Diploma in Financial Management

PAPER DB1, INCORPORATING SUBJECT AREAS
– FINANCIAL STRATEGY
– RISK MANAGEMENT

TUESDAY 2 DECEMBER 2003

QUESTION PAPER

Time allowed **3 hours**

This paper is divided into three sections

Section A	ALL 20 questions are compulsory and MUST be answered
Section B and Section C	THREE questions in total to be answered. Candidates MUST answer ONE question from Section B, ONE question from Section C and ONE further question from either Section B or Section C.

Present Value Rates are on page 2.

Module B

The net present value of £1 receivable at the end of n years at 10 per cent

n	10%
0	1·00
1	0·91
2	0·83
3	0·75
4	0·68
5	0·62

Section A – All 20 questions are compulsory and MUST be attempted.

Each question within this section is worth 2 marks.

Please use the Candidate Registration Sheet provided to indicate your chosen answer to each multiple choice question.

1 Calcite Ltd used the NPV and IRR methods of investment appraisal to evaluate a project that has an initial cash outlay followed by annual net cash inflows over its life. After the evaluation had been undertaken, it was discovered that the cost of capital had been incorrectly calculated and that the correct cost of capital figure was in fact higher than that used.

What will be the effect on the NPV and IRR figures of correcting for this error?

	Effect on	
	NPV	IRR
A	Decrease	Decrease
B	Decrease	No change
C	Increase	Increase
D	Increase	No Change

2 A business evaluates an investment project that has an initial outlay followed by annual net cash inflows of £10 million throughout its infinite life. The evaluation of the inflows produced a present value of £50 million and a profitability (present value) index of 2·0.

What is the internal rate of return and initial outlay of this project?

	IRR	Initial outlay
	%	£m
A	20	25
B	20	100
C	40	25
D	10	100

3 Quartz plc pays an annual dividend of 30 pence per share to shareholders, which is expected to continue in perpetuity. The average rate of return for the market is 9% and the company has a beta coefficient of 1·5. The risk-free rate of return is 4%.

What is the expected rate of return for the shareholders of the company and the predicted value of the shares in the company?

	Expected rate of return (%)	Predicted value (pence)
A	23·5	705
B	17·5	171
C	16·5	182
D	11·5	261

4 Agate plc is a company that is listed on the London Stock Exchange. It intends to announce immediately a one-for-four rights issue at an issue price of £5·00. The current share price of the company is £8·00.

What will be the theoretical value of the rights attached to each original share?

A £2·40
B £1·85
C £0·75
D £0·60

5 Chrysotile plc has ordinary shares with a par value of £0·50 in issue. The company generated earnings per share of 45p for the financial year that has just ended. The dividend cover ratio is 2·5 times and the gross dividend yield is 2% (Ignore taxation).

What is the price/earnings ratio of the company?

A 2·8 times
B 5·0 times
C 20·0 times
D 40·0 times

6 Different types of efficiency can be identified in the operation of capital markets.

To which particular type of efficiency does the terms 'weak form', 'semi-strong form' and 'strong form' apply?

A Allocative efficiency
B Operational efficiency
C Information processing efficiency
D Economic efficiency

7 The validity of using the existing weighted average cost of capital as the appropriate discount rate for deducing the net present value of a project rests on a number of key assumptions. These include the following:

1. The investment project has the same level of risk as those projects normally undertaken by the business.
2. The investment project is small in relation to the size of the business.

Which one of the following combinations (true/false) concerning the above statements is correct?

	Statement 1	Statement 2
A	True	True
B	True	False
C	False	True
D	False	False

8 Tourmaline Ltd pays its major credit supplier 40 days after receiving the goods and receives no settlement discount. The supplier has recently offered the company revised credit terms of 3/10, net 40. (i.e. 3% discount allowed if payment is made within 10 days, otherwise payment in full within 40 days).

If Tourmaline Ltd refuses the settlement discount and pays in full after 40 days, what is the approximate, implied, interest cost that is incurred by the company per year?

A 10·3%
B 27·4%
C 28·2%
D 37·6%

9 Gypsum plc has 20 million £0·25 ordinary shares in issue. The company has a market capitalisation of £60 million and has reported post-tax profits of £15 million for the year that has just ended. The company expects profits to rise by 20% and the dividend payout ratio is expected to be 30% in the forthcoming year. The company is committed to increasing the dividend by 4% per annum for the foreseeable future.

Which one of the following is the expected rate of return from the ordinary shares?

A 4·1%
B 11·5%
C 13·0%
D 15·1%

10 Opal Ltd has 2 million £0·50 ordinary shares in issue. The company achieved the following results for the year that has just ended:

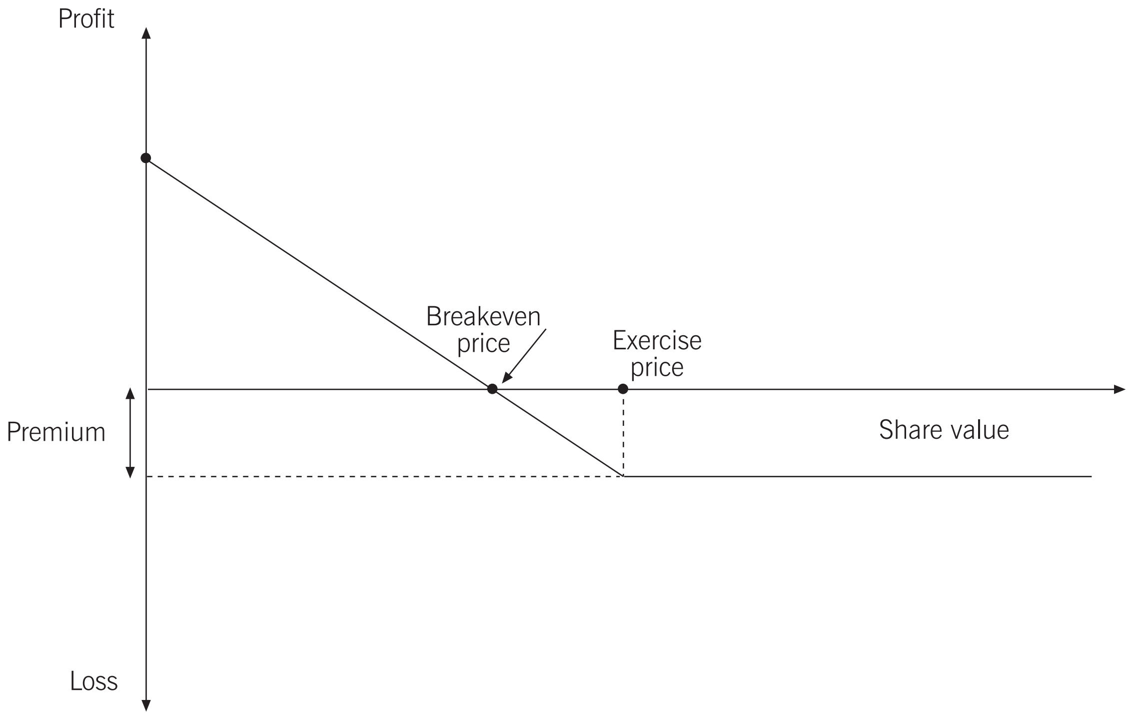
	£000
Operating profit	440
Interest payable	120
	320
Corporation tax	80
	240
Dividend payable	100
	140

Kyanite plc, which operates within the same industry as Opal Ltd, has £1·00 ordinary shares in issue that have a current market price of £9·00. It has recently announced a dividend per share of £0·30. Kyanite plc maintains a constant dividend payout ratio of 40%.

What is the value of each ordinary share of Opal Ltd on the basis of Kyanite plc's price/earnings ratio?

A £0·84
B £1·44
C £1·92
D £9·00

11 Consider the following graph:



Which one of the following positions is represented by the graph?

A Long call position
B Short call position
C Long put position
D Short put position

12 Galanthus plc is a recently listed company that is financed entirely by equity shares. The directors of the company wish to establish the likely beta value of the equity shares and wish to use data from Hesperis plc, a similar listed company within the same industry, to do this. Hesperis plc has an equity beta of 1·2 and is financed by 60% equity shares and 40% loan capital. The loan capital of the company can be regarded as risk-free and the rate of corporation tax is 20%.

What is the estimated equity beta for Galanthus plc, based on the information above?

A 0·52
B 0·78
C 0·82
D 0·90

13 Mentha plc is financed entirely by equity and has a cost of capital of 10%. Picea plc has the same operating and risk characteristics as Mentha plc but is financed by 30% loan capital and 70% equity. The cost of the loan capital, which is risk free, is 4%. The rate of corporation tax is 20%.

Using MM theory (including taxation), what is the cost of equity capital of Picea plc?

A 10·57%
B 11·44%
C 12·06%
D 21·20%

14 Consider the following statements concerning currency risk:

1. Leading and lagging is a method of hedging transaction exposure.
2. Matching receipts and payments is a method of hedging translation exposure.

Which of the above statements is/are true?

	Statement 1	Statement 2
A	True	True
B	True	False
C	False	True
D	False	False

15 Typha plc, a UK business, has recently sold goods to a US customer and expects to be paid \$300,000 in three months' time. Typha plc enters into a forward exchange contract to sell \$300,000 in three months' time to protect against foreign exchange risk. Exchange rates are:

£/\$ spot	1·4505–1·4545
3-months forward	\$0·0025–0·0020 pm

What is the sterling amount that will be received by the company in three months' time (to the nearest £)?

A £205,973
B £206,540
C £206,612
D £207,182

16 The Combined Code states that each listed company should provide, within its annual report and accounts, a corporate governance report that includes:

1. A brief report of the remuneration committee and its composition.
2. A statement on relations and dialogue with investors.

Which of the following combinations is correct with regard to the above statements?

	Statement 1	Statement 2
A	True	True
B	True	False
C	False	True
D	False	False

17 Taxus plc takes out a borrower's option on a loan for £10 million that has a notional interest period of 92 days. The business can borrow over this period at LIBOR plus 0·2%. The option has a strike rate of 5·5% and a premium of £10,000.

What is the total borrowing cost for the business if LIBOR is 5·0% at the expiry date of the option?

A 5·3%
B 5·6%
C 5·8%
D 6·1%

18 Nicandra plc, a company that is committed to increasing shareholder wealth, holds the following European-style options at their expiry date:

1. A call option on a notional loan that gives the right to borrow £5 million for one year at a strike rate of 5·0%. LIBOR is 4·5% at the expiry date of the option.
2. A put option on £500,000 in exchange for euros at an exchange rate of £1 = €1·5342. The exchange rate is £1 = €1·5154 at the expiry date of the option.
3. A call option on 10,000 shares in Potentilla plc at an exercise price of 840p. The current share price is 820p at the expiry date of the option.

Which of the above options should be exercised and which should be allowed to lapse at their expiry date?

		Option	
	1	2	3
A	Lapse	Exercise	Exercise
B	Lapse	Lapse	Exercise
C	Exercise	Exercise	Lapse
D	Lapse	Exercise	Lapse

19 Mazus plc has an outstanding loan for £15 million with a floating rate of interest of LIBOR + 1·0%, which is payable annually. The company wishes to protect itself against possible fluctuations in interest rates and so, for the next interest period, the company has taken a LIBOR cap at 6% per year for a premium of 0·5% per year. In addition, it has arranged to sell a LIBOR floor at 4·5% interest per year for a premium of 0·2% per year.

If the LIBOR rate is 7·6% for the next interest period, what will be the effective interest rate paid by Mazus plc?

A 5·8%
B 7·3%
C 7·5%
D 8·9%

20 Consider the following statements concerning forward rate agreements (FRAs):

1. FRAs cannot be tailored to the specific requirements of a customer.
2. FRAs are binding agreements that must be settled at the settlement date.
3. FRAs do not require any payments or receipts until the settlement date.
4. FRAs can be resold in the secondary market.

Which of the above statements are correct?

A 1 and 2
B 1, 2 and 4
C 2 and 3
D 2, 3 and 4

(40 marks)

Section B – Candidates MUST attempt ONE question from Section B, ONE question from Section C and ONE further question from either Section B or Section C.

1 Galena plc owns an open-cast coal mine in Wales that was purchased from the UK government in 1992. In recent years, the performance of the mine has been badly affected by a decline in demand for coal and also by cheap imports. Mining engineers employed by the company believe that the mine could be operated for another four years before coal supplies finally run out. If the mine is operated during this period, the following financial results are expected:

Year	1	2	3	4
	£m	£m	£m	£m
Operating profit (loss)	54	(46)	(15)	22
Interest payable	(11)	(11)	(11)	(11)
Net profit (loss) for the year	43	(57)	(26)	11

The following additional information is available:

(i) The machinery and equipment at the mine cost £18·0 million and have a written down value of £8·0 million. The machinery and equipment will be sold at the end of the four-year period for an estimated £2·0 million.

(ii) A depreciation charge for the machinery and equipment of £1·5 million per year and an amortisation charge for depletion of the mine of £4·0 million per year are included in the above calculations.

(iii) The working capital tied up in the mine is £3·6 million and this can be liquidated immediately the company discontinues its operations.

(iv) Redundancy payments to employees will amount to £2·2 million if the company operates the mine for a further four years and employees are released at the end of this period.

(v) The company has agreed with the UK government to fill in the mine and build a community centre in the area in five years' time. This is estimated to cost £2·5 million and this commitment will not be affected by any decisions concerning the future of the mine.

The company has been approached by a miners' co-operative, consisting of employees of the mine. The co-operative has offered to lease the mine for the remaining four years of its life at a lease rental of £6·0 million per year, payable at the end of each year. The co-operative has also offered to buy the existing machinery and equipment from the company for £5·0 million immediately if a lease agreement can be reached. It has also offered to make a contribution of £1·5 million towards the cost of building the community centre in five years' time. No other parties have declared an interest in taking over the mining operations. If the company agrees to lease the mine, and thereby discontinue operations, it will have to make redundancy payments of £3·4 million immediately.

Galena plc has a cost of capital of 10%.

Ignore taxation.

Required:

(a) Calculate the incremental cash flows arising from a decision to continue operations for a further four years rather than to lease the mine to the miners' co-operative. (12 marks)

(b) Calculate the net present value of continuing operations for a further four years rather than leasing the mine to the miners' co-operative. (3 marks)

(c) State whether or not the company should continue to operate the mine. You should clearly state your reasons and any key assumptions that you have made in arriving at your decision. (5 marks)

(20 marks)

2 Olivine plc is a holiday tour operator that is committed to a policy of expansion. The company has enjoyed record growth in recent years and is now seeking to acquire other companies in order to maintain its growth momentum. It has recently taken an interest in Halite plc, a charter airline business, as the Board of Directors of Olivine plc believes that there is a good strategic fit between the two companies. Both companies have the same level of risk.

Abbreviated financial statements relating to each company are set out below.

Abbreviated profit and loss account for the year ended 30 November 2003

	Olivine plc	Halite plc
	£m	£m
Sales	182·6	75·2
Operating profit	43·6	21·4
Interest charges	12·3	10·2
Net profit before taxation	31·3	11·2
Corporation tax	6·3	1·6
Net profit after taxation	25·0	9·6
Dividends	6·0	4·0
Retained profits for the year	19·0	5·6

Balance sheets as at 30 November 2003

	Olivine plc	Halite plc
	£m	£m
Fixed assets	135·4	127·2
Net current assets	65·2	3·2
	200·6	130·4
Creditors due after more than one year	120·5	104·8
	80·1	25·6
Capital and reserves		
£0·50 ordinary shares	20·0	8·0
Retained profit	60·1	17·6
	80·1	25·6
Price/earnings ratio before the bid	20	15

The Board of Directors of Olivine plc is considering making an offer to the shareholders of Halite plc of five shares in Olivine plc for every four shares held. It is believed that a rationalisation of administrative functions arising from the merger would reap after tax benefits of £2·4m.

Required:

(a) Calculate:

(i) the total value of the proposed offer;
(ii) the earnings per share of Olivine plc following the successful acquisition of Halite plc;
(iii) the share price of Olivine plc following acquisition, assuming that the benefits of the acquisition are achieved and that the price/earnings ratio declines by 5%. (10 marks)

(b) Calculate the effect of the proposed takeover on the wealth of the shareholders of each company. (5 marks)

(c) Comment on your results in (a) and (b) above and state what recommendations, if any, you would make to the directors of Olivine plc. (5 marks)

(20 marks)

3 Fluorspar plc manufactures motor parts for a range of leading motor-car companies. It has recently appointed a new Finance Director who has concluded that the business does not exert sufficient control over its stocks. Within the first few weeks of taking up the new job, she found evidence of both overstocking and understocking of many items. She has decided to bring the matter to the attention of the Board of Directors as she believes that they are not fully aware of the cost of these stock control problems. She believes that the longer term solution to these problems is to adopt a just-in-time approach for many items. However, in the short term she has started to implement stock management models to help minimise costs.

As a starting point, the company has implemented the Economic Order Quantity model to the management of its stock of exhaust pipes. Although this has already proved beneficial, the business has now received an offer from a supplier of one particular type of exhaust pipe. The supplier has offered Fluorspar plc a discount of 2·5% on the cost of each exhaust pipe for order sizes of 200 or more and a discount of 4% for order sizes of 400 or more. Each exhaust pipe costs £60 to purchase and the cost of holding one exhaust pipe in stock is estimated at £80 per year. The ordering cost is £50 and the annual sales demand is 8,000 exhaust pipes, which accrues evenly over the year.

Required:

(a) Identify and discuss the types of cost that may be incurred by the business when holding:

(i) too much stock; and
(ii) too little stock;

and state whether these costs are likely to be captured by traditional financial reporting systems. (6 marks)

(b) Discuss the arguments for and against the implementation of a just-in-time approach to stock management as a solution to the problems of the business. (6 marks)

(c) Calculate the appropriate order size for the exhaust pipes that will minimise the total annual costs associated with the purchase of this item. (8 marks)

(20 marks)

Section C – Candidates MUST attempt ONE question from Section B, ONE question from Section C and ONE further question from either Section B or Section C.

4 Malva plc is a large manufacturer of motor vehicle components. In recent years, the business has embarked on a policy of expansion and now requires additional loan capital of £100 million, over a ten-year period, in order to build and equip a new factory. The financing policy of the company is to borrow at both fixed and floating rates of interest and to use interest rate swaps to obtain the required interest rate profile. The company enjoys a good credit rating and can raise fixed rate loan capital at 6·0% and floating rate loan capital at LIBOR plus 0·5% from its bank.

Malva plc wishes to raise long-term, floating rate finance and is considering a ten-year swap arrangement to help achieve this. A swap bank has been approached and the bank has identified another company, Genista plc, as a potential counterparty to the agreement. Genista plc is a large chemical company that has a reasonable credit rating. It can raise fixed interest loan capital at 7·8% and floating rate loan capital at LIBOR plus 1·2% from its bank. The swap bank is prepared to arrange the swap agreement and to act as guarantor for both parties for a total fee of 0·2%. The two parties to the agreement will pay to, or receive from, the swap bank a fixed amount and will receive, or pay, LIBOR in return.

The Finance Director of Malva plc is prepared to undertake the swap arrangement providing that it will lead to annual savings of at least 0·4% and the Finance Director of Genista plc is prepared to undertake the swap agreement providing it will lead to savings of at least 0·5%.

LIBOR is 6·2%.

Required:

(a) Show, with calculations, how a swap arrangement can be devised that will meet the requirements of both companies. (4 marks)

(b) Provide an analysis of the interest cost payments and receipts of Malva plc and Genista plc in the first year assuming the swap arrangement goes ahead. (6 marks)

(c) Evaluate the swap arrangement from the perspective of each company if LIBOR increased by 1·4% at the beginning of the second year of the agreement and stayed at this higher rate for the remainder of the swap period. (4 marks)

(d) Briefly discuss the advantages and disadvantages of interest rate swaps. (6 marks)

(20 marks)

5 Dryas plc operates in a mature, low-risk industry and has had a stable level of profits for many years. Profits after tax for the current year were £120 million and this level of profit is expected to continue in the future providing the current dividend/retention policy is maintained. The company adopts a dividend policy based on a dividend payout ratio of 80% and it has just paid a dividend for the year that has recently ended. However, a newly-appointed Chief Executive is considering three new investment strategies. Whilst these strategies will have the same initial investment, they will require different levels of future investment but will lead to different future growth rates.

The Board of Directors has agreed that if any one of the three new strategies is decided upon the future investment required will be financed entirely from retained earnings rather than any new issue of equity. This will entail a reduction in future dividends. Alternatively, the business can continue its current strategy of high dividend and no growth.

The Board has arranged to meet again in the near future to decide whether to support one of the proposed strategies or whether to continue with the existing strategy of high dividend payments and no growth. The following figures, which relate to the proposed strategies, will be presented to the Board at this meeting:

Strategy	Dividend payout ratio	Growth rate in profits	Required return by shareholders
	%	%	%
1	10	8	12
2	30	5	10
3	60	3	9

The cost of ordinary share capital for the company is currently 8·0%.

Required:

(a) State, with supporting calculations, what recommendation you would make concerning the proposed strategies. (9 marks)

(b) Explain why the proposed change in dividend policy is likely to be regarded as important by shareholders. (7 marks)

(c) Briefly explain why a company may prefer to fund investment projects by the use of retained profits rather than by the issue of new equity shares. (4 marks)

(20 marks)

6 Nerium Engineering plc is a recently-listed company that has just appointed a new, non-executive director to its main board of directors. At the first board meeting that the non-executive director attended, he was asked to become a member of the audit committee. This committee has only just been established and its terms of reference have yet to be finally agreed. The non-executive director is unsure what such a role might involve and, as a qualified engineer without a detailed understanding of finance, he is also unsure as to whether he is the right person for such a committee. He has, therefore, written to you for advice.

Required:

Write a report to the non-executive director setting out the possible role and responsibilities of the audit committee and the main qualities that a member of such a committee should possess.

(20 marks)

End of Question Paper