Diploma in Financial Management

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

TUESDAY 3 JUNE 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

Present value of £1 receivable in n years at x%

n \ x	16%	15%	14%	13%	12%	10%	7%
0	1·00	1·00	1·00	1·00	1·00	1·00	1·00
1	0·86	0·87	0·88	0·89	0·89	0·91	0·94
2	0·74	0·76	0·77	0·78	0·80	0·83	0·87
3	0·64	0·66	0·68	0·69	0·71	0·75	0·79
4	0·56	0·57	0·59	0·61	0·64	0·68	0·74

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 Fulmar plc is currently considering three investment opportunities. Details of each opportunity are given below:

	Investment opportunity		
	Alpha	Beta	Gamma
	£m	£m	£m
Initial outlay	80	140	90
Future net inflows – Year 1	190	180	10
– Year 2	10	120	220

The company has a capital budget that is restricted in the year of the investment and it will not be possible to undertake all three projects in full. The investment opportunities are independent of one another and each project is divisible (that is, it is possible to undertake part of an investment and to receive a pro rata return). The cost of capital of the company is 12 per cent and the company uses the net present value method of investment appraisal.

Which of the following is the correct ranking of the three investment opportunities?

	Ranking		
	1	2	3
A	Alpha	Gamma	Beta
B	Beta	Gamma	Alpha
C	Beta	Alpha	Gamma
D	Gamma	Alpha	Beta

2 Dunlin plc is examining an investment opportunity that will lead to savings in staff costs. The company uses the net present value method of investment appraisal based on cash flows expressed in real terms. Staff costs are expected to rise at a rate of 5% each year, whereas the general rate of inflation is expected to rise at a rate of 3% each year. The company has a required rate of return of 10%, assuming no inflation.

What is the appropriate discount rate to use when evaluating the investment opportunity?

A 10%
B 13%
C 13·3%
D 15·5%.

3 Mallard plc issues loan capital with a par value of £100 million at a price of £90 per £100 nominal value. The annual interest rate is 10% of the nominal capital. The loan capital will be redeemed in two years' time at its nominal value. The effective rate of corporation tax for the business is 30% and tax relief arises in the same year as the interest payment.

What is the net cost of the loan capital (to the nearest per cent) to the business?

A 7%
B 10%
C 13%
D 16%.

4 **Which one of the following statements is correct?**

A A stock market that is efficient in the semi-strong form cannot be efficient in the weak form

B A stock market that is efficient has share price movements occurring on a random basis

C A stock market that is efficient in the strong form is one in which investors cannot make any profit

D A stock market that is efficient will have regular, recurring patterns of share price movements.

5 Gannet Ltd is a private company that has ordinary shares in issue with a par value of £0·50 each. The company has recently paid a dividend of £0·15 per share. Tern plc is listed on the London Stock Exchange and operates in the same industry as Gannet Ltd. Tern plc has ordinary shares in issue with a par value of £1·00 and a current market value of £3·00. The company has recently paid a dividend of £0·27 per share. The rate of income tax on dividends is 10%.

Which one of the following is the value of each ordinary share in Gannet Ltd on a dividend yield basis?

A £0·56
B £1·50
C £1·67
D £1·85.

6 Sanderling Ltd buys raw materials from suppliers on six weeks' credit, which are delivered immediately. The raw materials are held in stock for four weeks before being issued to production. The production process takes three weeks and the finished goods are held in stock for two weeks before being sold on credit. Customers are allowed eight weeks' credit and pay promptly at the end of the period.

What is the length of the operating cash cycle of the business?

A 9 weeks
B 11 weeks
C 17 weeks
D 23 weeks.

7 **A share that has a beta of 1·0 will have which one of the following properties?**

A An expected return that is equal to the risk-free rate
B An expected return that is equal to the expected returns from the market
C An expected return that is above the expected returns from the market
D No non-diversifiable risk.

8 Starling Ltd wishes to forecast its financial performance and position for the forthcoming year. The forecast model used by the company incorporates the following relationships:

Sales: long-term capital employed	2:1
Debt: equity ratio	1:4
Sales: operating profit	10:1
Corporation tax: net profit before taxation	0·2:1

The sales for the forthcoming year are expected to be £6 million and the interest payments for the period are expected to be £100,000.

What is the forecast return on ordinary shareholder's funds for the period?

A 16·7%
B 20·0%
C 25·0%
D 66·7%.

9 Consider the following two statements:

1. Invoice discounting requires the discounter to take responsibility for collecting all the trade debts outstanding.
2. An operating lease agreement transfers most of the risks and rewards associated with the leased asset to the lessee.

Which one of the following combinations relating to the above statements is correct?

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

10 Teal plc has a market capitalisation of £30 million and forecast post-tax profits for the forthcoming year of £10 million. The company has an issued share capital of £1 million, which is made up of £0·50 ordinary shares. The policy of Teal plc is to maintain a constant dividend cover of 2·5 times. Dividends are expected to increase by 5% per annum for the foreseeable future.

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

A 8·3%
B 18·3%
C 21·7%
D 31·7%.

11 The Modigliani and Miller (no taxes) proposition concerning capital gearing states that, as the level of capital gearing increases from zero:

A the cost of equity capital will remain unchanged
B the weighted average cost of capital will decrease
C the value of the business will remain unchanged
D the cost of loan capital will increase.

12 Meryton plc issued 10% loan stock some years ago, which is redeemable at par in exactly one year's time. The interest rate offered by the company is 3 percentage points higher than the interest rate offered on one-year government bonds. A credit-rating agency now estimates that there is a 5% probability that the company would default on its payments and that lenders would receive nothing in one year's time. The market price of the loan stock reflects this default risk. An investor purchases some loan stock.

Ignoring tax, what is the actual achieved yield on the loan stock over the year to redemption if there is no default on payments?

A 8·88%
B 11·22%
C 12·64%
D 15·79%.

13 Uppercross plc has borrowed £10 million with interest payable yearly at a floating rate of interest of LIBOR + 1·2%. The company is concerned about recent fluctuations in interest rates and so has decided to hedge the interest rate for the next interest period. The company has agreed to take a LIBOR cap at 8% per year for a premium of 1% per year. In addition, it has arranged to sell a LIBOR floor at 5% interest per year for a premium of 0·8% per year.

Assuming the LIBOR rate is 4·5% for the next interest period, what will be the effective interest rate paid by the company?

A 5·9%
B 6·4%
C 6·5%
D 7·0%.

14 Pemberley plc pays a constant dividend of 25 pence per ordinary share and the ordinary shares of the company have a beta of 1·2. The risk-free rate of return is 4% and the current market rate of return is 11%.

What is the predicted market value of each of the company's shares?

A 49·6 pence
B 189·4 pence
C 201·6 pence
D 297·6 pence.

15 Netherfield plc purchases a borrower's option for six-month LIBOR on a notional principal sum of £10 million. The strike rate is 5·4% and the LIBOR rate is 6·5% at the expiry date of the option. The notional six-month interest period is 183 days.

Assuming the option is exercised, what is the cash flow relating to the option (to the nearest £)?

A £53,410
B £53,697
C £262,195
D £317,300.

16 Consider the following statements concerning the principles of corporate governance contained within the Combined Code.

1. Non-executive directors should comprise at least one quarter of the total board membership.
2. All directors should submit themselves for re-election at least every two years.

Which one of the following combinations relating to the above statements is correct?

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

17 Lucas Lodge Hotels plc wishes to borrow £20 million for four years at a fixed rate of interest and Hunsford plc wishes to borrow £20 million for four years at a floating rate of interest. Each company can borrow the required amount as follows:

	Floating rate	**Fixed rate**
Lucas Lodge Hotels plc	LIBOR plus 60 basis points	6·8%
Hunsford plc	LIBOR plus 120 basis points	7·0%

Assuming the companies agree to an interest rate swap and any benefits are shared equally, what will be the annual net interest cost for Lucas Lodge Hotels plc?

A 6·4%
B 6·5%
C 6·6%
D 6·7%.

18 An investor has a European-style put option on the shares of Ashworth plc at an exercise price of 520 pence. The current market value of the put is 40 pence and the share has a current market value of 490 pence. The expiry date of the option is in three months' time and the present value of the exercise price is estimated to be 500 pence .

What will be the value of a call option on shares in Ashworth plc for the same expiry date and exercise price?

A 10 pence
B 30 pence
C 50 pence
D 70 pence.

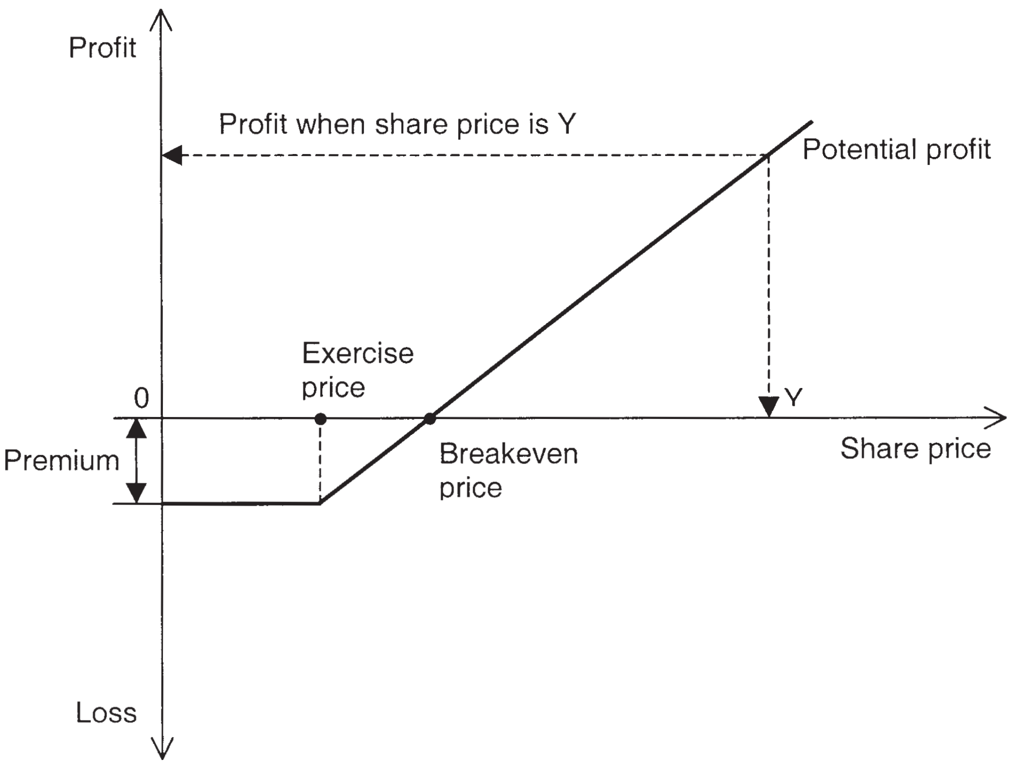
19 Gracechurch plc is a UK business that imports cheese from France. The business is due to pay one of its suppliers €2,125,000 in 30 days and the treasurer is concerned that, in the intervening period, the euro will strengthen against the £ sterling. The current spot rate of €/£ is 0·6179 and euros futures contracts are trading at €/£ 0·6192.

To hedge against a possible strengthening of the euro, the treasurer decides to purchase 17 futures contracts at €125,000 each and to sell them in 30 days' time.

Assuming that at the end of the 30-day period, the spot rate €/£ is 0·6220 and the futures price is €/£ 0·6260, what is the hedge efficiency of the above transactions (to the nearest per cent)?

A 60%
B 84%
C 119%
D 166%.

20 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.

(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 Brambling (Electronics) Ltd is a research-led business that specialises in the development of surveillance equipment. The company has recently developed a new form of camera with a powerful fibre-optic lens and is currently considering whether or not to produce the camera. The Board of Directors will soon meet to make a final decision and has the following information available to help it decide:

(i) The cost of developing the camera has been £1,400,000 to date and the company is committed to spending a further £350,000 within the next two months.

(ii) The company has spare production capacity and can produce the camera using machinery that will cost £4,700,000 and which will be purchased immediately. It is expected to be sold at the end of four years for £800,000.

(iii) Total fixed costs identified with the production of the camera are £1,725,000 per year. This includes a depreciation charge in respect of the machinery of £975,000 per year and a charge allocated to represent a fair share of the fixed costs of the business as a whole of £250,000 per year.

(iv) The cameras are expected to sell for £10,000 each and the marketing department believes that the business can sell 800 cameras per year over the next four years.

(v) The variable costs of production are £7,000 per camera.

(vi) If the business decides not to produce the camera it can sell the patents immediately for £1,300,000.

The company has a cost of capital of 12%.

Ignore taxation.

Required:

(a) Calculate the net present value of producing and selling the new camera versus the alternative of selling the patent. (6 marks)

(b) Carry out a separate sensitivity analysis to show by how much the following factors would have to change before the proposal to produce and sell the new camera has an NPV of zero:

(i) the initial outlay on the machinery;

(ii) the discount rate;

(iii) the residual value of the machinery;

(iv) the annual net operating cash flows. (11 marks)

(c) Briefly evaluate your findings in (a) and (b) above. (3 marks)

(20 marks)

2 Grebe Ltd operates a chain of cellular telephone stores in the UK. An abbreviated profit and loss account and balance sheet of the business for the year that has just ended is as follows:

Abbreviated profit and loss account for the year ended 31 May 2003

	£000
Sales	6,450
Operating profit for the year	800
Debenture interest payable	160
Net profit before taxation	640
Corporation tax (20%)	128
Net profit after taxation	512
Dividends proposed	256
Retained profit for the year	256

Abbreviated balance sheet as at 31 May 2003

	£000	£000
Fixed assets at written down values		3,500
Current assets	1,800	
Less Creditors: amounts falling due within one year	1,100	700
		4,200
Less Creditors: amounts falling due after more than one year		2,000
		2,200
Capital and reserves		
£0·50 Ordinary shares		600
Retained profit		1,600
		2,200

The company is expecting a surge in sales following advances in cellular telephone technology that should translate into additional operating profits of £180,000 per year for the foreseeable future. However, the company will need to invest £1,200,000 immediately in expanding the asset base of the business if it is to achieve these additional profits.

The business has approached a large supplier that already has an equity investment in the business to see whether it would be prepared to provide further funds for the business. The supplier has indicated it would be willing to provide the necessary funds by either:

(i) an issue of £0·50 ordinary shares at a premium of £1·50 per share, or

(ii) an issue of £1,200,000 10% debentures at par.

The Board of Directors of Grebe Ltd has already announced that it will maintain the same dividend payout ratio in future years as in the past and that this policy will be unaffected by the form of finance raised.

Required:

(a) For each of the financing options:

(i) prepare a forecast profit and loss account for the forthcoming year;

(ii) calculate the forecast earnings per share for the forthcoming year;

(iii) calculate the projected level of gearing at the end of the forthcoming year. (10 marks)

(b) Calculate the level of operating profit at which the earnings per share will be the same under each financing option. (5 marks)

(c) Briefly evaluate each of the financing options from the viewpoint of an existing shareholder. (5 marks)

(20 marks)

3 Despite substantial evidence, drawn from different countries and different time periods, that suggests the wealth of shareholders in a bidding company is unlikely to be increased as a result of taking over another company, takeovers remain an important part of the business landscape.

Required:

(a) Explain, in economic terms, what a company, which is committed to increasing shareholder wealth, should look for when seeking to acquire another company. (3 marks)

(b) Describe four ways in which a takeover may lead to an increase in wealth for the bidding company's shareholders. (8 marks)

(c) Discuss four reasons why a takeover may fail to deliver an expected increase in wealth for the bidding company's shareholders. (9 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 Mansfield plc is a UK-based manufacturer of navigation equipment for the aviation industry. The company is currently considering whether or not to establish a new manufacturing division in Spain, which will produce passenger safety equipment for ships. The Board of Directors has asked the Finance Department to conduct a financial appraisal of the proposal. The company employs net present value analysis for the appraisal of all its long-term projects.

The following information has been taken from the balance sheet of the company for the year that has just ended:

	£m
Share capital and reserves	
£1 ordinary shares	200
Retained profits	800
	1,000
Loan capital	
6% loan stock	300
Bank loan	200
	500

The ordinary shares have a current market value of £5·35 per share and the equity beta of the company is 1·2. The returns to the market are 10·4% and the risk-free rate is 5·1%. The loan stock is irredeemable and currently trading at £110 per £100 nominal value. It can be assumed that all of the company's loan capital is risk free. The company will not need to raise new finance for the new venture.

The Finance Department has identified a Spanish company which manufactures passenger safety equipment for ships. The company is financed 50% by equity and 50% by loan capital, based on market values, and has an equity beta of 1·6.

The effective corporation tax rate is 25% in both the UK and Spain.

Required:

(a) Identify and discuss three key assumptions that underpin the use of the weighted average cost of capital as an appropriate discount rate for investment appraisal purposes. (6 marks)

(b) Explain why the existing weighted average cost of capital of Mansfield plc should be adjusted when evaluating the new investment proposal and what problems may be encountered in making any adjustment. (4 marks)

(c) Using Modilgliani and Miller, calculate the weighted average cost of capital that should be used as the discount rate when evaluating the new proposal. (10 marks)

(20 marks)

5 Kellynch plc is a UK company that produces kitchen cabinets and worktops for large retail outlets and builders merchants. To date, the company has sold its products only to UK customers, however, it has recently been negotiating an order from a large US retailer. The order is worth \$800,000 and the amount will be payable in six months' time. The company is keen to break into the lucrative but highly competitive US market and sees the order as an important step in this direction.

The currency settlement details of the order have yet to be finalised and the directors of Kellynch plc are considering three methods of managing the foreign exchange risk associated with the order. These are:

1. To invoice in sterling, with payment due in six months' time, and to specify a rate of exchange based on the current spot rate.
2. To invoice in dollars and to use a forward market hedge by arranging to sell the dollars receivable forward at the six-month forward exchange rate.
3. To invoice in dollars and to buy sterling futures contracts (£62,500 per contract and rounded to the nearest whole number of contracts) and sell them in six months' time to close the company's position.

The current spot rate is £/\$ 1·4569 and the premium for the dollar for forward exchange contracts is 1·20 – 1·10 cents. The six months futures contract is currently trading at £/\$ 1·4542. Assume that the spot rate in six months' time will be £/\$ 1·4559 and the futures price in six months' time will be £/\$ 1·4472. The tick value is \$6·25 and one tick is 0·01 cents per £.

Required:

(a) Calculate the £ sterling received by Kellynch plc under each of the three options that are being discussed. (9 marks)

(b) Discuss the advantages and disadvantages of each option and state, with reasons, which option you consider the most appropriate. (11 marks)

(20 marks)

6 'The Enron debacle is the latest reminder of the perniciousness of a business elite. Directors of Enron made a huge amount of money from cooking the books and roasting the accounts. Non-executive directors were the pals of directors, hired to put up the appearance of corporate accountability, and collecting hefty fees for an odd day's work'. (Austin Mitchell MP, May 2002)

Required:

(a) Explain the role of non-executive directors in the corporate governance of a listed public company. (6 marks)

(b) Discuss the potential problems associated with this role and suggest ways in which these may be avoided. (14 marks)

(20 marks)

End of Question Paper