Diploma in Financial Management

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

TUESDAY 8 JUNE 2004

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.

Do not open this paper until instructed by the supervisor

This question paper must not be removed from the examination hall

The Association of Chartered Certified Accountants

Module B

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

x	12%	10%	8%
n			
0	1·00	1·00	1·00
1	0·89	0·91	0·93
2	0·80	0·83	0·86
3	0·71	0·75	0·79
4	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 Cygnus plc has a dividend cover ratio of 4·0 times and dividends are expected to increase by 4% per year for the foreseeable future. The company has one million £1 ordinary shares in issue and the market capitalisation (value) of the company is £50 million. After-tax profits for next year are expected to be £20 million.

What is the expected rate of return from the ordinary shares?

A 6·0%
B 10·0%
C 14·0%
D 25·0%.

2 Investors have an expected rate of return of 8% from ordinary shares in Algol plc, which have a beta of 1·2. The expected returns to the market are 7%.

What will be the expected rate of return from ordinary shares in Rigel plc, which have a beta of 1.8?

A 9·0%
B 10·5%
C 11·0%
D 12·6%.

3 Arcturus plc has agreed to acquire all the ordinary shares in Mira plc and has also agreed a share-for-share exchange as the form of consideration. The following information is available:

	Arcturus plc	Mira plc
	£m	£m
Operating profit	100	20
Net profit before taxation	80	14
Net profit after taxation	60	10
Share capital – £0·50 ordinary shares	£20m	£5m
Price/earnings ratio	10	12

The agreed share price for Mira plc will result in its shareholders receiving a premium of 25% on the current share price.

How many new shares must Arcturus plc issue to purchase the shares in Mira plc?

A 8·0 million
B 10·0 million
C 10·5 million
D 12·0 million.

4 A company issues convertible loan stock at £100 nominal value for £104. The loan stock can be converted in four years time at a rate of 80 £1 ordinary shares for each £100 nominal value of loan stock. The current market value of the shares is £1·20.

What is the conversion premium per share?

A £0·05
B £0·10
C £0·20
D £0·30.

5 Which one of the following may indicate that a business is over-capitalised?

A A higher-than-average debt to equity ratio
B A lower-than-average acid-test ratio
C A lower-than-average sales to working capital ratio
D A higher-than-average net profit margin.

6 Lyra plc, a listed public company, received news on 1 June 2004, in the form of a confidential letter, that it had won a contract from the UK government. The new contract is expected to increase profits significantly from 2006 onwards. The news of the contract was not made publicly available until 5 June 2004.

Which one of the following combinations of possible share price reactions would you expect on 5 June 2004 under the semi-strong and strong forms of market efficiency?

	Share price reaction	
	Semi-strong form	Strong form
A	Increase	Increase
B	Increase	No effect
C	No effect	Increase
D	No effect	No effect

7 A retailer sells 25,000 units of a particular product each year and the demand for the product is even throughout the year. The purchase price of the product is £4 per unit. The cost of placing each order for the product is £10, the cost of holding one unit in stock for one year is £2 and the economic order quantity is 500 units.

What is the total annual cost of trading in this particular product?

A £100,500
B £101,000
C £101,500
D £102,500

8 The efficient market hypothesis is based on the following assumptions:

1. A world without taxes

2. No share transactions costs

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

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

9 Lepus plc has issued loan stock of £100 nominal value with annual interest of 10% per year, based on the nominal value. The loan stock has two years remaining before it is redeemed at par. Interest is paid annually and the most recent interest payment has just been paid. Investors currently require a yield of 8% per year on the loan stock.

What is the market value of the loan stock per £100 nominal value?

A £95·30
B £100·40
C £103·90
D £125·00.

10 Consider the following two statements concerning finance leasing.

1. The lessor is responsible for the maintenance and servicing of the asset

2. The period of the lease will cover all, or substantially all, of the useful economic life of the leased asset.

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

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

11 Risks may be analysed according to their frequency and to their severity of loss.

Which type of risk is usually considered to be best dealt with through insurance?

	Frequency	Severity of loss
A	High	High
B	High	Low
C	Low	High
D	Low	Low

12 Ecliptic plc has ordinary shares in issue that have a beta of 0·8. The current market rate of return is 9% and the risk-free rate of return is 3%. The company pays a constant dividend of 40 pence per share.

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

A 392·2 pence
B 512·8 pence
C 555·6 pence
D 833·3 pence.

13 Volans plc is seeking to borrow £50 million for five years at a variable rate of interest and Apus plc is seeking to borrow £50 million for five years at a fixed rate of interest. The amount required by each company can be borrowed at the following interest rates:

	Variable rate	Fixed rate
Volans plc	LIBOR + 1·2%	5·2%
Apus plc	LIBOR + 1·4%	6·0%

The two companies enter into a swap arrangement and any benefits are shared equally.

What is the net annual interest rate for Volens plc when LIBOR is 5%?

A 5·7%
B 5·8%
C 5·9%
D 6·1%.

14 Sirius plc is a UK business that has recently purchased machinery from a Bulgarian exporter. The company has been invoiced in £ sterling and the terms of sale include payment within sixty days. During this payment period, the £ sterling weakened against the Bulgarian lev.

If neither Sirius plc nor the Bulgarian exporter hedge against foreign exchange risk, what would be the foreign exchange gain or loss arising from this transaction for Sirius plc and for the Bulgarian exporter?

	Sirius plc	Bulgarian exporter
A	No gain or loss	Gain
B	Gain	No gain or loss
C	No gain or loss	Loss
D	Loss	No gain or loss.

15 Polaris plc, a UK-based business, has recently exported antique furniture to a US customer and is due to be paid $500,000 in three months' time. To hedge against foreign exchange risk, Polaris plc has entered into a forward contract to sell $500,000 in three months' time. The relevant exchange rates are as follows:

Spot	£1 = $1·5535 – 1·5595
Three months' forward	0·30 – 0·25 cents premium

How much will Polaris plc receive in £ sterling at the end of three months?

A £321,130
B £321,234
C £322,373
D £322,477.

16 The following exchange rates of £ sterling against the Singapore dollar have been quoted in a financial newspaper:

Spot	£1 = Singapore $2·3820
Three months' forward	£1 = Singapore $2·3540

The interest rate in Singapore is 6% per year for a three-month deposit or borrowing.

What is the annual interest rate for a three-month deposit or borrowing in the UK?

A 2·71%
B 7·26%
C 8·71%
D 10·83%

17 A business uses each of the hedging methods described below to protect against a particular type of foreign exchange risk:

	Hedging method used	Type of foreign exchange risk
1.	Matching receipts and payments	Transaction risk
2.	Matching assets and liabilities	Economic risk
3.	Leading and lagging	Translation risk

Which of the hedging methods described above are suitable for their intended purpose?

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

18 Tucana plc, a UK-based business, has placed an order for goods from a French supplier and a payment of €1,000,000 for the goods is due in two months' time. The company has decided to take out an option at a strike price of £1 = €1·6142 to hedge the currency risk. A call option would cost £0·50 per €100 and a put option would cost £0·40 per €100. These options relate to the purchase or sale of euros.

What is the maximum amount that the company will have to pay if the spot rate in two months' time is £1 = €1·5834?

A £623,502
B £624,502
C £635,552
D £636,552.

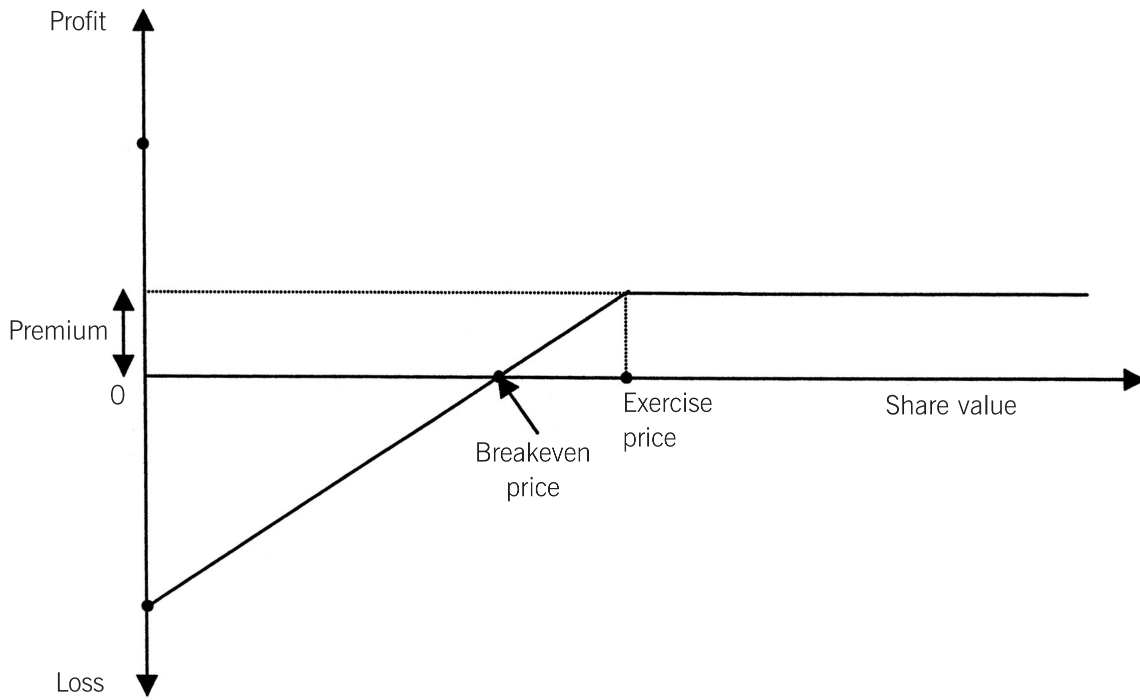
19 The Combined Code states that an audit committee should contain:

1. a minimum of three non-executive directors.
2. non-executive directors only.

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

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

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 Auriga (Healthcare) plc has invested £220,000 over the past two years in the development of a personal stress-monitoring device (PSMD). The device is designed for busy individuals wishing to check their stress levels. Market research that was commissioned earlier in the year at a cost of £45,000 suggests that the price for the PSMD should be £22 per unit and that the expected product life cycle of the device is four years.

In order to produce the device, the business must purchase immediately specialist machinery and equipment at a cost of £300,000. This machinery and equipment has an expected life of four years and will have no residual value at the end of this period. The machinery and equipment can produce a maximum of 15,000 PSMDs per year over four years. To ensure that the maximum output is achieved, the business will spend £50,000 per year in advertising the device over the next four years.

Based on the maximum output of 15,000 units per year, the PSMD has the following expected costs per unit (excluding the advertising costs above):

	Notes	£
Materials	(1)	6·50
Labour	(2)	5·50
Overheads	(3)	8·50
		20·50

Notes

(1) The materials figure above includes a charge of £2 for a polymer that is currently in stock and can be used for this project. Each PSMD requires 200 grams of the polymer and the charge is based on the original cost of £1 per 100 grams for the polymer. It is a material that is currently used in other areas of the business and the cost of replacing the polymer is £1·50 per 100 grams. The polymer could easily be sold at a price of £1·25 per 100 grams.

(2) The labour costs relate to payments made to employees that will be directly involved in producing the PSMD. These employees have no work at present and, if the PSMD is not produced, they will be made redundant immediately at a cost of £230,000. If, however, the PSMD is produced, the employees are likely to be found other work at the end of the four-year period and so no redundancy costs will be incurred.

(3) The figure includes a depreciation charge for the new machinery and equipment. The policy of the business is to depreciate fixed assets in equal instalments over their expected life. All other overheads included in the above figure are incurred in production of the new device.

The business has a target capital structure of 50% equity and 50% loan capital. The market cost of equity is 12% and the market cost of loan capital is 8%. The PSMD project has the same level of risk as that of other projects undertaken and the level of investment required is very small compared to the size of the business. If the project is accepted, it will be financed entirely by equity.

Ignore taxation.

Required

(a) Calculate the net present value of the project. (12 marks)

(b) Calculate the required reduction in annual net cash flows from operations before the project becomes unprofitable. (5 marks)

(c) Comment on your findings in (a) and (b) above. (3 marks)

(20 marks)

2 Sagitta plc is a large UK fashion retailer that opened stores in India and China three years ago. This has proved to be less successful than expected and so the directors of the company have decided to withdraw from the overseas market and to concentrate on the UK market. To raise the finance necessary to close the overseas stores, the directors have also decided to make a one-for-five rights issue at a discount of 30% on the current market value. The most recent profit and loss account of the business is as follows:

Profit and loss account for the year ended 31 May 2004

	£m
Sales	1,400·0
Net profit before interest and taxation	52·0
Interest payable	24·0
Net profit before taxation	28·0
Corporation tax	7·0
Net profit after taxation	21·0
Ordinary dividends payable	14·0
Retained profit	7·0

The capital and reserves of the business as at 31 May 2004 are as follows:

	£m
£0·25 ordinary shares	60·0
Revaluation reserve	140·0
Retained profit	320·0
	520·0

The shares of the business are currently traded on the London Stock Exchange at a P/E ratio of 16 times.
An investor owning 10,000 ordinary shares in the business, has received information of the forthcoming rights issue but cannot decide whether to take up the rights issue, sell the rights, or allow the rights offer to lapse.

Required:

(a) Calculate the theoretical ex-rights price of an ordinary share in Sagitta plc. (5 marks)

(b) Calculate the price at which the rights in Sagitta plc are likely to be traded. (3 marks)

(c) Evaluate each of the options available to the investor with 10,000 ordinary shares. (8 marks)

(d) State, from the viewpoint of the business, how critical the pricing of a rights issue is likely to be. (4 marks)

(20 marks)

3 Fornax Business Sevices plc provides cleaning services to offices, hotels and restaurants. The turnover of the business is £18 million and this is unlikely to change in the foreseeable future. All sales are on credit and the business is finding that managing credit customers is becoming increasingly difficult. In recent years, bad debts have risen to £175,000 per year and the average credit period taken by customers has risen to 90 days, even though the stated terms of credit are 30 days. This has led to a strain on the liquidity of the business.

At present the business has a bank overdraft of £6·6 million on which it pays interest at the rate of 12% per year. The directors of Fornax Business Services plc would like to see a reduction in the size of the overdraft and are currently investigating the possibility of employing the services of a factor. A debt factoring business has offered to take over the sales ledger of the business and will charge a fee of 3% of turnover per year for this service. In addition, the factor has agreed to advance an amount to the business equivalent to 80% of the trade debts outstanding at rate of 10% per year and Fornax will make use of this facility. It is believed that employing the factor will eliminate bad debts and will reduce the average credit period to 30 days. It will also eliminate the need for a credit control department and this will result in savings of £120,000 per year.

Required:

(a) Calculate the net annual cost, or savings, to the business of employing the services of a debt factor. (12 marks)

(b) Compare and contrast debt factoring with invoice discounting. (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 Etamin Inc is a US-based business that is a major computer software provider to the defence industry. In order to expand its business, the company has recently agreed, in principle, to buy a small computer software business based in France for €10·54 million from a French conglomerate. However, Etamin Inc is concerned over certain legal and technical aspects of the software business. The two parties to the transaction have therefore agreed that the deal will be finalised and the purchase price will be paid in three months' time, subject to the satisfactory outcome of a due diligence investigation by an independent firm of accountants.

In order to deal with foreign exchange risk associated with the purchase of the French business, the Corporate Treasurer of Etamin Inc is considering the following choices:

1. The purchase of futures contracts, which will be sold in three months' time in order to close the company's position. The relevant euro futures contracts are currently priced at €1 = $0·9750. The futures contract size is €125,000 (and should be rounded to the nearest whole number of contracts). The tick value is $12·50 and one tick is 0·01 cents per €.
2. The purchase of an over-the-counter option at an exercise price of €1 = $0·9900 with a premium cost of $2 per €100.

The current spot rate is €1 = $0·9812.

The Corporate Treasurer of Etamin Inc believes that one of two future scenarios may occur and is concerned with the effect of each scenario on the choices described above.
The two scenarios are:

1 in three months' time, the spot rate moves to €1 = $0·9998 and the futures price moves to €1 = $0·9860

2 in three months' time, the spot rate moves to €1 = $0·9660 and the futures price moves to €1 = $0·9580

Required:

(a) Calculate the cost of the futures contract and the hedge efficiency under each scenario. (10 marks)

(b) Calculate the final outcome of the over-the-counter option under each scenario. (4 marks)

(c) Comment on your findings in (a) and (b) above. (2 marks)

(d) Comment on the appropriateness of each hedging instrument for Etamin Inc. (4 marks)

(20 marks)

5 Serpens plc has recently been listed on the London Stock Exchange. In the previous month, the company announced profits before interest and taxation of £0·5 million and the Board of Directors believes that this level of profits is unlikely to change in the foreseeable future. The dividend policy of the company is to distribute all available profits to shareholders. The company is financed entirely by equity shares but the Board wishes to change its capital structure by issuing £3 million 5% debentures at par and using the proceeds to purchase and cancel some of the equity shares in issue.

Diphda plc operates within the same industry as Serpens plc and is considered to have the same level of business risk. It has a capital structure of 70% equity and 30% loan capital. The equity beta of Diphda plc is 1·4 and the loan capital is risk free. The after-tax, risk-free rate of return and returns to the market are 4% and 9% respectively.
The rate of corporation tax is 20%.

Required:

(a) Calculate the profits available for dividend for Serpens plc and the value of the company under:
(i) the current capital structure; and
(ii) the proposed capital structure. (11 marks)

(b) Examine the arguments for and against the view that the capital structure of a company has no effect on the value of the company. (9 marks)

(20 marks)

6 The audit process is an important element of corporate governance.

Required:

(a) Describe the external audit process and internal audit process and discuss the role of each type of audit in contributing towards an effective system of corporate governance. (16 marks)

(b) Briefly discuss the relationship between the two types of audit. (4 marks)

(20 marks)

End of Question Paper