

Diploma in Financial Management

PAPER DB1, INCORPORATING SUBJECT AREAS

- FINANCIAL STRATEGY
- RISK MANAGEMENT

TUESDAY 3 DECEMBER 2002

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 THREE questions in total to be answered.

and Candidates **MUST** answer ONE question from

Section C 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%	12%	10%
0		1.00	1.00	1.00	1.00
1		0.86	0.87	0.89	0.91
2		0.74	0.76	0.80	0.83
3		0.64	0.66	0.71	0.75
4		0.55	0.57	0.64	0.68

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 Hera plc has 5 million shares in issue that have a current market value of £10.00 per share. The company has decided to make a one-for-four rights issue at a discount of 20% on the current market value.

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

- A £0.40
- B £0.50
- C £1.60
- D £2.40.

- 2 The chief executive of a listed company has recently announced changes to the accounting policies of the company. By making these changes, reported profits are expected to increase. The chief executive made the changes to create a better impression of company performance among investors.

What is the maximum level of market efficiency that the chief executive can assume that would be consistent with such behaviour?

- A Strong-form efficiency
- B Semi-strong form efficiency
- C Weak-form efficiency
- D Efficiency at no level.

- 3 If (i) W is the expected dividend from a share for next year
(ii) X is the current value of a share
(iii) Y is a constant rate of growth of dividends, and
(iv) Z is the expected return from the share

What form does Gordon's dividend valuation model take?

- A $X = W/(Z + Y)$
- B $X = W/(Z - Y)$
- C $X = (W/Z) + Y$
- D $X = (W/Z) - Y$.

- 4 Leto plc has 10 million £1.00 ordinary shares in issue that have a current market value of £2.00 per share. The company also has irredeemable loan capital in issue with a nominal value of £20 million that is quoted at £150 per £100 nominal value. The cost of ordinary shares is estimated at 15% and the rate of interest on the loan capital is 12%. The rate of corporation tax is 25%.

What is the weighted average cost of capital for the company?

- A 13.0%
- B 11.4%
- C 11.0%
- D 13.2%.

- 5 Elara plc is considering an investment in a new process. The new process will require an increase in stocks of £30,000 during the first year. There will also be an increase in debtors outstanding of £40,000 and an increase of creditors outstanding of £35,000 during the first year. The new process will use machinery that was purchased immediately before the first year of operations at a cost of £300,000. The machinery is depreciated using the straight-line method and has an estimated life of five years and no residual value. During the first year, the net operating profit before depreciation from the new process is expected to be £180,000. The business uses the net present value method when evaluating investment proposals.

When undertaking the net present value calculations, what would be the estimated net cash flow during the first year of the project? (Ignore taxation)

- A £85,000
- B £215,000
- C £145,000
- D £155,000.

- 6 To deal with the effect of inflation when appraising investment projects, two possible approaches can be used. These are:

1. To exclude inflation from the estimated future cash flows and to apply a discount rate expressed in real terms.
2. To adjust the estimated future cash flows by the relevant rates of inflation and to adjust the discount rate to reflect current market rates.

Which one of the following combinations is correct?

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

- 7 Demeter plc wishes to take over Semele plc. The following information relates to the two companies:

	Number of ordinary shares in issue	Market price per ordinary share
Demeter plc	20 million	£10.00
Semele plc	6 million	£3.00

The market price of each company's shares is regarded as an accurate reflection of their intrinsic value.

The takeover is expected to lead to research and development savings after taxation that have a present value of £12 million. The bid offer consists of one share in Demeter plc for every three shares held in Semele plc, plus £1.00 in cash for every three shares held in Semele plc.

By how much would the wealth of a shareholder who owns 3,000 shares in Semele plc increase if the takeover was successful?

- A £2,000
- B £2,364
- C £2,455
- D £1,818.

- 8 The shares of Danae plc have a beta of 0.5 and the shares of Alcmene plc have a beta of 2.0. Investors have an expected rate of return of 4% from shares in Danae plc and the expected returns to the market are 6%.

Using the Capital Asset Pricing Model, what will be the expected rate of return for investors in Alcmene plc?

- A 8%
- B 10%
- C 12%
- D 16%.

- 9 Maia plc is considering investing in two competing projects: Delta and Gamma. Delta has a net present value (NPV) of £16,500 and an internal rate of return (IRR) of 17%. Details of the estimated cash flows of Gamma are as follows:

	£000
Cash flows	
Year 0	(200)
Year 1	120
Year 2	60
Year 3	80

The business has a cost of capital of 10%.

Which one of the following combinations is correct concerning the NPV and IRR of the two projects?

	Project	
	Delta	Gamma
A	Higher NPV	Higher IRR
B	Higher NPV	Lower IRR
C	Lower NPV	Higher IRR
D	Lower NPV	Lower IRR.

- 10 Consider the following statements:

1. Investors can only expect to receive a return for incurring unsystematic risk.
2. Systematic risk can be eliminated by holding a well-diversified portfolio of shares.

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.

- 11 **What is the purpose of hedging?**

- A To protect a profit already made from having undertaken a risky position
- B To make a profit by accepting risk
- C To reduce or eliminate exposure to risk
- D To reduce costs.

12 Which of the following is true?

- A As the majority of futures contracts are never taken to delivery a futures contract is not legally binding
- B The quantity in a futures contract is agreed between the buyer and seller
- C Delivery dates on futures contracts are specified by the futures exchange and not by the buyer and seller
- D The margin requirement is a purchase cost of a future.

Questions 13 to 15 relate to the Short Sterling 3 Month Interest Rate Future which is based on an underlying contract size of £500,000 for three months (one quarter of a year).

- 13** Chatman plc has taken out a long position of five 'three month Sterling' interest rate contracts traded on LIFFE when they were priced to reflect an interest rate of 6.20%. 23 days later Chatman closes its position when the contracts are priced to reflect an interest rate of 6.60%.

The total profit or loss made by Chatman is:

- A £2,500 profit
 - B £2,500 loss
 - C £10,000 profit
 - D £10,000 loss.
- 14** It is now mid August. In about two or three months' time JLH plc will need to borrow £6,000,000 for six months and wishes to obtain protection against the possibility of rising interest rates. JLH has been advised to short (or sell) the 'three month Sterling' interest rate contracts traded on LIFFE.

JLH should:

- A Short 24 of the September contracts
 - B Short 12 of the September contracts
 - C Short 24 of the December contracts
 - D Short 12 of the December contracts.
- 15** It is now March the following year and JLH plc is again anticipating borrowing – this time £5,000,000 for three months commencing in about two months' time.

JLH can currently borrow at 7.40% and the June 'three month Sterling' interest rate contracts traded on LIFFE are priced at 94.30.

In order to attempt to guard against interest rate rises JLH shorts 10 of the June contracts.

In May interest rates have risen and JLH borrows £5,000,000 at 8.70%. JLH closes the position on LIFFE by buying back 10 June contracts at the May price of 92.70.

Which of the following is true?

- A The hedge worked perfectly
- B As the interest rate faced by JLH and that implied by the future are different, it is not appropriate to utilise futures to hedge its borrowing costs
- C The hedge increased JLH's borrowing costs
- D The hedge reduced JLH's borrowing costs.

16 The combined code states that all directors should be required to submit themselves for re-election:

- A** Annually
- B** At least every two years
- C** At least every three years
- D** At least every four years.

17 Williamson plc, a UK based firm, is about to tender for an overseas contract. Williamson's internal budgets for the tender indicate the following:

		%
Sales Value – US Dollar (\$)	100	
Costs		
Sterling (£)	65	
US Dollar (\$)	25	90
Profit		10

The Dollar costs include the costs of short-term US finance and it is intended to pay for these Dollar costs out of the Dollar receipts. The total amount of the tender is \$25 million and, if the tender is successful, the work will be carried out in the next seven months with payment due to be received in full in ten months.

The budgeted figures are all based on the current £/\$ exchange rate and there is concern that the project is vulnerable to exchange rate fluctuations. Action is proposed to protect the firm against exchange rate fluctuations.

To protect itself Williamson should:

- A** Sell forward \$18.75 million for settlement in ten months
- B** Sell forward \$25 million for settlement in ten months
- C** Purchase an option to sell \$18.75 million in ten months
- D** Purchase an option to sell \$25 million in ten months.

18 The spot rate of exchange is £1 = \$1.4400. Annual interest rates are 4% in the UK and 10% in the USA.

The three month forward rate of exchange should be:

- A** £1 = \$1.4616
- B** £1 = \$1.5264
- C** £1 = \$1.5231
- D** £1 = \$1.4614.

Assume three months to be **exactly** one quarter of a year.

19 The one year rate of inflation is expected to be 3.0%. The one year money rate of interest is 6.3%.

The one year real rate of interest is:

- A** 3.30%
- B** 3.20%
- C** 9.30%
- D** 9.49%.

20 You have just become the first Treasurer of Maghett plc, a long established UK based company. Among your early tasks as Treasurer is to analyse and take appropriate action on the ad hoc positions which the company has previously entered into before the Treasury function was properly controlled. One such set of positions concerns two currency options as follows:

Option A – a European put option purchased giving you the right to sell \$4,200,000 at the rate of £1 = \$1.40. The option expires in January.

Option B – a European put option sold (or written) by your company giving the owner of the option the right to sell to you \$4,200,000 at the rate of £1 = \$1.50. This option also expires in January.

The current exchange rate is £1 = \$1.44.

Which of the following statements is correct?

- A** Option A requires the firm to sell \$4,200,000 for £3,000,000 and Option B requires the firm to buy \$4,200,000 for £2,800,000 therefore a gain of £200,000 is guaranteed
- B** As Option A is currently showing a gain of £83,333 it should be exercised immediately to realise that profit
- C** As the potential loss from writing an option can be very large, Option B should be exercised immediately to ensure its current loss of £116,666 will not increase
- D** The maximum gain that can be produced by this position of two options is £200,000.

(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 Ares Ltd achieved sales of £25 million for the year ending 30 November 2002. Sales have not increased over the past three years and the sales forecast prepared by the marketing department suggests that there will be no change in the forthcoming year. All sales are on credit and trade debtors are expected to pay one month after being invoiced. However, trade debts outstanding are received, on average, three months after the invoice date.

A new marketing director has recently been appointed and she has suggested that the company should offer a 2% discount for those trade debtors who pay within one month. She believes that this policy will result in 80% of the value of trade debts outstanding being received at the end of one month and only 20% being received, on average, at the end of three months. The marketing director has also argued that a discount policy for prompt payment would prove popular with customers and would lead to a 20% increase in sales.

The following forecasts were made for the forthcoming year before the proposed policy was suggested:

- (i) a gross profit margin on sales of 40%;
- (ii) variable overhead expenses of 30% of sales;
- (iii) fixed expenses of £1.2 million;
- (iv) sales, cost of sales and overhead expenses will accrue evenly over the year;
- (v) variable and fixed overhead expenses will be paid one month after being incurred;
- (vi) two months' credit (based on the cost of sales) will be taken from trade creditors.

The Marketing Director believes these forecasts will be unaffected by any decision concerning the introduction of a discount.

Company policy is to hold three months' stock at all times and to have a cash balance at the year end of £0.1 million. Ignore taxation and dividends.

Required:

(a) Calculate the expected net profit for the forthcoming year assuming:

- (i) the discount policy is introduced;**
- (ii) the discount policy is not introduced.** (7 marks)

(b) Calculate the investment in working capital at the end of the forthcoming year assuming:

- (i) the discount policy is introduced;**
- (ii) the discount policy is not introduced.** (8 marks)

(c) Comment on your findings in (a) and (b) above and state whether or not the proposed discount policy for prompt payment should be introduced. (5 marks)

(Workings should be in £millions and should be made to one decimal place)

(20 marks)

- 2 Perseus Ltd is a wholly-owned subsidiary of Minos plc. Although the subsidiary has provided satisfactory levels of performance, Minos plc is considering the sale of the subsidiary to another conglomerate. Minos plc is experiencing trading problems in other parts of its operations and needs to sell Perseus Ltd in order to raise much-needed finance. The most recent balance sheet of Perseus Ltd is as follows:

Balance sheet as at 30 November 2002

	£m	£m	£m
Fixed assets			
Freehold land and buildings at cost		58.5	
Less Accumulated depreciation		10.2	48.3
Fixtures and fittings at cost		8.6	
Less Accumulated depreciation		2.9	5.7
Motor vehicles at cost		3.2	
Less Accumulated depreciation		1.4	1.8
			55.8
Current assets			
Stock at cost	49.5		
Trade debtors	23.4		
Cash at bank	21.5	94.4	
Less Creditors: amounts falling due within one year			
Trade creditors	25.9		
Corporation tax	5.4	31.3	63.1
			118.9
Less Creditors: amounts falling due after one year			
Debentures			49.0
			69.9
Capital and reserves			
Ordinary £0.50 shares			25.0
Retained profit			44.9
			69.9
			69.9

Extracts from the profit and loss account for the year ended 30 November 2002 are as follows:

	£m
Net profit after taxation	10.7
Dividend proposed and paid	3.3

A bid of £3.50 per share for the shares in Perseus Ltd has been received from Leda plc. The agreed price would be paid in shares in the bidding company.

The following details were taken from a financial newspaper concerning the shares of Tityus plc, a similar business operating in the same industry that is listed on the Stock Exchange and Leda plc, the conglomerate company that has made the bid:

2001–2002

High	Low	Stock	Price	±or	Dividend (net)	Cover (times)	Yield (gross %)	P/E (times)
640p	580p	Tityus	615p	+5p	12.0p	2.5	2.2	20.5
1089p	530p	Leda	1089p	+2p	15.0p	3.0	1.5	24.2

An independent valuer has recently estimated the current realisable value of the company's assets as follows:

	£m
Freehold land and buildings	104.2
Fixtures and fittings	3.5
Motor vehicles	0.4
Stocks	58.0

The balance sheet values of the remaining assets were considered to reflect their net realisable values.

Tax on dividends is at the lower rate of income tax of 10%.

Required:

(a) Calculate the value per share of Perseus Ltd using the following valuation methods:

- (i) net assets (liquidation) basis;**
- (ii) dividend yield basis; and**
- (iii) price/earnings ratio basis.**

(9 marks)

(b) Briefly evaluate the strengths and weaknesses of each of the share valuation methods set out in (a) above.

(6 marks)

(c) Comment on the bid that has been received from Leda plc and state whether or not the bid should be accepted.

(5 marks)

(20 marks)

3 The failure rate among small businesses is very high compared to that of larger businesses. Studies in both the UK and US have shown that inadequate long-term financing is a major cause of this high failure rate.

Required:

(a) Identify and discuss the problems that small businesses face when seeking to obtain long-term finance.

(8 marks)

(b) Describe three sources of long-term finance and/or assistance in obtaining long-term finance that are available specifically for small businesses.

(12 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 Burnett plc currently has a small overdraft and it expects that for the next two years the normal operating cash costs will equal its operating cash revenues. It cannot increase its overdraft.

In addition to normal operating revenues it is expecting to receive the sum of £10 million in March (**exactly** three months from now) from the sale of one of its subsidiaries. The contract for the sale of the subsidiary has already been finalised with a highly reputable, and financially strong, blue chip company.

The money is to be used to fund the purchase of a property as part of Burnett’s strategy of relocating its activities. This contract has also been finalised with a contractual purchase price of £10.3 million and with completion to take place in September (**exactly** nine months from now).

Burnett is contractually committed to both the sale and the purchase and regards both the March cash inflow and the September cash outflow as being certain.

Burnett intends to invest, for the six-month (183 day) period, all the funds when received in March and because of the tight cash flow position it is imperative that Burnett can rely on receiving a good return on the £10 million but is concerned that interest rates in March might be considerably lower than their current level. It is suggested that a Forward Rate Agreement (FRA) be entered into in order to minimise interest rate risks.

FRAs currently available for a sum of £10 million are:

	LIBOR %
6V9	7.00–7.30
3V9	7.10–7.40
3V6	7.50–7.80

Required:

- (a) **Explain a Forward Rate Agreement and show (without calculations) how Burnett should attempt to minimise its interest rate risks by using a Forward Rate Agreement. Specify which FRA is appropriate for Burnett’s circumstances and indicate the appropriate interest rate.** (7 marks)
- (b) Over the three months to March, interest rates fell. In March the level of LIBOR was 5% and the bank deposit rate offered to Burnett was 4.45%.

The bank, and the FRA, utilise a 365 day year for interest calculations over the 183 day period.

Required:

Utilising the interest rates in March shown above:

- (i) **determine the cash flows associated with the FRA and specify their PRECISE timing;**
- (ii) **determine the final amount of money available in September and the effective rate of return achieved on the original £10 million as a result of utilising the FRA. Compare this position to the position which would have been achieved without utilising the FRA and comment on the outcomes.** (13 marks)

(20 marks)

- 5 (a) Morganfield plc, a UK company, wishes to borrow £1 million for a six month period and to be certain of its borrowing costs. It has been suggested that it should borrow Swiss Francs (SF) as the interest rates in Switzerland are lower than in the UK.

The rates are as follows:

SF/£ spot	2.40–2.45
SF/£ 6 months forward	3–1 cents premium
Sterling 6 months interest rate	8.00–8.50% per annum
Swiss Franc 6 months interest rate	5.50–5.80% per annum

6 months is to be considered as exactly $\frac{1}{2}$ of a year.

Required:

Determine the cost of borrowing in Switzerland and that of borrowing in the UK. Advise Morganfield whether it should borrow from Switzerland or within the UK. (8 marks)

- (b) **Explain a Cap, a Floor and a Collar and describe their uses in Corporate Treasury Management. Your explanation should refer to the theoretical nature of these instruments as well as their practical uses.** (6 marks)

- (c) Powell plc has a £10 million variable rate borrowing at LIBOR +2% from the Clearwater Bank. The interest rate is set each six months at 2% per annum above the then existing LIBOR rate; this rate is applied to the borrowing for the following six months and interest is paid semi-annually. This borrowing has a further three years to run before redemption at par.

Powell is concerned about the variability of interest rates and their impact on the cost of its borrowing. It has employed a consultant to estimate future LIBOR rates and the consultant's best estimates of LIBOR, based on the term structure of interest rates, are:

Now	8.00%
In 6 months	9.00%
In 12 months	10.50%
In 18 months	12.00%
In 24 months	7.20%
In 30 months	5.00%

The consultant's report states 'The current rate of 8% per annum is observable and is correct. The other annual interest rates are those currently implied by the term structure of interest rates'.

Powell has decided to utilise the consultant's figures for the purposes of analysing the possible impact of changes in LIBOR on its cash flows.

The Clearwater Bank has indicated that it is prepared to sell Powell a three year cap, based on a LIBOR rate of 8.90%, for an additional annual interest cost of 0.5%.

Required:

Using the consultant's estimates of LIBOR, show the cash flows on the loan:

- (i) **without a Cap;**
(ii) **with the Cap.**

(6 marks)

(20 marks)

- 6 (a) Describe, with brief comments, the factors which influenced the introduction of the various frameworks, codes and systems of corporate governance. (8 marks)
- (b) Describe how the introduction of each of the successive frameworks, codes and systems of corporate governance has contributed to better corporate governance. (12 marks)

(20 marks)

End of Question Paper