirements will be available from the funds generated by the project. The validity of this assumption needs to be assessed since the working capital requirements at the start of years 2 and 3 are substantial.
- It is assumed that CAP Co's asset beta and all-equity financed discount rate represent the business risk of the project. The validity of this assumption also needs to be assessed. For example, CAP Co's entire business may not be similar to the project, and it may undertake other lines of business. In this case, the asset beta would need to be adjusted so that just the project's business risk is considered.

Answer 4

Tutorial Help and Key Points

(a)

- Option pricing is the method of determining the value of the option or deciding what premium the writer of the option need to charge the buyer of that option.
- The Black-Scholes model has five variables in determining the value of a call option:
 - Price of the underlying item
 - Exercise price
 - Risk free rate
 - Time to expiry
 - Standard deviation - volatility
- Discuss how a decrease in each of the above variable will affect the value of a call option.

(b)

- Discuss the advantages and disadvantages of using share options as the basis of rewarding managers.
- Discuss the advantages and disadvantages of using earnings as the basis of rewarding managers.

(c)

- The managers are given the option to buy shares making it a call option.
- The value of call option depends on:
 - Price of the underlying item
 - Exercise price
 - Risk free rate
 - Time to expiry
 - Standard deviation - volatility
- Dividend is to be paid before the option expires and therefore the price of the underlying item should be reduced by the present value of the dividend.
- Calculate the Nd1 and Nd2
- Using the call option value formula, calculate the value of the call option.
- Compare it to the earnings bonus value and form a conclusion based on the higher value to the managers.

(d)

(1)

- A put option will be in the money when the price of the underlying item falls below the exercise price.
- By giving a put option, managers will be encouraged to take decisions that may reduce the share price so that they exercise their option at a gain.
- This will not be consistent with the objective of maximizing shareholders wealth and as such Schemot plc should not agree to offer a put option to its managers.

(2)

- The value of a put option can be calculated using the put-call parity.
- The put-call parity formula is given as $P = c - P_a + P_e e^{-rt}$
- Form a conclusion as to whether put option value is more than call option value.

•

Marking scheme

(a) 1 mark each for each determinant discussed	5 marks
(b)	
Advantages/disadvantages of share option	3
Advantages/disadvantages of earnings basis	2

	5 marks
(c)	
Dividend adjusted market price	1
Calculation of d1	3
Nd1	1
Calculation of d2	1
Nd2	1
Value of call option	2
Comment on findings	1

	10 marks
(d)	
Comment on put option	2 marks
Calculation of the value of put option	2
Comment on findings	1

	3 marks

Answer

(a)

Option pricing is the method of determining the value of the option or deciding what premium the writer of the option need to charge the buyer of that option.

The Black-Scholes model includes the following five factors in determining the value of a call option:

1. The price of the underlying security. The lower the price of the underlying instrument, the lower the value of the call option.
2. The exercise price. The lower, the exercise price of the option, the higher the value of the call option.
3. A measure of price volatility. The lesser the volatility of the price of the underlying item the lesser the probability of the option yielding profits and call option will decrease in value.
4. The risk-free rate of interest. The lower the interest rate, the lower the value of the call option because the present value of the exercise price will be higher.
5. The length of time to expiry of the option period. The shorter the remaining period to expiry, the lesser the probability of the underlying item changing in value. Call options are worth less the shorter the time to expiry (time value) because there is less time for the price of the underlying item to rise.

(b)

The advantages and disadvantages of using options may include the following:

Advantages

- It will help to align the interests of directors with those of shareholders. Share options provide directors with an incentive to increase the value of the company's shares, and thereby to increase the wealth of shareholders. This should help to avoid the risk of directors pursuing their own interests at the expense of the shareholders.
- By exercising an option and acquiring shares, the directors may identify more closely with other shareholders. (This argument does depend, however, on the directors keeping the shares acquired rather than selling them).
- It may act as a useful retention tool. As directors' share options are usually forfeited when a director leaves office, the value of outstanding options may provide a strong incentive to stay.

Disadvantages

- Share option schemes do not normally differentiate between the performances achieved by individual managers.
- If the share price falls significantly below the exercise price, the prospects of receiving any benefits may become remote and their value as a form of incentive will be lost.
- It is also debatable how much middle managers' can directly influence share price and whether they are aware of which of their decisions will have influence share price.
- Share price movements may be beyond the control of the managers. Changes in the economy or changes in demand may result in the directors being either under-rewarded or over-rewarded for their efforts.

The main advantage of using earnings as the basis of paying bonus is that earnings are easily measured. Earnings basis may encourage the managers to increase profits and can be used to assess the performance of each individual manager. However, maximizing earnings is not the same as maximizing share price and hence shareholders wealth. Managers may use different accounting concept to manipulate the earnings in order to earn bonus.

(c)

Dividend is to be paid before the option expires and therefore the price of the underlying item should be reduced by the present value of the dividend.

Present value of dividend at risk free rate = $25/1.06 = 23.58$ cents

The price of share ex-div = $610 - 23.58 = 586.42$ cents

The value of call option can be calculated using the Black-Scholes model as follows:

$$d1 = \frac{\ln(586.42/500) + (0.06 + 0.5(0.38)^2)(1)}{0.38\sqrt{1}} = 0.7674 = 0.77$$

From the normal distribution table, the $N(d1) = 0.5 + 0.2794 = 0.7794$

$$d2 = d1 - S\sqrt{t} = 0.7674 - 0.38\sqrt{1} = 0.3874$$

From the normal distribution table, the $N(d2) = 0.5 + 0.1517 = 0.6517$

Value of call option

$$c = (586.42 \times 0.7794) - (500 \times 0.6517 \times e^{-0.06 \times 1})$$

$$c = 457.06 - 306.87 = 150.19 \text{ cents}$$

$$\text{Total value of call option} = 150.19 \text{ cents} \times 5000 = \$7510$$

The total value of the option is more than the earnings based payment between \$5000 and \$7000. This may encourage the managers to accept the share option.

However, the value of the option is based on Black-Scholes model which is subject to many limitations.

(d)

(1) A put option will be in the money when the price of the underlying item falls below the exercise price. By giving a put option, managers will be encouraged to take decisions that may reduce the share price so that they exercise their option at a gain. This will not be consistent with the objective of maximizing shareholders wealth and as such Schemot plc should not agree to offer a put option to its managers.

(2)

The value of a put option can be calculated using the put-call parity:

$$p = c - P_a + P_e e^{-rt}$$

$$P = 150.19 - 586.42 + 500 \times e^{-0.06 \times 1}$$

$$P = 34.65 \text{ cents}$$

From this value we can conclude that the manager is incorrect as the value of the call option (150.19) is more than the value of the put option (34.65).



ACCA

Paper P4

Advanced Financial Management

Revision Mock Examination

June 2017

Question Paper

Time allowed	15 minutes	Reading and planning
	3 hours	Writing

This paper is divided into two sections:

Section A – This ONE question is compulsory and MUST be attempted

Section B – TWO questions ONLY to be attempted

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

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Section A – This ONE question is compulsory and MUST be attempted

1. Momodom (MMD) plc is an entity based in UK with diverse international interests. Its shares are quoted on a major international stock exchange with equity beta of 1.2. The company has 10 million Ordinary shares of 50 pence each, currently quoted at 180 pence each. Its loans have a current value of £3.6 million and an average after-tax cost of debt of 4.50%.

MMD imports its materials from foreign countries and sells its products to large retailers worldwide. As a result it pays and receives large amount of foreign currencies and until recently MMD plc had no intention of hedging its foreign currency exposures. Also, at a recent meeting with one of its major customers it became clear that the market is changing and the final consumer of MMD products is now more interested in variety and choice rather than exclusive and exceptional quality.

After consultations with senior and middle managers, the company's new Board of Directors (BoD) has been reviewing its risk management and investment strategies and the following two proposals were put forward:

Proposal 1: Investment strategy

MMD plc is considering whether to undertake the development of a new computer game, an area in which it has not previously been involved, based on an adventure film due to be released in 22 months. It is expected that the game will be available to buy two months after the film's release, by which time it will be possible to judge the popularity of the film with a high degree of certainty. However, at present, there is considerable uncertainty about whether the film, and therefore the game, is likely to be successful. Although MMD plc would pay for the exclusive rights to develop and sell the game now, the directors are of the opinion that they should delay the decision to produce and market the game until the film has been released and the game is available for sale.

MMD plc has forecast the following end of year cash flows for the four-year sales period of the game.

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Cash flows (£ million)	25	18	10	5

MMD plc will spend £7 million at the start of each of the next two years to develop the game, the gaming platform, and to pay for the exclusive rights to develop and sell the game. Following this, the company will require £35 million for production, distribution and marketing costs at the start of the four-year sales period of the game. It can be assumed that all the costs and revenues include inflation.

However, there is some disagreement among the Directors about how this project should be evaluated, in particular about the discount rate to be used. Director A: Suggests the entity's current WACC is more appropriate. Director B: Suggests calculating a discount rate using data from XYZ, a quoted entity, the main activities include production of games similar to the one being considered by MMD plc.

XYZ Co's equity beta is 1.40, and it is estimated that the equivalent equity beta for its other activities, excluding the game production, is 1.25. XYZ Co has 400 million 25c shares in issue trading at 120c each. Its debt finance consists of variable rate loans redeemable in seven years. The loans paying interest at base rate plus 120 basis

points have a current value of \$96 million. It can be assumed that 75% of XYZ Co's value can be attributable to other activities excluding the game production and 25% can be attributable to game production.

Proposal 2: Hedging foreign currency exposure

Setting up a treasury function to manage the foreign exchange exposure. The marketing director was of the opinion that MMD's shareholders would benefit most if no action were taken. He argued that the hedging would result in extra costs and possibly increase the risk to the company. However, the BoD wants to use the following upcoming foreign currency exposure to demonstrate how they would be managed by the treasury function. Several large transactions are due in five months' time. These are shown below. The transactions are in '000' units of the currencies shown.

	Exports to:	Imports from:
Company 1	\$490	£150
Company 2	—	\$890
Company 3	£110	\$750

The following hedging products are available to MMD plc to manage the foreign currency exposure.

Forward contract:

\$US/£

3 months forward	1.9066 – 1.9120
1 year forward	1.8901 – 1.8945

Money market hedge

Annual interest rates available to MMD plc

	Borrowing	Investing
Sterling up to 6 months	5.5%	4.2%
Dollar up to 6 months	4.0%	2.0%

Exchange-traded currency futures

Contract size £62,500 price quotation: US\$ per £1

September	1.9045
December	1.8986

Exchange-traded currency options

Contract size £31,250, exercise price quotation: US\$ per £1, premium: cents per £1

Exercise price	Calls		Puts	
	Sept	Dec	Sept	Dec
1.8800	4.76	5.95	1.60	2.96
1.9000	3.53	4.70	2.36	4.34

Assume that it is now 1 June and that futures and option contracts expire at the end of the month and transaction costs related to these can be ignored.

Other relevant information in relation to proposal 1

- Both MMD and XYZ pay annual corporation tax at a rate of 25%.
- The current base rate is 3.5% and the market risk premium is estimated at 4.5%.
- MMD plc has estimated the likely volatility of the cash flows at a standard deviation of 30%

Required:

Prepare a report to the Board of Directors (BoD) of MMD plc which:

- Advises MMD plc on an appropriate hedging strategy to manage the foreign exchange exposure in five months' time. Show all relevant calculations, including the number of contracts bought or sold in the exchange-traded derivative markets.** (15 marks)
- Estimates the cost of capital that MMD plc should use to calculate the net present value of the game project. Include all relevant calculations.** (8 marks)
- Estimate the value of the project with and without the option to delay. The Black-Scholes Option Pricing model may be used, where appropriate. All relevant calculations should be shown.** (12 marks)
- Discusses the implications of the answer obtained in part (c) above, including the assumptions made.** (5 marks)
- Discusses the argument for and against hedging foreign exchange exposure.** (6 marks)

Professional marks will be awarded in part (d) for the presentation, structure, logical flow and clarity of the memorandum. (4 marks)

(50 marks)

Section B – Two questions ONLY to be attempted

2. Kenswoth Co, a company quoted in a recognised stock exchange, has substantial amount of cash which is currently invested in short-term money market deposit. The cash is intended to be used primarily for strategic acquisitions, and the company has formed an acquisition committee with a remit to identify possible acquisition target. The committee has suggested the purchase of Aimtown Co, a company in the same industry as Kenswoth Co.

Currently, Kenswoth Co has 10 million shares in issue and these are trading for \$4.80 each. Kenswoth Co's price to earnings (P/E) ratio is 15. Kenswoth Co believes that it can find cost-based synergies of \$150,000 after tax per year for the foreseeable future and that the P/E ratio of the combined company will remain at 15 times.

Although Aimtown Co is quoted, approximately 50% of its shares are still owned by three directors. These directors have stated that they might be prepared to recommend the sale of Aimtown Co if the terms are right.

Kenswoth Co proposes to pay for the acquisition using one of the following two methods:

Method 1

A cash offer of \$2.95 cash per Aimtown Co share; or

Method 2

A share-for-share exchange where two Kenswoth Co shares would be offered for three Aimtown Co shares.

Extract from the most recent statement of financial position of Aimtown Co

	\$'000
Net non-current assets	10,060
Current assets	690

Total Assets	10,750

Share capital (40c per share par value)	960
Reserves	1,400
Non-current liabilities: Variable rate loans	6,500
Current liabilities	1,890

Total liabilities and capital	10,750

Extract from the most recent income statement

	\$'000
Sales revenue	8,780
Profit before interest and tax	1,230
Interest	(455)
Tax	(155)
Profit after tax	620
Dividends	Nil

In arriving at the profit after tax amount, Aimtoun Co deducted tax allowable depreciation and other non-cash expenses totalling \$1,206,000. It requires an annual cash investment of \$900,000 in non-current assets and \$110,000 in working capital to continue its operations. The free cash flows of Aimtoun Co are expected to grow at an annual rate of 2.06% for the foreseeable future.

It is estimated that an overall cost of capital of 11% is reasonable compensation for the risk undertaken on an investment of this nature.

Required

- (a) Estimates the current value of a Aimtoun Co share, using the free cash flow to firm methodology.** (7 marks)
 - (b) Estimates the percentage gain in value to a Aimtoun Co share and a Kenswoth Co share under each payment offer.** (8 marks)
 - (c) Discusses the likely reaction of Aimtoun Co and Kenswoth Co shareholders to the takeover offer, including the assumptions made in the estimates above.** (6 marks)
 - (d) Outline the case for and against employing a strategy of diversification through mergers or acquisitions.** (4 marks)
- (25 marks)**

3. SAT Co is an entity based in the USA with diverse international interest. Its shares and loan notes are quoted on a major stock exchange.

SAT is evaluating the potential for investment in the production and distribution of confectionery products, an area in which it has not previously been involved. Information on future returns from the investment has been forecast to be as follows:

(1) Sales:

Year	1	2	3	4
Demand (boxes)	0.7 million	1.6 million	2.1 million	3.0 million
Selling price (current price terms) (\$)	5.0	5.0	5.0	5.0

(2) The variable and fixed costs (both in current price terms) will depend on sales volume, as follows.

Sales volume (boxes)	Less than 1 million	1–1.9 million	2–2.9 million	3–3.9 million
Variable cost (\$ per box)	2.80	3.00	3.00	3.05
Total fixed costs (\$)	1 million	1.8 million	2.8 million	3.8 million

- (3) The cost of the production equipment, which is payable immediately, is \$2.0 million, and an additional initial investment of \$750,000 would be needed for working capital. The scrap value of the equipment at the end of four years is expected to be \$200,000.
- (4) Profit tax of 30% per year will be payable one year in arrears. Capital allowances (tax-allowable depreciation) can be claimed on this investment on a 25% reducing balance basis. A balancing allowance would be claimed in the fourth year of operation.
- (5) The average general level of inflation is expected to be 3% per year and selling price, variable costs, fixed costs and working capital would all experience inflation of this level.

It is anticipated that the project will be financed entirely by debt, 60% of which will be obtained from a subsidised loan scheme run by the government, which lends money at a rate of 100 basis points below the 10-year government debt yield rate of 2.5%. Issue costs related to raising the finance are 2% of the gross finance required. The remaining 40% will be funded from SAT Co's normal borrowing sources at a rate of 150 basis points over the 10-year government yield rate. It can be assumed that the debt capacity available to SAT Co is equal to the actual amount of debt finance raised for the project.

SAT Co has identified a company, CAP Co, which operates in the same line of business as that of the project it is considering. CAP Co is financed by 40 million shares trading at \$3.20 each and \$34 million debt trading at \$94 per \$100. CAP Co's equity beta is estimated at 1.5. The current yield on government treasury bills is 2% and it is estimated that the market risk premium is 8%. CAP Co pays tax at an annual rate of 30%.

SAT Co uses a nominal after-tax cost of capital of 16% to appraise investment projects.

Required:

(a) Calculate the adjusted present value (APV) for the project and conclude whether the project should be accepted or not. Show all relevant calculations. (16 marks)

(b) Explain the situations where APV is better than NPV and explain the APV approach taken in part (a), including any assumptions made. (9 marks)

(25 marks)

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4. Schemot plc is considering the introduction of an executive share option scheme. The scheme would be offered to all middle managers of the company. It would replace the existing scheme of performance bonuses linked to the post-tax earnings per share of the company. Such bonuses in the last year ranged between \$5,000 and \$7,000. If the option scheme is introduced, new options are expected to be offered to the managers each year.

It is proposed for the first year that all middle managers are offered options to purchase 5,000 shares at a price of 500 cents per share after the options have been held for one year. Assume that the tax authorities allow the exercise of such options after they have been held for one year. If the options are not exercised at that time, they will lapse.

The company's shares have just become ex-div and have a current price of 610 cents. The dividend paid was 25 cents per share, a level that has remained constant for the last three years. Assume that dividends are only paid annually.

The company's share price has experienced a standard deviation of 38% during the last year.

The short-term risk free interest rate is 6% per annum.

Required:

- (a) **Discuss how a decrease in the value of each of the determinants of the option price in the Black-Scholes option-pricing model for European options is likely to change the price of a call option.** (5 marks)
- (b) **Discuss the relative merits for the company of the existing bonus scheme and the proposed share option scheme.** (5 marks)
- (c) **Evaluate whether or not the proposed share option scheme is likely to be attractive to middle managers of Schemot plc.** (10 marks)
- (d) **When told of the scheme one manager stated that he would rather receive put options than call options, as they would be more valuable to him.**
- (1) **Discuss whether or not Schemot plc should agree to offer him put options.** (2 marks)
- (2) **Calculate whether or not he is correct in his statement that put options would be more valuable to him.** (3 marks)
- (25 marks)**

Formulae

Modigliani and Miller Proposition 2 (with tax)

$$k_e = k_e^i + (1 - T)(k_e^i - k_d) \frac{V_d}{V_e}$$

The Capital Asset Pricing Model

$$E(r_j) = R_f + \beta_j (E(r_m) - R_f)$$

The asset beta formula

$$\beta_a = \left[\frac{V_e}{(V_e + V_d(1 - T))} \beta_e \right] + \left[\frac{V_d(1 - T)}{(V_e + V_d(1 - T))} \beta_d \right]$$

The Growth Model

$$P_0 = \frac{D_0 (1 + g)}{(r_e - g)}$$

Gordon's growth approximation

$$g = b r_e$$

The weighted average cost of capital

$$WACC = \left(\frac{V_e}{V_e + V_d} \right) k_e + \left(\frac{V_d}{V_e + V_d} \right) k_d(1 - T)$$

The Fisher formula

$$(1 + i) = (1 + r) (1 + h)$$

Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{(1 + h_c)}{(1 + h_b)}$$

$$F_0 = S_0 \times \frac{(1 + i_c)}{(1 + i_b)}$$

Modified Internal Rate of Return

$$\text{MIRR} = \left(\frac{\text{PV}_R}{\text{PV}_I} \right)^{\frac{1}{n}} (1 + r_e) - 1$$

The Black Scholes Option Pricing Model

$$c = P_a N(d_1) - P_e N(d_2) e^{-rt}$$

Where:

$$d_1 = \frac{\ln(P_a/P_e) + (r + 0.5s^2)t}{s\sqrt{t}}$$

and

$$d_2 = d_1 - s\sqrt{t}$$

The Put Call Parity relationship

$$p = c - P_a + P_e e^{-rt}$$

Present value table

Present value of 1 ie $(1 + r)^{-n}$

Where r = discount rate

n = number of periods until payment

Discount rate (r)

Periods

(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	11
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	11
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	12
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	13
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	14
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	15

Annuity table

Present value of an annuity of 1 ie $\frac{1-(1+r)^{-n}}{r}$

Where r = discount rate
 n = number of periods

Discount rate (r)

Periods

(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	2
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	3
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	4
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	5
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	6
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	7
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	8
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	9
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	10
11	10.37	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	11
12	11.26	10.58	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	12
13	12.13	11.35	10.63	9.986	9.394	8.853	8.358	7.904	7.487	7.103	13
14	13.00	12.11	11.30	10.56	9.899	9.295	8.745	8.244	7.786	7.367	14
15	13.87	12.85	11.94	11.12	10.38	9.712	9.108	8.559	8.061	7.606	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	2
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	3
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	4
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	5
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	6
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	7
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	8
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	9
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	10
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	11
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	12
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	13
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	14
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	15

Standard normal distribution table

	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2703	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990

This table can be used to calculate $N(d_i)$, the cumulative normal distribution functions needed for the Black-Scholes model of option pricing.

If $d_i > 0$, add 0.5 to the relevant number above.

If $d_i < 0$, subtract the relevant number above from 0.5



ACCA

Paper P5

Advanced Performance Management

Revision Mock Examination

September 2017

Answer Guide

Health Warning!

How to pass

Attempt the examination under exam conditions BEFORE looking at these suggested answers. Then constructively compare your answer, identifying the points you made well and identifying those not so well made.

If you got basic definitions and rules wrong: re-revise by re-writing them out until you get them correct.

How to fail

Simply read or audit the answers congratulating yourself that you would have answered the questions as per the suggested answers.

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Question 1

Tutorial Help and Key Points

This question requires a description of gap analysis, the difference between where the company would like to be and where they are now.

The next step is to show an understanding of the Ansoff product/market growth strategies and how they may be applied by APSI to close the gap. Categorising the three initiatives identified in terms of Ansoff's strategies.

Followed by an analysis of the profitability of each of the supermarket customers showing that S3 may generate the highest revenue but is the least profitable whilst S1 is the most profitable.

Finally each strategy is evaluated for the least profitable customer identified earlier as S3. The best recommendation would be to control costs. This could be by reducing the number of rush deliveries through better planning.

Marking Guide

	Marks
(a)	
(i) 2-4 marks for an explanation and 2 marks for the gap analysis diagram	Max 6
(ii) 1 mark for each strategy and 1-2 marks for an example relevant to ASPI	Max 8
(b)	
(i) 1 mark for advertising, 1 for extra sales, 1 mark for discount, 1 mark for new customer & 1 mark for revenue gap	Max 5
(ii) 1 mark for the classification of each initiative	Max 3
(c) 1 mark for relevant calculation to aid analysis of S1, S2 & S3	Max 10
1-2 marks for each decent point analysed.	Max 10
(d) 2 marks for each strategy & 2 for an explained recommendation	
	Max 8
	(50 marks)

(a)

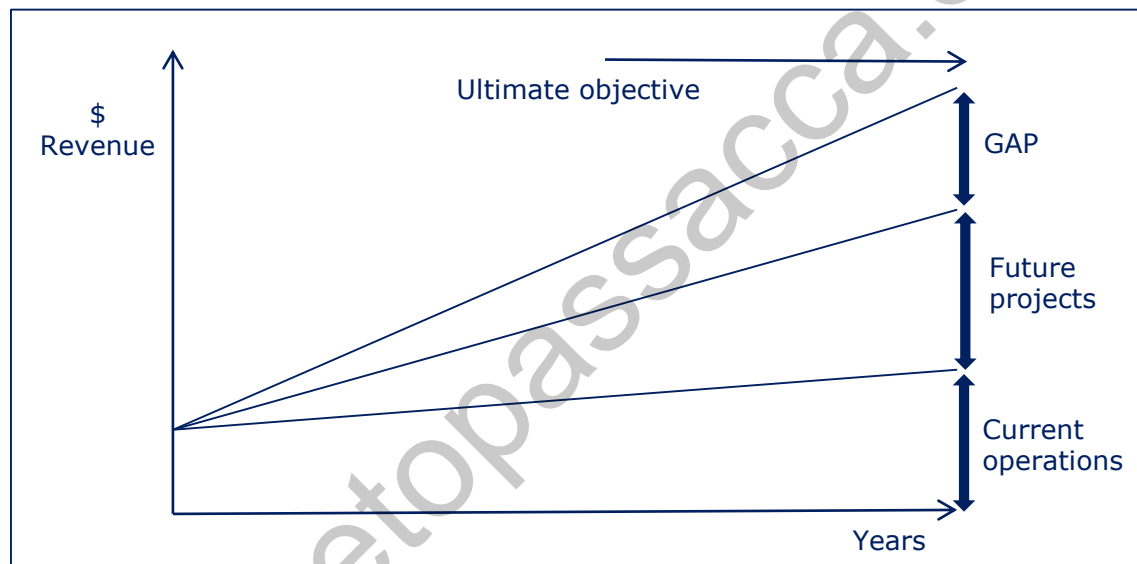
(i) Gap analysis

Gap analysis is the comparison of an entity's ultimate objective with the sum of projections and already planned projects, and identifying how the consequent gap might be closed.

Gap analysis thus takes a key corporate objectives (e.g. revenue) and looks at the difference between

- Where an organisation is expected to be at a future date, assuming that existing strategies are continued
- Where the organisation wants to be.

For example, a profit gap could be analysed as follows:



An organisation will forecast the likely performance of its existing projects and also the expected contribution of future projects.

This is far more difficult since future projects are subject to much greater uncertainty than current operations and therefore forecasts of future projects have a much wider margin of error.

Where a gap exists, additional strategies are required. Ansoff's matrix identifies various options that might be considered in order to close the planning gap.

(ii) Ansoff's matrix

Ansoff's matrix is a useful way of classifying existing and potential strategies according to

- Does the strategy involve existing products or new ones?
- Does the strategy involve existing markets or new ones?

Depending on the answers to these two questions there are four possible strategy types:

	Existing products	New products
Existing market	<p><i>Focussing on existing operations, there are two options available:</i></p> <p>Internal efficiency gains could be made by better use of IT, for example</p> <p>Market penetration involves gaining market share, for example by expanding the sales team to target smaller supermarket chains.</p>	<p><i>Product development involves making new products to sell to existing customers.</i></p> <p>For ASPI this could include developing a range of drinks to sell to supermarkets.</p>
New market	<p><i>Market development involves developing new markets for existing products.</i></p> <p>For ASPI this could include starting operations in the US and/or Asia</p>	<p><i>Diversification involves moving into new products for new markets</i></p> <p>For ASPI this could involve forwards vertical integration by selling direct to the public via a website.</p>

(b) Initiatives

(i) Impact of new initiatives

Existing gap in net sales revenue = $480.0 - 426.3 = \$53.7$ million

Impact of new proposals:

		\$m	\$m
Advertising (note)	- $8\% \times (89.4 - 42.9)$		3.7
New product line	- Additional gross sales	8.4	
	- Expected discount ($8.4 \times 20.1/426.3$)	(0.4)	
			8.0
New customer			<u>12.0</u>
			<u>23.7</u>

(Note – we have assumed that the figures given for advertising are net of discounts)

The overall impact is that the revenue gap should fall to $53.7 - 23.7 = \$30$ million.

While the gap is smaller, there is still a shortfall to be made up.

(ii) Classification of initiatives

- The advertising campaign would be classified as market penetration as it aims to increase market share of existing markets with existing products.
- The new product line is aimed at existing customers so would be a product development strategy.
- The question does not state precisely where ASPI's customers are based but, given ASPI's manufacturing facilities are in Western Europe, it is reasonable to suggest that the Eastern European customer is in a new market for ASPI. The initiative would thus be a market development strategy.

(c) Customer account profitability (CAP) analysis

Analysis of customer profitability shows the following issues:

Despite S3 generating more revenue, S1 is the most profitable customer and generates the highest net margins of the three customers.

The main area of improvement for S1 would be to encourage them to cause as many rush orders.

S2 has the highest gross margin of 16% but the net margin is only 12.9%. This is due mainly to the excessive number of deliveries needed - S2 has the smallest deliveries as measured by revenue per delivery.

ASPI need to investigate whether this is a problem with S2 (for example, are orders made centrally but they have a large number of small stores requiring delivery) or with ASPI (e.g. inefficient delivery scheduling or unavailability of certain product lines).

ASPI's main problem is with S3. It gives the lowest margins (6.2% net margin), the greatest percentage of rush deliveries (20.8%), the lowest value per order (\$142,000), the highest level of returns (3.4%) and is given the greatest discount (8%).

Despite this ASPI still makes \$6.6 million profit each year from the S3 account. ASPI need to investigate why S3 makes so many smaller orders (e.g. ordering may be decentralised to local stores) and why so many deliveries are rush (e.g. S3 may be trying to minimise store inventories relying on ASPI to deliver at short notice).

Customer profitability calculations	S1	S2	S3
	\$000	\$000	\$000
Sales revenue before discounts and returns	58,000	24,000	108,000
Returns	(1,218)	(480)	(3,672)
Gross sales revenue after returns	56,782	23,520	104,328
Discounts	(1,740)	(480)	(8,640)
Net sales revenue	55,042	23,040	95,688
Cost of sales = 80% × sales revenue	(46,400)	(19,200)	(86,400)
Gross profit	8,642	3,840	9,288
Cost of sales visits @ \$685	(8)	(10)	(149)
Cost of processing orders @ \$148	(9)	(4)	(112)
Cost of standard deliveries @ \$2,250	(234)	(716)	(1,355)
Cost of rush deliveries @ \$6,475	(45)	(13)	(1,023)
Net profit	8,346	3,097	6,649
Further analysis			
Gross margin	14.9%	16.0%	8.6%
Net margin	14.4%	12.9%	6.2%
 Average revenue* per order (\$000)	 983	 923	 142
 Total number of deliveries	 111	 320	 760
% of total deliveries that are "rush"	6.3%	0.6%	20.8%
Average revenue* per delivery (\$000)	522	75	142
(*before discounts and returns)			

(d)Evaluation

Strategy	Advantages	Disadvantages
Stop selling to the least profitable customers	<ul style="list-style-type: none"> Supermarkets would buy through wholesalers reducing ASPI's costs in dealing with them 	<ul style="list-style-type: none"> Potential lost sales as supermarkets go elsewhere Reduced margin if sell via wholesalers
Persuade customers to reduce cost generating activities	<ul style="list-style-type: none"> Would help streamline the business and save costs, improving margins. Could help build stronger relationships with supermarkets reducing the risk of them switching suppliers An obvious move, given ASPI's competitive strategy of cost leadership 	<ul style="list-style-type: none"> Customers will need encouragement to make any changes as they will perceive the costs to be ASPI's problem – for example, supermarkets could be offered additional discounts if they hit targets on, say, rush deliveries.
Introduce new technologies	<ul style="list-style-type: none"> Greater efficiency processing orders Could smooth production reducing inventory levels Could enable better relationships with customers – for example, ASPI could set up an extranet allowing customers to order electronically. 	<ul style="list-style-type: none"> Cost of hardware, software and training could undermine ASPI's competitive advantage.

It is recommended that in the short term ASPI seek to encourage customers to reduce the number of cost generating activities – for example, the number of rush deliveries could be reduced by better planning by the supermarket.

In addition ASPI should look at further investment in IT to improve production efficiency and build stronger links with customers.

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Question 2

Tutorial Help and Key Points

The mark allocation on this question should indicate to candidates that this is a straight forward NPV and as the cash flows are annuity using the annuity tables would be the quickest option.

Like the NPV, the sensitivity analysis would be best calculated using the quickest option which is NPV/PV of uncertain cash flow the second method in the answers.

Factors that may be considered before deciding upon the manufacture of solar panels include cost of finance, accuracy of forecasted cash flows, anticipated life span, competitors and their actions and how it will affect volume and prices. (Other relevant ideas should be awarded marks)

The candidate then needs to briefly describe benchmarking and the process involved in establishing a best practice, followed by some benefits to the organisation of benchmarking.

Finally we are looking for ideas on how the government can aid performance such as tax schemes, quotas/tariffs and regulating monopolies. (Other relevant ideas should be awarded marks)

Marking Guide

	Marks
(a) 1 mark for each of Investment, Grant, Net inflow, Tax@ 30% & NPV	Max 9
(b) 1 mark for each factor that may be considered before deciding whether to manufacture the solar panels.	Max 3
(c) 1-2 marks for describing benchmarking & the process	Max 4
2 marks for each benefit of benchmarking	Max 4
(d) 1 mark for each way in which the government can aid performance	Max 5
	Max 25

(a)

	p.u.
Sales units	2,700
Selling price \$	3,000
Variable costs \$	1,580
Royalty (variable) \$	250

All figures in \$'000	0	1	2	3	4	5	6
Sales Revenue		8,100	8,100	8,100	8,100	8,100	8,100
Variable costs		(4,266)	(4,266)	(4,266)	(4,266)	(4,266)	(4,266)
Royalties		(675)	(675)	(675)	(675)	(675)	(675)
Fixed costs		(900)	(900)	(900)	(900)	(900)	(900)
Cash inflow from operations	0	2,259	2,259	2,259	2,259	2,259	2,259
Tax payable on cash from operations @ 30%		(678)	(678)	(678)	(678)	(678)	(678)
Initial investment	(7,000)						
Government grant	3,500						
Residual value							0
WDA's	0	0	0	0	0	0	0
Net cash flow	(3,500)	1,581	1,581	1,581	1,581	1,581	1,581
Discount factor @ 12%)	1.000	0.893	0.797	0.712	0.636	0.567	0.507
Present value	(3,500)	1,412	1,260	1,126	1,006	897	802
NPV =	3,002						

OR

Time	Narrative	CF	DF	PV
0	Investment	(7,000)	1	(7,000)
0	Grant	3,500	1	3,500
1-6	Net inflow	2,259	4.111	9,287
1-6	Tax @ 30%	(678)	4.111	(2,787)
				<u>3,000</u>

Cash flow - initial outlay	(7,000)
NPV	3,002
% change initial investment could increase	42.9%

(b) Factors that should be considered by the directors of SPL include:

- The cash flows are estimated. How accurate they are requires detailed consideration.
- The cost of capital used by the finance director might be inappropriate. For example if the EF solar panels proposal is less risky than other projects undertaken by SPL then a lower cost of capital should be used.
- How strong is the EF brand name? The directors are proposing to pay royalties equivalent to 8% of sales revenue during the six years of the anticipated life of the project. Should they market the EF solar panels themselves?
- Would competitors enter the market and what would be the likely effect on sales volumes and selling prices?

(only three required)

(c) Benchmarking has been defined as 'the establishment, through data gathering, of targets and comparators through whose use relative levels of performance (and particularly areas of underperformance) can be identified. By the adoption of identified best practices it is hoped that performance will improve.'

A major problem facing the management of SPL Ltd lies in the accessing of information regarding the activities of a competitor firm that may be acknowledged to display best practice. Internal benchmarking i.e. using another function within the same firm as the standard can help in the avoidance of the problems of information access, but that clearly limits the scope of what can be achieved. The most common approach is process benchmarking, where the standard of comparison is a 'Best Practice' firm which may be entirely unconnected with the benchmarking organisation and not even operating within the same industry.

The objective is to improve performance. This is best achieved by means of the sharing of information which should prove of mutual benefit to both parties to the benchmarking programme. As a result of receiving new information each party will be able to review their policies and procedures. The very process of comparing respective past successes and failures can serve as a stimulus for greater innovation within each organisation.

To evaluate the performance SPL they need to establish a basis for targets which reflects the performance of an organisation which displays 'Best Practice'. As a direct consequence of a comparison of existing standards with the 'Best Practice' organisation, managers can focus upon areas where improvements can be achieved and evaluate measures to help attain those improvements.

A principal benefit that will be derived by SPL Ltd as a result of undertaking a successful programme of benchmarking will be the identification of areas where cost savings are possible. Hence the levels of cost of sales and operating expenses can be reduced leading to increased profitability.

Another benefit will be the setting of more realistic purchasing targets that will result in improved budgeting. The improved performance of the purchasing department personnel will serve as a better platform for the introduction of initiatives such as, for example, performance related pay for the personnel within the purchasing department.

(d) Governments may aid business performance in the following ways:

A government can increase aggregate demand for goods and services by increased government spending and/or by reducing taxation so that firms (and individuals) have more after tax income available to spend.

Government policy may encourage firms to locate to particular areas. This is particularly the case where there is high unemployment in such areas.

Government policy via the use of quotas and import tariffs might make it more difficult for overseas firms to compete in domestic markets.

A government can regulate monopolies in particular with regard to the prices they charge and the quality of their goods and services.

Also any sensible suggestions with regards aid that governments could award businesses, as there are a wide variety of ways they could do this.

Question 3

Tutorial Help and Key Points

A sound answer can be based on standard models and concepts. **Part (a)** can be answered by using Porter's Five Forces Model – but you must use the scenario.

In **part (b)** ensure that you use financial and other performance indicators in your evaluation of the performance of each company. Candidates should compare the two years of data given and each company on its own merit.

Marking Guide

(a)	1–2 marks for each force 1 mark per relevant KPI	Marks Max 13
(b)	1 mark for relevant calculation to aid analysis 1–2 marks for each decent point analysed.	Max 5 Max 7 (25 marks)

- (a) If a business is to be successful it must not only establish but also maintain competitive advantage. During the last 30 years the M Group has developed internationally and has a trading presence in many diverse areas. This inevitably means that the company is likely to encounter many external forces which will make it much more difficult for M Group to meet its objectives not to disappoint their customers with any of the product and services that they provide.

The external forces, to which M Group is subject in developing its business, can be analysed using Michael Porter's 'Five Forces Model':

Power of the buyers

Management must have knowledge of the needs of their customers and also information of the conditions that subsist in the different markets in which they have a presence. Such information assumes critical importance if M Group is to be successful in different sectors. The conditions in the market place will invariably differ and thus if M Group is to be successful then due consideration should be given to the political, legal and social environments which exist within each market place. It is possible that the buyers may benefit from the entry of the M Group, as it is likely that the existing suppliers may have become too self-satisfied, however this situation could well change and become a threat to the M Group.

KPI

- Number of new customers over a period
- Number of returning customers
- Customer account profitability
- These will enable M Group to track customer trends and potential profit earned from these different groups, to perhaps enable targeting higher profit earning customers

Power of suppliers

The management of M Group must be certain that there are available suppliers who can provide them with the materials and services needed. The quality and reliability of suppliers could potentially become a major issue; hence managers should take steps to ensure that supplies of materials, services and appropriately skilled personnel can be obtained.

KPI

- Length of time as a supplier/prices charged
- Other alternative suppliers/prices
- This could track supplier costs and reliability to the M Group

Industrial competitors

In attempting to enter new markets M Group will be faced with competitors who are already established and have acquired market knowledge. It will be difficult to compete effectively in these markets and thus it is essential that M Group acquired skilled managers in order to improve the likelihood of attaining the objectives of the organisation.

KPI - % market share of competitors – by tracking market share it will allow M Group to see how they compare to their competitors

Availability of substitutes

M Group is involved in different businesses and it is probable that the tastes and life style of customers within each business will differ. It is therefore essential that products and services of the M Group be adapted in order to be able to meet the requirements of different types of customer. By the same token it is essential that such differences are incorporated into the strategic and marketing plans of the organisation. If M Group is to be successful it is vital that its product and service offerings represent 'value for money' and satisfies the needs of its customers.

KPI

- Costs of alternatives
- Sales in alternatives
- This will enable M Group to see how they compare to various alternatives to their business, how they change and whether they change more or less than their business to see if customers are likely to 'switch' to these

Entry barriers

The structure and business conditions may vary considerably within each industry and information should be obtained in order for M Group to be able to operate in an effective manner. If the management of M Group are able to introduce new ventures which, are innovative and 'exciting' within particular industries, then it is possible that they are simultaneously creating barriers to entry of those industries.

Each time M Group mounts a challenge to major companies will probably require the commitment of significant resources. It is therefore of paramount importance that the external forces be evaluated prior to any major decisions are made.

KPI

- % of revenue from potential new markets / costs of entry to new markets
- enable M group to see if there is any potential for additional profit to be earned in these areas

Other relevant KPI's could be suggested, these are good illustrations

(b) During 2013, the turnover of the Airline business increased by almost 19%, whilst the turnover of the rail business only increased by just over 3%. There were marked differences in the performance of these respective divisions of the M Group:

	2012	2013
Airline	%	%
Pre-tax profit as percentage of turnover	10.5	11.8
Return on Capital Employed	8.0	10.1
Turnover/Capital employed	76.0	85.8
	2012	2013
Rail	%	%
Pre-tax profit as percentage of turnover	7.3	7.6
Return on Capital Employed	5.7	5.0
Turnover/Capital employed	77.4	66.1

M Airlines

A comparison of the results of the two years reveals that no significant change has occurred in any of the ratios, however some of the trends may become significant in the future. The profitability of the Airline division has improved and the ROCE has increased by over 2%. However, the ROCE of the Rail division has declined and this will surely cause anxiety within the management team.

As regards the Airline division the management need to review the current strategy to ensure that the company is able to cope with the competition and the problems faced by those companies within this volatile industry which is subject to international influences. The company should undertake a review of its cost structure and its selling prices, as it is vital that these aspects are closely monitored in order to ensure that the Airline division does not become uncompetitive. The development of overseas business should be given serious consideration, as this is critical to the development of those organisations within the airline industry.

Whilst airline traffic in terms of passengers, passenger miles travelled and the number of routes flown have increased it is possible that the management of the M Group should consider investing additional funds to ensure that these favourable trends continue. M Group should take steps to ensure that they benefit from the 3% projected growth in the long-distance economy market from which P attracts most of its customers. In order to ensure that the customers are given good service it may be necessary to improve the ratio of cabin staff to passengers in both the economy class. M Group must take steps to ensure that the good reputation it has earned and which has become a source of competitive advantage is not lost, hence it is essential to ensure that service levels provided to passengers are maintained and preferably enhanced.

A review of all routes and alliances with other airlines should be undertaken in order to ensure that M Group is operating efficiently and effectively. It is possible that expanding into too many routes could cause fragmentation and this could be injurious to the overall success of organisation. M Group should ascertain the profitability attached to each route and try to focus upon the most profitable routes.

It is likely that price competition may become fierce as competitors attempt to take market share from M Group. It is necessary for the Airline division to protect its strength in the economy class markets where by the customers are very aware of prices charged by M Group and its competitors.

M Rail

A comparison of the two years shows that the profitability of the division is static and this makes it essential for management to review its strategic options. Perhaps ways could be devised which may permit management to increase the level of fares currently being charged, decrease operating costs and reduce the level of capital employed. Of paramount importance is the need for management to successfully address the operating problems which have precipitated a loss of customer confidence. If such problems persist it is quite possible that these could have a seriously detrimental effect on every division of the M Group. Punctuality is probably the most significant issue that needs to be addressed. The management of M Group should give consideration to the fact that the reduction in the number of attendants could be impacting adversely upon customers' perception of the service being offered.

Passenger traffic has decreased in terms of both the number of passengers and the passenger miles travelled and management should attempt to ascertain the reason for this as soon as possible. There has been a significant fall in the turnover to capital employed ratio and a solution to this problem will be required if the objectives of the organisation are to be met.

Unless M Group is able to improve the services it offers, it may not be able to take full advantage of the projected growth of the market over the next four years.

The Regulator poses another threat that the management of the M Group need to address. The loss of the franchise would be a major problem for the organisation. The results of the passenger survey were not good and thus it is vital that punctuality and the services provided improve quickly. The reduction in the number of attendants should be investigated as this could well be a partial cause of customer dissatisfaction.

Question 4

Tutorial Help and Key Points

It is not necessary to describe the theory and process of Six Sigma in detail the main focus of the answer should be on the issues which the organisation will need to consider before deciding to implement Six Sigma.

Marking Guide

	Marks
(a) 1 mark for each of the steps in the six sigma process	Max 5
(b) 2 marks each for identifying the problems at Axton and how they can be analysed and solved using the DMAIC methodology	Max 10
1 mark for suggestions of activities	Max 5
(c) 1 mark for each idea on finishing the project.	Max 5

(25 marks)

(a) Once the area to be improved by the use of Six Sigma has been identified, the methodology defines a number of steps in the improvement process.

These are:

- D – Define – defining the problem, clarifying the purpose of the project and developing the project plan.
- M – Measure – data collection to quantify the problem, measuring the key process which are critical to quality.
- A – Analyse – analysis of data to find the root cause of the problem, considering the process itself, materials, environmental factors and the activities of staff involved in the process. The results from the analysis may lead to modifications in the definition of the problem.
- I – Improve – developing solutions and implementing them.
- C – Control – monitoring changes, and dealing with problems arising. The control process will focus on key performance measures.

(b) The DMAIC framework can be applied to Axton as follows:

1. Define

- The problem could be stated as follows:

‘Our support costs per call have been rising over the past 18 months, and our customer satisfaction ratings are below average. Unless we stop – or better, reverse this trend – we are likely to see ongoing business erosion over the next 18 months.’

- The purpose or goal of the project could then be stated along the lines of:

'Increase the call centre's industry-measured customer satisfaction rating from its current level (73) to the target level (85, say) by end of the fourth quarter without increasing support costs.'
- The definition stage would also include a statement of the business case for the project, usually quantified in financial terms, for example:

'Increasing our new business growth by 1 percent would increase turnover by about \$1 million. If we can do this without increasing our support costs per call, we should be able to realise a net gain of at least \$300,000.'
This will assist in any subsequent cost-benefit analysis.

2. Measure

The measure stage involves clarifying what should be measured and then measuring it. The customer surveys and benchmarking exercise would fall into this category for Axton.

A more complete set of metrics could include the following:

Customer Requirements

Quickly connect with a helpful person
Get the information I need
Apply the information, with help if needed

Measures

Wait time
Transfers, service team
Customer satisfaction, support cost
Days to close

Understand how to avoid problems recurring

3. Analyse

The analysis to date has revealed a number of potential causes. Further analysis should be aimed at answering the following questions:

- Why do customers ring more on Fridays and Mondays?
- Why are customers more reluctant to use web based support on these days? Is it because queries are more complex or do only certain less IT-competent customers ring at these times?
- Are customers aware of the types of queries (and benefits to them – i.e. faster and cheaper!) that could be solved using a web-based solution?
- Why are staff absent on Mondays and Fridays? Is it genuine sickness or are staff so over-worked that they feel that they deserve 'long-weekends' off to compensate?
- Are there times of the week (Sunday, say) when Axton is over-staffed?
- Are more complaints related to calls made on Monday and Friday?

4. Improve

Work done during the 'analyse' phase will identify several areas of prospective improvements that could deliver project results. The solution alternatives could include:

Issues	Solutions
Staffing	<ul style="list-style-type: none"> • Add staff Mondays and Fridays • Reduce staff on Sundays, say, to avoid overall cost increases • Improve staff training • Create on-call list to fill-in for absentees • Develop a new staffing model where experts can have call transferred to their mobiles so they can answer queries 24/7 if necessary.
Web service percentage	<ul style="list-style-type: none"> • Focus on services that can be done best on the Web • Define and communicate the value prop to customers • Evaluate incentives to move traffic to the Web
Transfers and call-backs	<ul style="list-style-type: none"> • Improve call centre processes to reduce transfers and call-backs without reducing customer satisfaction • Improve staff training

Each possible solution should be analysed using, for example, cost-benefit analysis.

Implementation could involve the following:

- Developing and executing a plan, including any necessary training.
- Developing and executing a communication plan to inform all affected parties.

5. **Control**

The control phase will include ongoing monitoring of each of the key performance indicators described above to see what effect the changes are making.

More importantly, the impact on the new business growth rate and average cost per call should be monitored as these had been identified as the main objectives of the exercise in the 'define' stage.

The control stage could also include modifying the plan should pilots prove ineffective. For example, the problems on Mondays could be linked more to the quality of staff on site rather than the quantity. If this is the case, then simply having more staff will not solve it. Instead staff should be graded and plans implemented to ensure a minimum number of higher grade employees on Mondays and Fridays.

(c) Closure

The team's final effort should be aimed at wrapping up the project and transferring control to the call centre group. This could include the following steps:

- Establishing a timeline and responsibilities for the transfer.
- After an agreed interval, validating the financial benefits of the changes.
- Conducting a project post-mortem from multiple perspectives – the team, the champion/sponsor, and the financial results. The emphasis here should be on process improvement rather than critiques of individual performance.
- Archiving what the project team learned so other teams can benefit from it.
- Celebrating!



ACCA

Paper P5

Advanced Performance Management

Revision Mock Examination

September 2017

Question Paper

Time allowed	15 minutes	Reading and planning
	3 hours	Writing
<p>This paper is divided into two sections: Section A – This ONE question is compulsory and MUST be attempted Section B – TWO questions ONLY to be attempted Do NOT open this paper until instructed by the supervisor. During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.</p>		

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Section A – This ONE question is compulsory and MUST be attempted

- ASPI is a large food manufacturer, making a range of basic canned and bottled foodstuffs. With a turnover of almost \$500 million. Whilst a few of ASPI brands are recognisable market leaders, notably a range of canned fish and 'household name' tomato ketchup, most of ASPI's products are in the second tier of food products. The company also produces a wide range of 'own brand' products for major supermarket chains (these are products in packaging bearing the name of the supermarket retailer, rather than the producer).

Financial performance (2012/13)

The following information is taken from the October 2012 management accounts of ASPI. It relates to the budget and latest forecast for the full financial year ending 31 March 2013.

	Year to date	Latest full year forecast	Full year original budget
	\$ million	\$ million	\$ million
Sales revenue from major supermarket chains	177.0	357.0	
Sales revenue from wholesalers	42.9	89.4	
Gross sales revenue (after returns)	219.9	446.4	495.6
Discounts given	(9.9)	(20.1)	(15.6)
Net sales revenue	210.0	426.3	480.0
Gross profit*	36.2	68.2	99.0

* The prices charged to customers are calculated to generate a gross profit margin, before any discount, of 20% (that is, $495.6 \times 20\% = 99$).

After much discussion about the possible causes of this year's poor performance, the most recent board meeting of ASPI discussed possible solutions. The following initiatives were identified, which should increase forecast sales revenue in the five remaining months of the current financial year.

- The Marketing Director stated that the effects of a major advertising campaign, aimed at wholesalers, had been omitted from the most recent forecast. This would be launched shortly, and should result in an increase in sales revenue from wholesalers of 8% for the remainder of the year.
- The Business Development Director proposed that a new product line, planned for launch in 2014, should be launched early. The new products are already in stock, and should generate gross sales revenue of \$8.4 million by year end, without affecting the sales of other products.
- The Sales Director announced that a new wholesale customer had just been won, in an Eastern European country. This new customer should generate about \$12 million of net sales revenue in the remaining five months of the year. This revenue was not included in the latest forecast, as the Sales Director had not expected to win the contract.

Customer strategy

The directors of ASPI are concerned about the high cost of servicing some of its major supermarket customers. During a recent brainstorming session, they identified the following possible strategies to deal with the least profitable of these customers:

- Stop selling to them. This will mean that the customers, if they wished to sell ASPI products, would have to buy them through a wholesaler.
- Persuade the customers to reduce the number of cost-generating activities (as identified in the forecast data below).
- Introduce new technologies to reduce the cost of the cost-generating activities.

The Sales Director of ASPI has provided the following information relating to three of ASPI's major supermarket customers:

Forecast for 2012/13

	Note	S1	S2	S3
Sales revenue (before discounts and returns) (\$million)	1	58	24	108
Average discount given (%)		3	2	8
Number of sales visits made		12	15	218
Number of purchase orders processed	2	59	26	760
Number of 'standard' deliveries made	3	104	318	602
Number of 'rush' deliveries made	4	7	2	158
Damaged products returned (% of sales revenue)	5	2.1	2.0	3.4

Notes:

- The prices charged to customers are calculated to generate a gross profit margin, before any discount, of 20%.
- Purchase orders are paper documents, specifying items and quantities required, and the expected date of delivery.
- A 'standard' delivery is one that is ordered and scheduled in the normal way, that is, at least 24 hours before the delivery is required.
- A 'rush' delivery is one that is ordered and scheduled for delivery on the day of order. This normally happens as a result of unexpectedly high demand causing a supermarket to run out of stock, or due to a customer error in calculating order quantities.
- Customers are given a full refund for all damaged goods. These goods cannot be re-used or re-sold.

The Operations Accountant has provided the following costing information:

Forecast averages for 2012/13

	Cost (\$)
Making a sales visit	685
Processing a purchase order	148
Making a 'standard' delivery	2,250
Making a 'rush' delivery	6,475

Required:

(a)

(i) Briefly explain what is meant by 'gap analysis' in the context of strategic analysis. Use a diagram to aid your explanation. (6 marks)

(ii) Briefly explain the use of the Ansoff product/market growth strategies model in strategic planning, providing examples relevant to ASPI to illustrate your explanation. (8 marks)

(b)

(i) Calculate the effect of the three initiatives (identified at the board meeting) on the full year net sales revenue gap. (5 marks)

(ii) Categorise each of the three initiatives in terms of the Ansoff growth strategies. (3 marks)

(c) Calculate and analyse the forecast net customer account profitability of each of the three major supermarket customers of ASPI, during the 2012/13 financial year.

Note: There are 12 marks available for calculations in this requirement.

(20 marks)

(d) Evaluate the three alternative strategies proposed for the least profitable of ASPI's major supermarket customers and recommend which of these strategies you believe ASPI should adopt. (8 marks)

(50 marks)

Section B – TWO questions ONLY to be attempted.

- 2.** Solar Panel Limited (SPL) manufactures a range of solar panel heating. They have recently developed the new EF solar panel. The directors of SPL recently spent \$20,000 on market research, the findings of which led them to believe that a market exists for the EF panels

The finance director of SPL has gathered relevant information and prepared the following evaluation relating to the proposed manufacture and sale of the EF solar panels.

- Sales are expected to be 2,700 units per annum at a selling price of \$3,000 per unit.
- Variable material, labour, and overhead costs are estimated at \$1,580 per unit.
- In addition, a royalty of \$250 per unit would be payable to EF (Environmental Friends), for the use of their brand name.
- Fixed overheads are estimated at \$500,000 per annum. These overheads cannot be avoided until the end of the year in which the EF solar panels is withdrawn from the market.
- An initial investment of \$7 million would be required. A government grant equal to 50% of the initial investment would be received on the date the investment is made. No tax allowances would be available on this initial investment. The estimated life cycle of the EF solar panels is six years.
- Corporation tax at the rate of 30% per annum is payable in the year in which profit occurs.
- All cash flows are stated in nominal terms and, with the exception of the initial investment and the government grant, will occur at the end of each year.
- The nominal cost of capital is 12%.

Required:

- (a) Calculate the net present value (NPV) of the EF solar panels proposal and recommend whether it should be undertaken by the directors of SPL.**
(9 marks)
- (b) Comment on three factors other than NPV that the directors of SPL should consider when deciding whether to manufacture the EF solar panels.**
(3 marks)
- (c) Explain the term 'benchmarking' and briefly discuss the process and potential benefits that can be obtained as a result of undertaking a successful programme of benchmarking.**
(8 marks)
- (d) Briefly evaluate circumstances in which a government can act as an aid to business performance.**
(5 marks)

(25 marks)

3. M Group (M) has developed internationally over the last 30 years and now trades in many diverse areas. Fifteen years ago, the company launched M Airlines, which has proved to be one of its most successful business ventures. Five years ago, the company established M Rail and obtained franchises for running rail services in its home country. However, M Rail has not achieved the success that M had intended and is frequently publicly criticised for providing services which do not run on time.

The majority of the citizens in M's home country have heard of the brand and the Chairman believes the reputation of the brand name places a heavy burden of responsibility on M not to disappoint its customers. The Chairman himself has impressed his own personality on M by pursuing personal publicity in business ventures and becoming involved in high-profile and sometimes dangerous 'leisure' activities.

M has achieved a reputation for entering markets which are dominated by major companies, and has been successful in taking business from some major competitors by exposing their consistently poor service and complacency.

The principal business approach which has been adopted is that of 'brand stretching' across different products and services. Each company within the group runs its own affairs but they are all encouraged to help each other resolve their particular problems in a kind of family spirit.

Key strategic factors

The Chairman has stated that M is in business 'to be different' and that the M brand name should be clearly associated with this.

It is considered essential by the Directors that any products or services incorporated within the brand must help to build its good reputation, provide an opportunity to add value, and yield an appropriate trade-off between risk and rewards.

The Chairman considers that there are a number of key factors which have contributed to the success of M. The brand name is associated with being the consumer's champion, and has been very successful in delivering what the Chairman refers to as a 'sense of excitement' in most ventures to which it has been applied. In addition, the business contacts which have been established are important and he recognises that his own personality attracts customers and venture partners. M also encourages talented staff within the group to interact with each other in order to solve problems. The management style of M is therefore seen as a major contributory factor in its corporate success. Much weight is placed on its corporate image. The Chairman explains that the quality of a customer's experience when coming into contact with M is the most important item in determining its success.

Management style

The Directors agree that the first priority in being able to achieve success is for M to ensure that the Group employs personnel of the best quality and calibre. Their simple philosophy is that motivated staff lead to satisfied customers which results in repeat and new business and provides benefit to the shareholders.

M has a flat management structure with few authority levels within the hierarchy. The Chairman himself is committed to providing good communication channels within and

outside the group. He believes very firmly that managers within the organisation must be prepared to listen both to the customers and also the staff.

Financial performance

The business approach which has been developed is that the brand name is provided by M with a cash injection from a joint venture partner. This has generally proved to be a very successful formula although this has not been the case with the latest venture into the domestic railway market. The Directors consider that the performance of M Rail will improve following a programme to upgrade the infrastructure inherited from the previous nationalised rail network.

Comparative financial information relating to M Airlines and M Rail for the last two years at 31 December is as follows:

	2012 \$m	2013 \$m
Turnover		
Airlines	570	678
Rail	410	423
Pre-tax profit		
Airlines	60	80
Rail	30	32
Capital employed		
Airlines	750	790
Rail	530	640

Other performance indicators

The following information is provided relating to M's airline and rail businesses:

Airline	2012	2013
Number of passengers carried	1.2 million	1.4 million
Passenger miles travelled	3,000 million	3,300 million
<i>Ratio of cabin staff to passengers (excluding aircrew, i.e. pilots and navigators):</i>		
Economy class	1 to 10	1 to 12
Business and first class	1 to 4	1 to 5
Number of airline routes flown	40	44

- M Airlines sells economy, business and first-class seats to passengers. The prices reflect the level of comfort and service. For example, first-class seats cost double the price of business class seats and ten times the price of economy seats.
- Airline passenger numbers are expected to increase by 3% in the next two years in the long-distance economy-class market from which M attracts most of its customers.
- There is an increasing level of partnerships emerging among airlines whereby each carries the other's passengers as well as its own on designated routes. M is engaged in such partnerships for two of its routes.

- A general survey of satisfaction among airline passengers carried out by independent representatives from the travel industry in M's home country ranks M as being within the top three for most services.

Rail	2012	2013
Number of passengers carried	4.5 million	4.3 million
Passenger miles travelled	160 million	150 million
<i>Ratio of customer attendants to passengers:</i>		
Standard class	1 to 100	1 to 120
First class	1 to 20	1 to 25
Number of routes travelled	25	25

- M Rail sells standard and first-class seats to its passengers. The first-class seat is priced at about double that of a standard priced seat.
- An increase of 5% in total rail passengers is expected over the next four years.
- M operates the railway services under a franchise agreement, which is due for renewal in five years' time.
- The government has established a Railway Regulatory Authority to monitor the quality of the services provided by the M Group and other railway franchisees, and is constantly increasing pressure on the franchisees to improve their services.
- A general survey of passenger satisfaction carried out by the Railway Regulatory Authority was highly critical of P's services with regard to its record relating to punctuality and service on its trains.

Future development

M has enjoyed considerable success in its ventures within its domestic market. However, the Directors believe there is much opportunity to develop the brand name within the emerging highly populated retail markets elsewhere in the world where currently it is relatively unknown.

Required:

- Discuss the importance of the external forces which M faces in its worldwide business development. What Key performance indicators could they use to monitor the impact of these forces.** (13 marks)
- With reference to the comparative financial and other performance indicators, evaluate the performance of the M Airlines and M Rail companies. Recommend ways in which they may increase their individual contribution to the future development of the Group.**

(Maximum of 5 marks for calculations)
(12 marks)

(25 marks)

4. Axton Inc is a support organisation dealing with customer problems and concerns over their IT systems. Customers can access web-based support or telephone to discuss their IT problems with Axton's specialists. Over the last eighteen months Axton has seen its rate of new account growth fall while support costs per call have risen.

Customers were asked the question, 'What influences your level of satisfaction with our services?' The following were typical responses:

- 'I'm happy when my call gets answered quickly and the person I talk to knows their stuff and gives me an answer on the first call. When I have to wait for a call back or get transferred to someone else, repeating some of the same stuff – that's when I get frustrated!'
- 'Last time I called I got transferred five times and ended up with the same person I started with!'
- 'I call 3 to 4 times a week, and the thing I find most annoying is the lack of consistency. Sometimes my call gets answered in 2 minutes and sometimes it's 10.'
- 'There's a lot of variation in how long it takes to get answers to very similar issues – your competitors are more consistent.'

Concerned about this feedback, the directors commissioned a benchmarking exercise, which gave the following results:

	Axton	Industry average	Best in class
Customer satisfaction rating	73	76	87
Support costs per call (\$)	36	30	26
Average number of transfers	2.6	1.7	0.9
Call wait time (minutes)	4.5	4.1	1.8

Further analysis revealed the following:

- More calls are received on Mondays and Fridays when staff are much more likely to be sick or on leave.
- Customers seem much less likely to use web-based support on these days
- Transfer errors are mainly due to inexperienced staff

A project team is to be set up to resolve these problems using the six-sigma 'DMAIC' methodology.

Required:

(a) Briefly outline the six-sigma DMAIC methodology for process improvement. (5 marks)

(b) Describe how the above problems at Axton can be analysed and solved using the DMAIC methodology. Your answer should incorporate the actions described in the question and make suggestions about the additional activities that should be carried out. (15 marks)

(c) Describe how the project should be finished. (5 marks)

(25 marks)



ACCA

Paper P7 (International) Advanced Audit & Assurance

Revision Mock Examination

September 2017

Question Paper

Time Allowed	15 minutes	Reading and planning
	3 hours	Writing

This paper is divided into two sections:

Section A – BOTH questions are compulsory and **MUST** be attempted

Section B – TWO questions **ONLY** to be attempted

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

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Section A – BOTH questions are compulsory and MUST be attempted

1. Lacroix Hotels is a small hotel group that owns and manages 18 hotels in the country where it is based. It is owner-managed by the 4 people who set the company up 8 years ago (together with a team of managers who do not own any shares), and has recently reported its first profit after several years of losses. The company borrowed heavily in its first few years and the main reason it has taken so long to record a profit is the high level of interest payments it is making. The first capital repayment of the loan is due to take place on 14 August 2016.

You are taking over as the audit manager on the team this year having had no previous involvement with this client. The partner, Mike Ross, has been involved with this client for the last 2 years, and he is keen for you to have plenty of client contact to help build up your client understanding, and to ensure a smooth audit process. The final audit of the financial statements for the year ending 31 March 2016 is due to begin towards the end of April, and this morning Mike sent you the following email:

Hi

Regarding the Lacroix Hotels audit, I would like you to prepare some briefing notes for me. In particular, can you:

- (a) Using the information you have gathered so far, identify and explain the business risks facing Lacroix Hotels.** (11 marks)
- (b) Identify and explain the risks of material misstatement that may arise from the health and safety breach and the decision not to renew the gym equipment in the hotels.** (8 marks)
- (c) To assist my meeting (later this week) with Leroy Galliant:**
 - (i) Define forensic auditing, and** (2 marks)
 - (ii) suggest potential reasons why the inventory counts are showing problems, and the procedures we could carry out that could help to establish which of the reasons is actually to blame.** (10 marks)

Thanks

Mike

Last week you met with the Finance Director, Leroy Galliant. You made the following notes at the meeting:

"The company is expecting to make a small profit for the y/e 31 March 2016, although there are a few issues to resolve before draft financial statements can be issued. The year-end inventory count did not go well, with around \$175,000 of inventory recorded on the system not being found anywhere in the various storage areas. Apparently a surprise inventory count halfway through the accounting year had the same problem, although Leroy seems to have no idea what the problem is. He wants to meet with Mike to discuss how we might help with this issue – he is not clear what "forensic auditing" involves but is keen to understand it better before taking the matter any further. He is also interested to hear Mike's views on what the problem might be, and how we might go about trying to resolve it.

With the first big loan repayment coming up in a few weeks, the hotels have stopped any big capital projects in order to preserve cashflow – for example, the gym equipment in most of the hotels was due for renewal in January 2016, but they have put this back by at least 12 months and seem willing to put it back another 12 months if necessary. Leroy also mentioned some investigation by the health and safety authorities – something to do with a lack of supervision of guests using gym equipment – that has resulted in a couple of serious injuries to guests around 6 weeks ago. It is too soon to know for sure what will happen, but apparently they may have to close the gyms whilst the investigation continues. Leroy is worried, because he knows another hotel group was forced to close their gyms for over 6 months last year after a similar incident.”

Mike has not spoken with Leroy for a few weeks, and has his concerns about the company. A number of competitors have been expanding in recent months and have been marketing themselves aggressively to win business. Several of the competitors are investing in new environmentally friendly systems that reduce water and electricity usage, and Lacroix Hotels have yet to follow this trend – and there is concern that they are losing some business, especially corporate clients who use the company for conferences, as a result.

Required:

Respond to the email from Mike Ross.

(31 marks)

Professional marks are available for the structure, logical flow and quality of writing in the Briefing Notes.

(4 marks)

Note. Assume it is 1 March 2016.

(35 marks)

2. Plaza, a limited liability company, is a major food retailer. Further to the success of its national supermarkets in the late 1990s and 2000s it has extended its operations throughout Europe and most recently to Asia, where it is expanding rapidly.

You are a manager in Andando, a firm of Chartered Certified Accountants. You have been approached by Duncan Seymour, the chief finance officer of Plaza, to advise on a bid that Plaza is proposing to make for the purchase of MCM.

Some of your audit staff seem unclear about why your firm is involved with this client's acquisition strategies, and the senior partner has made a suggestion:

Hi

Following our discussion about the audit staff and their apparent lack of understanding of the issues with the Plaza situation, I want you to prepare some notes on the following matters, so we can distribute them to all junior audit staff:

- (a) Define 'due diligence' and describe the nature and purpose of a due diligence review.** (3 marks)
- (b) Explain the matters you should consider before accepting an engagement to conduct a due diligence review of MCM.** (12 marks)
- (c) Illustrate how:**
 - (i) Enquiry** (4 marks)
 - (ii) Analytical procedures** (6 marks)**might appropriately be used in the due diligence review of MCM.** (25 marks)

You have ascertained the information below from a briefing note received from Duncan:

MCM provides training in management, communications and marketing to a wide range of corporate clients, including multi-nationals. The 'MCM' name is well regarded in its areas of expertise. MCM is currently wholly-owned by Frontiers, an international publisher of textbooks, whose shares are quoted on a recognised stock exchange. MCM has a National and an International business.

The National business comprises 11 training centres. The audited financial statements show revenue of \$12.5 million and profit before taxation of \$1.3 million for this geographic segment for the year to 31 March 2015. Most of the National business's premises are owned or held on long leases. Trainers in the National business are mainly full-time employees.

The International business has five training centres in Europe and Asia. For these segments, revenue amounted to \$6.3 million and profit before tax of \$2.4 million for the year to 31 March 2015. Most of the International business's premises are held on operating leases. International trade receivables at 31 March 2015 amounted to \$3.7 million. Although the International centres employ some full-time trainers, the majority of trainers provide their services as freelance consultants.

Required:

Respond to the senior partner's request.

(25 marks)

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This is a blank page.
Section B begins on page 8.

Section B – TWO questions ONLY to be attempted

3. You are an audit manager in Bartolome, a firm of Chartered Certified Accountants. You have specific responsibility for undertaking annual reviews of existing clients and advising whether an engagement can be properly continued. The following matters have arisen in connection with recent assignments:

(a) Leon Dormido is the senior in charge of the audit of the financial statements of Moreno, a limited liability company, for the year ending 31 March 2016. Moreno's Chief Executive Officer, James Bay, has just sent you an e-mail to advise you that Leon has been short-listed for the position of Finance Director. You were not previously aware that Leon had applied for the position.

(5 marks)

(b) Chatam, a limited liability company, is a long-standing client. One of its subsidiaries, Ayora, has made losses for several years. At your firm's request, Chatam's management has made a written representation that goodwill arising on the acquisition of Ayora is not impaired. Your firm's auditors' report on the consolidated financial statements of Chatam for the year ended 31 December 2015 is unmodified. Your firm's auditors' report on the financial statements of Ayora is similarly unmodified. Chatam's Chief Executive, Charles Barrington, is due to retire in late 2016 when his share options mature.

(6 marks)

(c) Pinzon, a limited liability company and audit client, is threatening to sue your firm in respect of audit fees charged for the year ended 30 September 2015. Pinzon is alleging that Bartolome billed the full rate on air fares for audit staff when substantial discounts had been obtained by Bartolome.

(4 marks)

(d) Hewitt, a limited liability company and audit client, has seen its profits collapse in recent years. The company has decided it needs a major restructuring if it is to survive, and has asked your firm for advice in producing a business plan to take to its bank in order to achieve new finance.

(5 marks)

Required:

Comment on the ethical and other professional issues raised by each of the above matters and their implications, if any, for the continuation of each assignment.

(20 marks)

Note. The mark allocation is shown against each of the three issues.

Note. Assume today's date is 1 March 2016.

4. You are the manager responsible for the audit of Seymour Co. The company offers information, proprietary foods and medical innovations designed to improve the quality of life. (Proprietary foods are marketed under and protected by registered names.) The draft consolidated financial statements for the year ended 31 December 2015 show revenue of \$74.4 million (2014 – \$69.2 million), profit before taxation of \$13.2 million (2014 – \$15.8 million) and total assets of \$53.3 million (2014 – \$40.5 million). The following issues arising during the final audit have been noted on a schedule of points for your attention:

(a) In 2009, Seymour had been awarded a 20-year patent on a new drug, Tournose, that was also approved for food use. The drug had been developed at a cost of \$4 million which is being amortised over the life of the patent. The patent cost \$11,600. In December 2015 a competitor announced the successful completion of preliminary trials on an alternative drug with the same beneficial properties as Tournose. The alternative drug is expected to be readily available in two years' time.

(7 marks)

(b) Seymour offers health-related information services through a wholly-owned subsidiary, Aragon Co. Goodwill of \$1.8 million recognised on the purchase of Aragon in January 2013 is not amortised but included at cost in the consolidated statement of financial position. At 31 December 2014 Seymour's investment in Aragon is shown at cost, \$4.5 million, in its separate financial statements.

Aragon's draft financial statements for the year ended 31 December 2015 show a loss before taxation of \$0.6 million (2014 – \$0.5 million loss) and total assets of \$4.9 million (2014 – \$5.7 million). The notes to Aragon's financial statements disclose that they have been prepared on a going concern basis that assumes that Seymour will continue to provide financial support.

(7 marks)

(c) In February 2016 Seymour announced the recall and discontinuation of a range of petcare products. The product recall was prompted by the high level of customer returns due to claims of poor quality. For the year to 31 December 2015, the product range represented \$8.9 million of consolidated revenue (2014 – \$9.6 million) and \$1.3 million loss before tax (2014 – \$0.4 million profit before tax). The results of the 'petcare' operations are disclosed separately on the face of the statement of profit or loss.

(6 marks)

Required:

For each of the above issues:

- (i) comment on the matters that you should consider; and**
- (ii) state the audit evidence that you should expect to find, in undertaking your review of the audit working papers and financial statements of Seymour Co for the year ended 31 December 2015.**

(20 marks)

Notes. Assume today's date is 1 March 2016. The mark allocation is shown against each of the three issues.

5.

(a) Explain the external auditor's responsibility in respect of a client's going concern status, and describe the potential effects on the audit report should there be going concern threats at a client. (8 marks)

(b) You are an audit manager in Fine & Young, a firm of Chartered Certified Accountants. One of your audit clients, Icehouse, is a textbook publisher. Icehouse is planning to expand through the acquisition of a number of small publishers of other media such as DVD and CDs. The finance director of Icehouse has been reviewing the financial statements of potential targets. He has come across an auditors' report dated 19 January 2016, on financial statements for the year ended 30 September 2014, which does not have the standard wording of an unmodified report. The finance director has now approached you for an explanation of its meaning. The auditor's responsibility and opinion paragraphs are as follows:

'Auditor's responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

However, the evidence available to us identified certain transactions which had not been included in the previous year's records and as a result had been omitted from the financial statements for the year ended 30 September 2013.

Adjustments have been made and are disclosed in Note 22. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion'.

Opinion

'In our opinion the financial statements give a true and fair view of the state of the company's affairs as at 30 September 2014 and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards.

'The company's liabilities exceed its assets at 30 September 2014 creating an adverse situation which the directors believe is reversible over the coming twelve months. The directors further believe that the company is capable of continuing to trade for twelve months from the date of this report.

'19 January 2016'

Required:

Identify and explain the weaknesses of this report.

(12 marks)

(20 marks)

Note. Assume today's date is 1 March 2016.

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ACCA

Paper P7 (International)

Advanced Audit & Assurance

Revision Mock Examination

September 2017

Answer Guide

Health Warning!

How to pass

Attempt the examination under exam conditions BEFORE looking at these suggested answers. Then constructively compare your answer, identifying the points you made well and identifying those not so well made.

If you got basics wrong then re-revise by re-writing them out until you get them correct.

How to fail

Simply read or audit the answers congratulating yourself that you would have answered the questions as per the suggested answers.

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Answer 1 – Lacroix Hotels

Tutorial help and key points

This question is a common audit planning style question, using the business risk (top-down) approach.

Marking scheme

In **part (a)**, each reasonably explained business risk is worth 1 mark, with ½ mark if the risk is explained weakly and 1.5 marks for a top quality explanation. The larger proportion of marks awarded are awarded for the numerous financial / cashflow risks facing the company.

In **part (b)**, up to 2 marks available for each valid risk of material misstatement, with a maximum of 5 marks for either of the 2 issues (health and safety breach, gym equipment).

In **part (c) (i)**, up to 2 marks based on quality of definition. For 2 marks it should involve at least 2 sentences!

In **part (c) (ii)**, 1 mark per valid reason, and 1 mark per valid procedure (note that it needs to match the reason), with no more than 2 procedure marks per reason.

To clarify, in order to score full marks there would need to be at least 4 reasons provided with associated procedures. Professional Marks would be allocated as follows:

- **2** for the appropriate format, ie structure of the briefing notes (headings, to / from etc) and an Introduction
- **2** for the quality and professionalism (clarity) of the writing including the structure of the main content (i.e. paragraphs and headings).

In all cases, answers should be in sentences – not a shopping list of 2 – 3 words or brief notes which would **not** answer the question set. These would score few if any marks.

(a) Business risks

Financial position / cashflow

The company clearly has some major financial problems and recent events may make these worse.

There have been several years of losses. Whilst there appears to be a move towards profit, this may not have taken account of additional costs that are likely to be incurred in the near future, ie:

- A major capital repayment is about to fall due and currently the company cannot afford not to pay it as this may result in them being wound up.
- If the inventory is indeed lost, presumably it will need replacement.

- Whilst a cessation of capital spending will improve cashflow in one respect, it is likely to result in higher repair and maintenance costs as assets (such as gym equipment) get older and break down more regularly.
- The existing health and safety breach is likely to lead to **further** claims against the company, and possibly increasing the financial level and severity of fines from the authorities. If the gym equipment is not renewed, presumably there is a risk of increased claims in the future.
- The company may be forced into expenditure on gym equipment to satisfy the health and safety authorities. Alternatively, they may decide to close the gyms and not replace the equipment, but this will probably result in lost customers and exacerbate cashflow problems.
- It is clear that the company already has a high interest cost burden, and any fall in customer numbers may make meeting interest payments even more difficult.

Competition/reputation

It is clear that the company operates in an increasingly competitive industry* and its financial position means it may find it difficult to keep up with the quality of service being offered by other hotels.

As more and more competitors are keen to improve their environmental performance and reputation, a failure to invest in environmentally friendly systems may lead to a major loss of corporate customers, further affecting their future cashflows.

Internal controls

There appears to be a major weakness in their physical inventory control. There is a large difference between their actual inventory holding and what their IT systems report, and it is not known whether this is down to errors on their system or actual physical loss of inventory. The fact that this problem arose 6 months ago and has not been resolved is very concerning.

Interest rate risk

It is not known whether their borrowings are fixed or variable rate, but clearly if it is the latter then their problems meeting interest payments would get worse should interest rates rise in the future.

Economy

The company operates in an industry that is heavily affected by economic conditions. In a recession, hotel visitor numbers are guaranteed to fall leading to even more financial problems.

(b) Risks of Material Misstatement

- Breach of health and safety

There may be an understatement of provisions for the compensation claims that are likely to result from the injuries to users of the gyms. Alternatively, if claims are only considered possible rather than probable, the problem could be under-disclosure of the resulting contingent liabilities and non-compliance with IAS 37 (provisions and contingent liabilities).

There may also be an understatement of provisions for the likely fines and penalties arising from the authorities for breaching health and safety.

If the gym equipment cannot be used because it is dangerous, then the equipment may be overstated as there are clear signs of impairment and Lacroix failing to comply with IAS 36 (impairments).

Given the reputation damage, claims against the hotel, and potential closure of the gyms, this could give rise to going concern threats and these may be under-disclosed in the financial statements.

- Failure to invest in gym equipment

If the gym equipment is being kept in use for longer than previously planned (and assuming they do not get closed down and can indeed keep using the equipment), the depreciation policy for gym equipment may be incorrect – failure to comply with IAS 8 (accounting policies), in that it is likely to be spreading the cost of assets over too few years. This could lead to undervaluation of the assets as they will be written off too quickly.

This failure to reinvest may result in further reputation damage and lost customers which may also contribute to going concern threats described above, leading to further risk of under-disclosure of these threats in the financial statements.

(c) Briefing notes

Briefing Notes – Lacroix Hotels

To: Mike Ross

Prepared by: Audit Manager

Date: 1 March, 2016

Subject: Forthcoming client meeting

As requested, I have prepared some notes on forensic auditing, and have considered what might have happened regarding their inventory problems.

Forensic auditing

Forensic auditing involves collecting evidence which can then be used as part of a legal case or similar dispute, such as an insurance claim. If Leroy Galliant is planning to involve us to investigate the inventory problem, he may use our evidence to discipline members of staff or may call in the police, making our investigation "forensic" by its nature.

We therefore, must be mindful as to **how** we collect, record and report our findings in this respect.

Inventory problem – reasons and procedures

There is a possibility that there is more than one problem. It is not known yet whether the problem noted 6 months ago was corrected in the inventory records at that time. If it was, then the year-end count may be an additional \$175,000 error.

• Theft

One obvious conclusion to draw is that inventory may be stolen, resulting in the overstatement on the system. If this happened 6 months ago it may prove difficult to investigate at this late stage. However, some possible procedures we could carry out are:

- A review of the security controls over inventory storage to assess whether theft appears possible.
- A review of personnel records to assess whether the theft may coincide with a starter or leaver.
- Discussions (documented) with staff to assess their view of the quality and effectiveness of security over inventory during the year.

• Inventory count procedures

It may be the case that the inventory does in fact exist – but inventory counting procedures are poor quality and have failed to count the entire inventory.

We should review inventory count instructions and our own audit working papers (I assume our staff were in attendance) for evidence of deficiencies in the counting procedures, and compare the locations counted with prior years to establish if any have been forgotten in this year's counts.

• Inventory thrown away

Given the nature of hotel inventory (eg food and drink), there may be a chance that the shortage is due to a failure to record items thrown away due to passing their sell-by dates.

We should gain an understanding of what process exists (if any) to ensure all inventory disposals are recorded, and discuss with hotel staff who makes such decisions and how regularly staff make their own decision to throw things out.

- **Updating inventory records**

Inventory records suggest a shortfall of inventory actually held. However, it may be the case that inventory records are themselves overstated because purchases are being over-recorded, or sales / usage under-recorded.

We need to review controls over goods in and out to assess the likelihood of this, and should review the sequences of goods received notes and goods despatched notes on the system to ensure both are complete and there is no double-recording.

We should also match GRNs and GDNs to purchase and sales invoices to assess whether there may be a cut-off error (eg a major purchase at the year-end may have been included on the system even though the inventory had not actually arrived), although the fact these problems appeared 6 months ago suggest this is unlikely.

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Tutorial help and key points

This question covers the non-audit assurance part of the syllabus, which is often the subject of question 2 on the P7 exam. Each **part** of the question is clear in what it requires, but care must be taken in **(c) (ii)** that all procedures are analytical ones rather than something else.

Parts (a) and **(b)** are not difficult, but **part (c)** (especially **(ii)**) are harder, so do not worry if you found it hard to come up with enough ideas.

Marking scheme

In **part (a)**, 1 mark per relevant point that defines/describes the due diligence process and its purpose.

Part (b) has 2 professional marks, with 1 for appropriate format, ie memo structure and 1 for a personal but professional tone that takes account of the junior nature of the staff member who is going to read it.

With so many potential issues to mention, it is 1 mark per valid point if properly explained.

Allow up to 1.5 marks for the issues specific to a due diligence (ie the second of the 2 lists in the suggested solution below).

Part (c) earns 1 mark per enquiry or analytical procedure (but they **MUST** be analytical).

(a) File Note for Audit Staff – Due Diligence

Prepared by: Audit Manager

Date: March 2016

Due Diligence

Due diligence is a process of gathering information before making a decision. For example, when taking on a new client various procedures are performed in respect of potential money laundering, and this is often called "client due diligence".

However, the term is most commonly associated with a company investigating a potential takeover target before committing themselves to the deal. Such deals often involve substantial financial commitments, so it is clearly important that certain things are reviewed and confirmed in advance.

The nature of a due diligence review tends to focus on:

- Confirming that assets exist, are owned by the target company, and are valued appropriately.
- Assessing the likelihood of hidden or undisclosed liabilities.
- Assessing the existence and impact / effect of operational issues, such as high levels of staff turnover and customer complaints etc.

- Confirming any representations made by the management of the target company.
- Assessing the feasibility of the company's forecasts and future growth potential.

Whilst these things need to be carefully confirmed given the financial sums involved, the need for speed (to avoid other buyers trying to de-rail the process) and the forward-looking nature of the assignment mean that the work is often limited to analytical techniques and enquiries of management, unlike the more detailed nature of a financial statement audit.

(b) This document is to help you understand what has to be considered and completed before we can accept appointment for the due diligence work on MCM for our client, Plaza.

As you will know, we always need to go through certain processes before accepting an appointment to do anything for a client, and you have probably seen some of this detail in your first few audit assignments with our firm. Most of the things we do for a potential audit client will also be done for a due diligence assignment, namely:

- **Objectivity (independence)** – we will be giving an opinion to our client and we need to ensure that we are able to give this opinion objectively, so it is essential that we have no obvious link to the client that might threaten this objectivity. You will be aware of such threats (self-interest, familiarity etc) during your audit training.
- **Competence** – we need to assess whether we have enough understanding of the target company and its industry to be able to carry out the due diligence assignment.
- **Resources** – clearly we need to assess whether we have the staff to be able to meet the client's deadlines, which are likely to be tight given the nature of this assignment.
- **Conflicts of interest** – there may be links between the target company and our other clients, and given how difficult conflicts of interest can be to resolve, we may be better off avoiding the risk of them arising if such links exist.
- **Fees** – obviously we cannot accept any work if we do not expect to earn suitable fees to make it profitable.
- **Other services** – subject to objectivity issues, we assess whether we may be able to win additional work from doing the due diligence exercise. Of course, this links to the point on fees, as we could be willing to accept a reduced fee if other work is available in the future.
- **Financial health of client** – if we have serious concerns over a client's financial health, there is a strong argument for not taking on the work as we may never get paid for it.
- **Integrity of client** – as with any new client, we need to assess the client's reputation as their bad reputation may rub off on our firm. With due diligence we are likely to rely heavily on enquiries of management, so we need to be able to rely on what we are told.

In addition to the issues noted above, there are additional considerations with a due diligence assignment (ie that do not arise with an audit assignment). These arise because due diligence does not have the same structure of standards and

laws that an audit has, which means there are more things that need to be agreed with the client before the work begins:

- **The precise nature of the work required**

We clearly have been asked to advise on the bid, but will need to understand exactly what the client has in mind, to prevent any misunderstandings. Clearly this will have a major impact on staffing, time, fees etc.

- **The amount of evidence we will have access to**

On an audit we have a legal right of access to everything, but on a due diligence there are no laws to help us so we need to agree how much access we will have with the client in advance to avoid problems later on during the work.

There is no legal obligation for either Plaza or MCM and their personnel to provide us with all the information and explanations, which will have an impact on our work and the opinion we reach.

- **The role of Duncan Seymour**

We need written confirmation that Duncan is approaching us on behalf of the board of directors. If he is in communication with us without the knowledge of his fellow directors, we may find that our client is Duncan rather than the company.

- **The reason for the acquisition**

This will help us to understand the future plans for the business: if it is to be broken up and sold OR any change to its current operational structure – and therefore assess the value of the target company to Plaza.

- **Why Plaza are asking us**

We need to understand why Plaza has approached us and not used its current auditors. There may be issues that we do not currently understand and will need client permission (professional clearance) for access to its auditors.

- **The form of report and assurance Plaza wants**

We will need to clarify the wording of opinion that the client wants. With an audit the form of report is constrained by audit standards and the law, but with due diligence we have to agree something with the client in advance.

(c)

(i) **Enquiry**

- Whether there are likely to be economies of scale as a result of the takeover, as these may be essential to make the deal of value (worthwhile) to Plaza.
- Whether there are any known terms in contracts which may “crystallize” on a takeover, eg:
 - Lease contracts which can be voided by the lessor on a change of ownership – this could also cause operational issues;
 - Employee contracts which pay out a bonus on a takeover, or allow the employee to leave without notice on such an event;
 - Customer and supplier contracts that can be voided or renegotiated on a change of ownership;

- Bank loans which become repayable, or where the covenants change, on a takeover.
- The extent to which MCM relies on frontiers for sales, use of support services such as payroll, IT, building space etc as these may be withdrawn after the takeover is complete. Even if not withdrawn, MCM may be getting favourable terms from its current owner that would be withdrawn after the deal.
- Whether there is any finance owed to MCM that becomes repayable on a takeover.
- Who the key employees of MCM are and whether they have given any undertakings to stay ('locked in') with the company or leave after the takeover.
- Confirm future booking levels to determine whether there are any customers of MCM who are unlikely to want to continue as customers of Plaza. For example, if Plaza recently lost customers due to poor service these customers may leave MCM as well, fearing the same will happen with their training.
- Any significant events that have occurred since the previous year end, which was almost an entire year ago.

(ii) Analytical procedures

- A comparison of month-by-month sales and costs, for each division of MCM, against forecasts and prior periods to establish trends in performance.
- A comparison of prior year forecasts with actual results to assess how accurate their forecasting has been – this will help to assess their future forecasts.
- A comparison of the forecasts (and assumptions behind them) with known information about the industry and economy in general to ensure realistic.
- Review of profit margins, ROCE etc on a centre by centre basis to assess inaccurate reporting or under-performing centres.
- Compare number of delegates per course on a centre by centre basis to assess performance.
- Compare revenue earned on a client by client basis to assess quality of sales and marketing operations.
- Compare level of client retention and customer complaint to assess likely level of customer goodwill at each centre.
- Compare bank and loan balances with overdraft limits and lending facilities to assess amount of "headroom" MCM have for future finance.
- Assess the proportion of MCM revenues currently being earned from frontiers directly, or from clients of frontiers, as these revenues may be lost after the takeover.
- Compare the terms of any transactions between MCM and frontiers with normal commercial terms to assess whether they are currently benefiting from any generosity from their parent.

Answer 3 – Bartolome

Tutorial help and key points

This is a fairly standard ethics / professional issues question and you do need to incorporate the appropriate ethical threats (self-review, familiarity etc), but also consider other professional issues (this can be virtually anything) such as quality control, fees, client integrity etc.

Marking scheme

Throughout the answer, 1 mark per valid point raised.

In each part, 1 mark is "reserved" for a comment on whether the assignment should be continued (so if you do not mention whether the assignment can be continued in any part of the answer, the max score would be 16/20).

(a) Moreno

Leon has a clear self-interest threat to his objectivity (independence), as his desire to join the client may result in him ignoring issues / problems during the audit. Alternatively, he may "invent" problems in the hope of impressing the client and getting the job.

Leon is required (by ACCA's code of conduct) to inform the firm when applying for a role with a client, as he would need to be removed from performing any further work on Moreno immediately. The fact that he has not informed us does suggest his integrity is also in question.

Since he has been shortlisted, this application has been progressing for some time. It is therefore of concern that the client has only just informed us, and the integrity of James Bay must also be in question.

If Leon gets this job, we may have to resign as auditors (the existing audit team will have potential familiarity threats), because we may not have sufficient staffing resources, for a completely new audit team, comprising of non-related colleagues. It may be the case that Leon's employment contract with our firm does not allow him to join a current client, meaning he has also breached the terms of his employment with us.

Leon needs to be removed from this audit with immediate effect and all of his work on it reviewed by an independent member of staff, before we do any further work. The assignment can probably be continued, assuming no problems are discovered during this review, but if Leon does join this client we will need to strongly consider not offering ourselves for re-appointment next year.

Leon needs to be warned about his conduct as he has breached ACCA's code of conduct. If he has breached the terms of his employment contract, further action may be necessary.

(b) Chatam

As a longstanding client, there is an increased familiarity threat to our firm's independence. We should ensure regular rotation of staff to minimise this threat.

A management representation is unlikely to represent sufficient audit evidence in any situation, but especially in this case. Charles Barrington has a clear personal incentive to protect the reputation of the company in order to maximise the value of his shares. He is hardly likely to admit that the company has financial problems.

A full impairment review of the subsidiary should have been carried out by the client, and evidence obtained by our audit firm to verify the conclusions of this review. For example, the subsidiary's finances should have been assessed along with the availability of assets to use as security for new finance, the level of dependence on the parent reviewed etc.

Based on the information given, the subsidiary appears to be impaired, suggesting that the client's financial statements may be materially misstated. This leads us to question the integrity of Charles Barrington.

Our firm may have issued unqualified opinions without gaining sufficient appropriate evidence, which raises serious concerns about the quality of the audit work. Given the familiarity threat noted above, we must be concerned regarding those who planned this audit did so with the necessary levels of probity and professional scepticism.

A full cold review should be carried out on this audit to assess how much audit work was carried out. We almost certainly need to rotate the senior members of the audit team if we are to continue with this client next year, and if there are any concerns over the integrity of Charles Barrington we should consider not seeking reappointment.

(c) Pinzon

The threat to sue us creates an advocacy threat as we are "taking sides" against our client and clearly cannot be seen to be objective as a result.

The overcharged expenses could be a simple error, and if this is the case it may be possible to rectify the situation with a written apology and a face-to-face discussion with the client.

On the other hand, it may have been a deliberate attempt by one of our staff to overcharge a client. This would raise questions about this person's integrity and whether we would want them to continue working for our firm.

We need to understand what expenses were discussed and agreed with the client in advance (these should be set out in the engagement letter). If fees were agreed and we subsequently managed to get discounts, we may be under no obligation to pass on this "good fortune" to the client, especially as it may not have been willing to pay any extra should air fares have risen instead of fallen.

Whilst the threat of legal action remains, this audit cannot be continued as the threat is simply too great, but if a quick resolution can be found there should be no problem in continuing.

(d) Hewitt

An advocacy threat to our objectivity and independence exists if we are seen to be helping a client survive, because we are likely to be viewed as supporting them and "on their side".

A more general management threat to our objectivity may arise if we are seen as working too closely with management and running their business on their behalf.

The business plan and advice could raise significant fees and create a self-interest threat to our independence, especially if the advice is expected to continue into the future.

We may become liable to the client's bank if it lends money based on the assurance we give on the business plan, although we may be able to issue a liability disclaimer within our assurance report.

Our ability to objectively assess the client's going concern status during the audit, when we have been directly involved in advising them on how to survive, creates a major self-review threat to our independence. It may not be wise to offer the additional services as a result of this threat.

If safeguards were put in place, such as an independent partner performing a hot review on the audit files before the audit report is signed, and the client accepting in writing its sole responsibility for any restructuring that takes place, then we may be able to offer the services requested.

Answer 4 - Seymour

Tutorial help and key points

This is a standard P7 type of requirement looking for matters (relevant accounting standards, materiality of any errors) and evidence (think AEIOU) and relies heavily on your accounting knowledge. Evidence should address the accounting matters you have raised.

Marking scheme

In each case, 1 mark per matter and 1 mark per piece of evidence, assuming relevant and clearly explained.

(a)

(i) Matters

The patent is an intangible asset and should be amortised over its 20-year life. Assuming it has been amortised for 5 years so far, its carrying value will be \$8,120 ($14/20 \times \$11,600$) and even if this were to be written off in full it would only represent a tiny proportion of profit and assets and so would not be material.

Development costs can only be capitalised to the extent that they are likely to be recovered through future sales of the developed product (IAS 38 intangible assets). The competitor's new product must be likely to reduce the future sales revenues of Tournose, suggesting an impairment of the development costs.

The development costs should currently have a book value of \$2.8m ($14/20 \times \$4m$) which represents 5.2% of total assets, which is material. If this balance were to be fully written off due to impairment it would reduce profits by 21.21 % which is clearly material. Any write-off of at least \$0.66m (being 5% of profit) would probably be considered material.

A full impairment review should have been carried out by management in response to this situation.

(ii) Evidence

- A copy of the press announcement to confirm the information, including the date was pre-year-end (although it could be argued that the date of the announcement is irrelevant – the competitor was clearly developing this for some time so Tournose was impaired, even though Seymour did not know it).
- A written management representation confirming the board's belief that any sales forecasts for Tournose are reasonable, given recent events.
- A comparison of the latest sales forecasts with those that existed before the press announcement, to confirm that downward adjustments have been made.
- A copy of the accounting policies note in the financial statements to verify that any change in useful life has been adjusted in the disclosure.

(b)

(i) Matters

Aragon appears to require the financial support of Seymour to be considered a going concern. Whilst this is common within groups, it adds to the risk that the subsidiary is not a going concern, because a parent could choose to close it down at very short notice, especially as it has made losses for the last 2 years.

The subsidiary represents 9.1% of the group's assets and is therefore material. However, if it were to be closed down, it would seem likely that the parent would be able to take ownership of any assets that retained a value, so the damage to the group would not seem to be that great.

The goodwill should be subject to annual impairment reviews in line with IFRS 3. Given the losses were happening last year as well, there may be a risk that the goodwill was overstated last year as well, giving rise to a potential prior period adjustment to correct the error.

The goodwill represents 3.4% of the assets of the group. The losses suggest that this goodwill may have been impaired.

Any impairment exceeding \$0.66m (being 5% of profit) may be considered material. With losses totalling \$1.1m over the last 2 years, and assuming the subsidiary was expected to at least breakeven, the loss in value is likely to be well in excess of \$0.66m.

The investment in Seymour's parent company accounts is also a material balance and should also have been reviewed for impairment, as it may require writing down.

The parent may have guaranteed Aragon's borrowings, or contracts with suppliers, customers etc. If there is any probability/possibility of Aragon being wound up, Seymour may need to provide for these/disclose them as contingent liabilities (IAS 37).

(ii) Evidence

- The financial statements of Aragon for current and prior year to confirm the figures given for losses and assets are correct.
- A "comfort letter" from the board of Seymour to confirm that it is their intention to continue financial support for Aragon for at least 12 months from the date that Aragon's financial statements are signed off.
- A copy of the most recent impairment review, which should confirm the reasonableness of assumptions made, discount factor used etc.
- A copy of last year's impairment review to assess whether last year's financial statements may require restating.
- Analysis of Seymour's board minutes for evidence of any discussion involving closing Aragon down.

(c)

(i) Matters

The announcement is an event after the reporting period (or post balance sheet event). Given the business is being closed after the year-end, it does not qualify as a discontinued operation under IFRS 5 and as such its results should not be separately disclosed as "discontinued" on the face of the Income Statement.

The revenue from this division represents in excess of 10% of revenues for the group so is clearly a material part of the business. As such, the closure should be disclosed as a material non-adjusting event.

The product recall is likely to create a high number of claims against the company, and if these sales were made before the year-end then a provision for the cost of compensation is likely to be necessary.

Any returned inventory may be of questionable value, and is at risk of overstatement.

(ii) Evidence

- A copy of the announcement to confirm that it took place, and the date being post year-end.
- An analysis of customer correspondence files to assess the potential level of returns and to evaluate the provision needed in the financial statements.
- A written management representation to confirm their opinion that for any such claims provision and the value of inventory, these are fairly stated in the financial statements.
- Revenue analysis to confirm the quantity of products involved in the recall.
- Written confirmation from the company's legal department of the value of any claims received so far.

Tutorial help and key points

This question is typical of audit report questions, with the technical knowledge in **(a)** linked to the story in **(b)**.

In criticising the audit report, look for lack of clarity, inconsistent statements, use of inappropriate wording, lack of detail, and of course question the opinion itself. This is not an easy exercise, and you need to pick out the separate storylines from the report and analyse them separately to maximise your marks.

Marking scheme

For **part (a)** of the question, 1 mark for each sensible, relevant point made; but with only ½ mark if points are correct but lack clarity or detail.

For **part (b)**, up to 1.5 marks per sensible comment, as it is much harder.

(a) Going concern – auditor responsibility

It is the responsibility of a company's directors to assess whether their company is a going concern, and to present the financial statements on the correct basis, including appropriate disclosures of significant threats as necessary.

As with **all** accounting issues, the auditor's job is to gather evidence in order to assess whether the basis of preparation is appropriate, and to consider that all necessary disclosures included in the financial statements are sufficient for shareholders to understand the position of the company.

Whilst the auditor makes no direct statement that in their opinion the company is a going concern, if they state that the financial statements are true and fair, they were prepared under a going concern basis with no threats disclosed, they are indirectly agreeing with the directors that the company is a going concern.

Audit evidence collected is likely to centre on an assessments of the company's forecasts, an analysis of the company's finances, ability to raise new money and the state of their industry etc.

Reports

If going concern threats are significant and are not fully disclosed in a note to the financial statements, a qualified opinion on grounds of material misstatement will be required (formerly known as a disagreement).

If the threats are properly disclosed, the audit opinion will be unqualified but an emphasis of matter paragraph, which will be added to the end of the report, referring shareholders to the relevant disclosure note in the financial statements where the threats are disclosed.

If the threats are so significant that the auditor disagrees with the directors' view that the company is a going concern, the audit opinion is likely to be adverse, stating that the financial statements "do not give a true and fair view".

If there are multiple uncertainties threatening the company's future, a disclaimer of opinion may be required stating that the auditors "cannot form an opinion".

(b) Weaknesses

The audit report is extremely late, being around 17 months after the year end. Given the state that the company is in, it is hardly helpful or of any real use to report to the shareholders this late, although it is not known whether the delay is any fault of the auditors.

Lack of sufficient evidence

There appears to have been a lack of evidence in the previous year, although this has only been discovered during the current year. This must raise questions about whether last year's audit opinion can now be considered reliable, but no mention of this issue is included in the audit report.

The explanation of the lack of evidence is very short on detail, with no mention of what the missing transactions were, no context of their relative size, or why they were not included in the prior year.

The explanation is also included in the middle of the "responsibility" section where it would easily get overlooked, which is far from helpful to shareholders.

If the correct adjustments have indeed been made (as noted in note 22), presumably as a prior period adjustment, and these have been fully explained in the note, then the financial statements are now free from material misstatement, there is no lack of evidence, and there is no obvious reason to mention the issue in the audit report at all.

Opinion

The opinion makes it clear that there is no material misstatement in the financial statements, yet the opinion section then goes on to mention more information suggesting a major problem. This lack of clarity is likely to confuse the shareholders.

If liabilities exceed assets the company is technically insolvent, suggesting it is not a going concern – yet the audit opinion says the financial statements are true and fair, which appears to be a contradiction.

The use of the words "adverse situation" may cause confusion as the word "adverse" is associated with an audit opinion where the financial statements do NOT give a true and fair view.

The opinion is meant to be that of the auditors – yet the opinion we are given is that the DIRECTORS believe the company will survive. What the auditors think is therefore extremely unclear and is not complying with the Companies Act's requirements.

It is hard to tell whether this report is trying to give an adverse opinion on going concern grounds, or whether this extra paragraph at the end of the opinion is an attempt at an emphasis of matter paragraph – but if it is the latter, it should be clearly separated with a separate heading, and should refer to the disclosure note in the financial statements where this going concern problem is discussed in more detail.

The fact that director opinions are being given in the audit report implies that there is no disclosure note in the financial statements. If this is true, the opinion should either be qualified due to lack of disclosure, or an adverse opinion should be provided if the auditors do not agree with the going concern presumption.