Got it Pass eLearning Co.   Revision Questions & Answers

Table of Contents

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0 D}{C_h}}$$

Miller–Orr Model

$$\text{Return point} = \text{Lower limit} + (\frac{1}{3} \times \text{spread})$$

$$\text{Spread} = 3\left[\frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}}\right]^{\frac{1}{3}}$$

The Capital Asset Pricing Model

$$E(r_i) = R_f + \beta_i\left(E(r_m) - R_f\right)$$

The asset beta formula

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

The Growth Model

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

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

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

The Fisher formula

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

Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{(1+h_c)}{(1+h_b)} \qquad F_0 = S_0 \times \frac{(1+i_c)}{(1+i_b)}$$

Present Va

Present value of 1 i.e. $(1 + r)^{-n}$

Where   r = discount rate
              n = number of periods until payment

Discoun

Periods (n)	1%	2%	3%	4%	5%
1	0·990	0·980	0·971	0·962	0·952
2	0·980	0·961	0·943	0·925	0·907
3	0·971	0·942	0·915	0·889	0·864
4	0·961	0·924	0·888	0·855	0·823
5	0·951	0·906	0·863	0·822	0·784
6	0·942	0·888	0·837	0·790	0·746
7	0·933	0·871	0·813	0·760	0·711
8	0·923	0·853	0·789	0·731	0·677
9	0·914	0·837	0·766	0·703	0·645
10	0·905	0·820	0·744	0·676	0·614
11	0·896	0·804	0·722	0·650	0·585
12	0·887	0·788	0·701	0·625	0·557
13	0·879	0·773	0·681	0·601	0·530
14	0·870	0·758	0·661	0·577	0·505
15	0·861	0·743	0·642	0·555	0·481

Annuity

Present value of an annuity of 1 i.e. $\dfrac{1-(1+r)^{-n}}{r}$

Where   r = discount rate
             n = number of periods

Discoun

Periods (n)	1%	2%	3%	4%	5%
1	0·990	0·980	0·971	0·962	0·952
2	1·970	1·942	1·913	1·886	1·859
3	2·941	2·884	2·829	2·775	2·723
4	3·902	3·808	3·717	3·630	3·546
5	4·853	4·713	4·580	4·452	4·329
6	5·795	5·601	5·417	5·242	5·076
7	6·728	6·472	6·230	6·002	5·786
8	7·652	7·325	7·020	6·733	6·463
9	8·566	8·162	7·786	7·435	7·108
10	9·471	8·983	8·530	8·111	7·722
11	10·37	9·787	9·253	8·760	8·306

Got it Pass eLearning Co.   Revision Questions & Answers
1   PV (Specimen Paper Sep 16)

PV Co, a large stock-exchange-listed company, is evaluating an investment proposal to manufacture Product W33, which has performed well in test marketing trials conducted recently by the company's research and development division. Product W33 will be manufactured using a fully-automated process which would significantly increase noise levels from PV Co's factory. The following information relating to this investment proposal has now been prepared:

Initial investment	$2 million
Selling price (current price terms)	$20 per unit
Expected selling price inflation	3% per year
Variable operating costs (current price terms)	$8 per unit
Fixed operating costs (current price terms)	$170,000 per year
Expected operating cost inflation	4% per year

The research and development division has prepared the following demand forecast as a result of its test marketing trials. The forecast reflects expected technological change and its effect on the anticipated life-cycle of Product W33.

Year	1	2	3	4
Demand (units)	60,000	70,000	120,000	45,000

It is expected that all units of Product W33 produced will be sold, in line with the company's policy of keeping no inventory of finished goods. No terminal value or machinery scrap value is expected at the end of four years, when production of Product W33 is planned to end. For investment appraisal purposes, PV Co uses a nominal (money) discount rate of 10% per year and a target return on capital employed of 30% per year. Ignore taxation.

Required:

(a) **Calculation the following values for the investment proposal:**
   (i) **net present value;**

   (5 marks)

   (ii) **internal rate of return; and**

   (3 marks)

   (iii) **return on capital employed (accounting rate of return) based on average investment**

   (3 marks)

(b) **Briefly discuss your findings in each section of (a) above and advise whether the investment proposal is financially acceptable.**

   (4 marks)

(c) **Discuss how the objectives of PV Co's stakeholders may be in conflict if the project is undertaken.**

   (5 marks)

(20 marks)

2   Degnis (Mar 16)

Degnis Co is a company which installs kitchens and bathrooms to customer specifications. It is planning to invest $4,000,000 in a new facility to convert vans and trucks into motorhomes. Each motorhome will be designed and built according to customer requirements. Degnis Co expects motorhome production and sales in the first four years of operation to be a follows.

Year	1	2	3	4
Motorhomes produced and sold	250	300	450	450

The selling price for a motorhome depends on the van or truck which is converted, the quality of the units installed and the extent of conversion work required. Degnis Co has undertaken research into likely sales and costs of different kinds of motorhomes which could be selected by customers, as follows:

Motorhome type	Basic	Standard	Deluxe
Probability of selection	20%	45%	35%
Selling price ($/unit)	30,000	42,000	72,000
Conversion cost ($/unit)	23,000	29,000	40,000

Fixed costs of the production facility are expected to depend on the volume of motorhome production as follows:

Production volume (units/year)	200-299	300-399	400-499
Fixed costs ($000/year)	4,000	5,000	5,500

Degnis Co pays corporation tax of 28% per year, with the tax liability being settled in the year in which it arises. The company can claim tax allowable depreciation on the cost of the investment on a straight-line basis over ten years. Degnis Co evaluates investment projects using an after-tax discount rate of 11%

Required

(a) Calculate the expected net present value of the planned investment for the first four years of operation.

(7 marks)

(b)   After the fourth year of operation, Degnis Co expects to continue to produce and sell 450 motorhomes per year for the foreseeable future.

Required:

Calculate the effect on the expected net present value of the planned investment of continuing to produce and sell motorhomes beyond the first four years and comments on the financial acceptability of the planned investment.

(3 marks)

(c)   **Critically discuss the use of probability analysis in incorporating risk into investment appraisal.**

(5 marks)

(20 marks)

3   **Dysxa (Dec 16)**

Dysxa Co is looking to expand the capacity of an existing factory in its Alpha Division by 850,000 units per year in order to meet increased demand for one of its products. The expansion will cost $3·2 million.

The selling price of the product is $3·10 per unit and variable costs of production are $1·10 per unit, both in current price terms. Selling price inflation of 3% per year and variable cost inflation of 6% per year are expected. Nominal fixed costs of production have been forecast as follows:

Year	1	2	3	4
Fixed costs ($)	110,000	205,000	330,000	330,000

Dysxa Co has a nominal after-tax weighted average cost of capital of 10% and pays corporation tax of 20% per year one year in arrears. The company can claim 25% reducing balance tax-allowable depreciation on the full cost of the expansion, which you should assume is paid at the start of the first year of operation.

Dysxa Co evaluates all investment projects as though they have a project life of four years and assumes zero scrap value at the end of four years.

Required:

(a) **Calculate the net present value of the investment project and comment on its financial acceptability.**

(8   marks)

(b) Dysxa Co has limited the capital investment funds in its Delta Division to $7 million. The division has identified five possible investment projects, as follows:

Project	Initial investment	Net present value
A	$3,000,000	$6,000,000
B	$2,000,000	$3,200,000
C	$1,000,000	$1,700,000
D	$1,000,000	$2,100,000
E	$2,000,000	$3,600,000

These projects are divisible and cannot be deferred or repeated. Projects C and E are mutually exclusive.

Determine the net present value of the optimum investment schedule for Delta Division.

(3 marks)

(c) **Discuss the reasons why hard and soft capital rationing occur.**

(5 marks)

(d) **Discuss TWO ways in which the risk of an investment project can be assessed.**

(4 marks)

(20 marks)

4   Spot (Dec 13)

Spot Co is considering how to finance the acquisition of a machine costing $750,000 with an operating life of five years. There are two financing options.

Option 1
The machine could be leased for an annual lease payment of $155,000 per year, payable at the start of each year.

Option 2
The machine could be bought for $750,000 using a bank loan charging interest at an annual rate of 7% per year. At the end of five years, the machine would have a scrap value of 10% of the purchase price. If the machine is bought, maintenance costs of $20,000 per year would be incurred.

Taxation must be ignored.

Required:

(a) Evaluate whether Spot Co should use leasing or borrowing as a source of finance, explaining the evaluation method which you use.

(10 marks)

(b) Discuss the attractions of leasing as source of both short-term and long-term finance.

(5 marks)

(c) Discuss briefly the reasons why interest rates may differ between loans of different maturity.

(5 marks)

(20 marks)

5   Fence (Sep 16)

The following information relates to an investment project which is being evaluated by the directors of Fence Co, a listed company. The initial investment, payable at the start of the first year of operation, is $3.9 million.

Year	1	2	3	4
Net operating cash flow ($000)	1,200	1,500	1,600	1,580
Scrap value ($000)				100

The directors believe that this investment project will increase shareholder wealth if it achieves a return on capital employed greater than 15%. As a matter of policy, the directors require all investment projects to be evaluated using both the payback and return on capital employed methods. Shareholders have recently criticized the directors for using these investment appraisal methods, claiming that Fence Co ought to be using the academically-preferred net present value method.

The directors have a remuneration package which includes a financial reward for achieving an annual return on capital employed greater than 15%. The remuneration package does not include a share option scheme.

(i)   **What is the payback period of the investment project?**

A. 2.75 years
B. 1.50 years
C. 2.65 years
D. 1.55 years

(2 marks)

(ii)   **Based on the average investment method, what is the return on capital employed of the investment project?**

A. 13.3%
B. 26.0%
C. 52.0%
D. 73.5%

(2 marks)

(iii)   **Which of the following statements about investment appraisal methods is correct?**

A. The return on capital employed method considers the time value of money
B. Return on capital employed must be greater than the cost of equity if a project is to be accepted
C. Riskier projects should be evaluated with longer payback periods
D. Payback period ignores the timing of cash flows within the payback period

(2 marks)

(iv) **Which of the following statements about Fence Co is/are correct?**

(1) Managerial reward schemes of listed companies should encourage the achievement of stakeholder objectives
(2) Requiring investment projects to be evaluated with return on capital employed is an example of dysfunctional behavior encouraged by performance-related pay
(3) Fence Co has an agency problem as the directors are not acting to maximize the wealth of shareholders

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

(2 marks)

(v) **Which of the following statements about Fence Co directors' remuneration package is/are correct?**

(1) Directors' remuneration should be determined by senior executive directors
(2) Introducing a share option scheme would help bring directors' objectives in line with shareholders' objectives
(3) Linking financial rewards to a target return on capital employed will encourage short-term profitability and discourage capital investment

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

(2 marks)

6   Link (Dec 16)

Link Co has been prevented by the competition authorities from buying a competitor, Twist Co, on the basis that this prevents a monopoly position arising. Link Co has therefore decided to expand existing business operations instead and as a result the finance director has prepared the following evaluation of a proposed investment project for the company:

	$'000
Present value of sales revenue	6,657
Present value of variable costs	(2,777)
Present value of contribution	**3,880**
Present value of fixed costs	(1,569)
Present value of operating cash flow	**2,311**
Initial capital investment	(1,800)
Net present value	**511**

The project life is expected to be four years and the finance director has used a discount rate of 10% in the evaluation. The investment project has no scrap value.

The finance director is considering financing the investment project by a new issue of debt.

i)   **What is the change in sales volume which will make the NPV zero?**

A. 7.7%
B. 13.2%
C. 18.4%
D. 22.1%

(2 marks)

ii)   **Which of the following statements relating to sensitivity analysis is/are correct?**

(1)	Although critical factors may be identified, the management of Link Co may have no control over them
(2)	A weakness of sensitivity analysis is that it ignores interdependency between project variables
(3)	Sensitivity analysis can be used by Link Co to assess the risk of an investment project

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

(2 marks)

iii)   **Using the average investment method and assuming operating cash flows of $729,000 per year, what is the return on capital employed of the investment project?**

A. 16%
B. 28%
C. 31%
D. 64%

(2 marks)

iv) **Which of the following statements relating to debt finance is correct?**

A. Link Co can issue long-term debt in the euro currency markets
B. The interest rate which Link Co pays on its new issue of debt will depend on its weighted average cost of capital
C. A new issue of loan notes by Link Co will take place in the primary market
D. Link Co will not be able to issue new debt without offering non-current assets as security

(2 marks)

v) **Which of the following statements relating to competition policy is/are correct?**

(1) Scale economies are an advantage of monopoly and oligopoly

(2) Social costs or externalities are an example of economic inefficiency arising from market failure

(3) Monopoly is discouraged because it can lead to inefficiency and excessive profits

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

(2 marks)

7   **Card (Dec 13)**

Card Co has in issue 8 million shares with an ex dividend market value of $7.16 per share. A dividend of 62 cents per share for 2013 has just been paid. The pattern of recent dividends is as follows:

Year	2010	2011	2012	2013
Dividends per share (cents)	55.1	57.9	59.1	62.0

Card Co also has in issue 8.5% bonds redeemable in five years' time with a total nominal value of $5 million. The market value of each $100 bond is $103.42. Redemption will be at nominal value.

Card Co is planning to invest a significant amount of money into a joint venture in a new business area. It has identified a proxy company with a similar business risk to the joint venture. The proxy company has an equity beta of 1.038 and is financed 75% by equity and 25% by debt, on a market value basis.

The current risk-free rate of return is 4% and the average equity risk premium is 5%. Card Co pays profit tax at a rate of 30% per year and has an equity beta of 1.6.

Required:

(a) **Calculate the cost of equity of Card Co using the dividend growth model.**

(3 marks)

(b) **Discuss whether the dividend growth model or the capital asset pricing model should be used to calculate the cost of equity.**

(5 marks)

(c) **Calculate a project-specific cost of equity for Card Co for the planned joint venture.**

(4 marks)

(d) **Discuss whether changing the capital structure of a company can lead to a reduction in its cost of capital and hence to an increase in the value of the company.**

(8 marks)

(20 marks)

8   Dinla (Mar 16)

Dinla Co has the following capital structure.

	$000	$000
Equity and reserves		
Ordinary shares	23,000	
Reserves	247,000	270,000
Non-current liabilities		
5% Preference Shares	5,000	
6% Loan notes	11,000	
Bank loan	3,000	
		19,000
		289,000

The ordinary shares of Dinla Co are currently trading at $4.26 per share on an ex dividend basis and have a nominal value of $0.25 per share. Ordinary dividends are expected to grow in the future by 4% per year and a dividend of $0.25 per share has just been paid.

The 5% preference shares have an ex dividend market value of $0.56 per share and a nominal value of $1.00 per share. These shares are irredeemable.

The 6% loan notes of Dinla Co are currently trading at $95.45 per loan note on an ex interest basis and will be redeemed at their nominal value of $100 per loan note in five years' time.

The bank loan has a fixed interest rate of 7% per year. Dinla Co pays corporation tax at a rate of 25%.

Required:

(a) Calculate the after-tax weighted average cost of capital of Dinla Co on a market value basis.

(8 marks)

(b) Discuss the connection between the relative costs of sources of finance and the creditor hierarchy.

(3 marks)

(c) Explain the differences between Islamic finance and other conventional finance.

(4 marks)

(15 marks)

9   Gadner (Dec 16)

Gadner Co wishes to calculate its weighted average cost of capital. The company has the following sources of finance:

	$'000
Ordinary shares	8,000
10% Preference shares	2,000
8% Loan notes	6,000
Bank loan	2,000
	18,000

The ordinary shares have a nominal value of $0·20 per share and are currently trading at $6·35 per share. The equity beta of Gadner Co is 1·25.

The preference shares are irredeemable and have a nominal value of $0·50. They are currently trading at $0·55 per share.

The 8% loan notes have a nominal value of $100 per loan note and a market value of $108·29 per loan note. They are redeemable in six years' time at a 5% premium to nominal value.

The bank loan charges fixed interest of 7% per year.

The yield on short-dated UK treasury bills is 4% and the equity risk premium is 5·6% per year. Gadner Co pays corporation tax of 20%.

Required:

(a) Calculate the market value weighted average cost of capital of Gadner Co.

(11 marks)

(b) Explain the meaning of the terms business risk and financial risk.

(4 marks)

(c) Discuss the key features of a rights issue as a way of raising equity finance.

(5 marks)

(20 marks)

10   KXP (Dec 12)

KXP Co is an e-business which trades solely over the internet. In the last year the company had sales of $15 million. All sales were on 30 days' credit to commercial customers.

Extracts from the company's most recent statement of financial position relating to working capital are as follows:

	$000
Trade receivables	2,466
Trade payables	2,220
Overdraft	3,000

In order to encourage customers to pay on time, KXP Co proposes introducing an early settlement discount of 1% for payment within 30 days, while increasing its normal credit period to 45 days. It is expected that, on average, 50% of customers will take the discount and pay within 30 days, 30% of customers will pay after 45 days, and 20% of customers will not change their current paying behavior.

KXP Co currently orders 15,000 units per month of Product Z, demand for which is constant. There is only one supplier of Product Z and the cost of Product Z purchases over the last year was $540,000. The supplier has offered a 2% discount for orders of Product Z of 30,000 units or more. Each order costs KXP Co $150 to place and the holding cost is 24 cents per unit per year.

KXP Co has an overdraft facility charging interest of 6% per year.

Required:

(a) **Calculate the net benefit or cost of the proposed changes in trade receivables policy and comment on your findings.**

(6 marks)

(b) **Calculate whether the bulk purchase discount offered by the supplier is financially acceptable and comment on the assumptions made by your calculation.**

(6 marks)

(c) **Discuss the factors to be considered in formulating a trade receivables management policy.**

(8 marks)

(20 marks)

11   **Plot (Dec 13)**

Plot Co sells both Product P and Product Q, with sales of both products occurring evenly throughout the year.

Product P
The annual demand for Product P is 300,000 units and an order for new inventory is placed each month. Each order costs $267 to place. The cost of holding Product P in inventory is 10 cents per unit per year. Buffer inventory equal to 40% of one month's sales is maintained.

Product Q
The annual demand for Product Q is 456,000 units per year and Plot Co buys in this product at $1 per unit on 60 days credit. The supplier has offered an early settlement discount of 1% for settlement of invoices within 30 days.

Other information
Plot Co finances working capital with short-term finance costing 5% per year. Assume that there are 365 days in each year.

Required:

(a)   Calculate the following values for Product P:
        (i)   The total cost of the current ordering policy;

                                                            (3 marks)

        (ii) The total cost of an ordering policy using the economic order quantity;
                                                            (3 marks)

        (iii) The net cost or saving of introducing an ordering policy using the economic order quantity.

                                                            (1 mark)

(b)   Discuss how invoice discounting and factoring can aid the management of trade receivables.

                                                            (6 marks)

(c)   Identify the objectives of working capital management and discuss the central role of working capital management in financial management.

                                                            (7 marks)

                                                            (20 marks)

12   Pangli (Mar 17)

It is the middle of December 20X6 and Pangli Co is looking at working capital management for January 20X7. Forecast financial information at the start of January 20X7 is as follows:

Inventory	$455,000
Trade receivables	$408,350
Trade payables	$186,700
Overdraft	$240,250

All sales are on credit and they are expected to be $3·5m for 20X6. Monthly sales are as follows:

November 20X6 (actual)	$270,875
December 20X6 (forecast)	$300,000
January 20X7 (forecast)	$350,000

Pangli Co has a gross profit margin of 40%. Although Pangli Co offers 30 days credit, only 60% of customers pay in the month following purchase, while the remaining customers take an additional month of credit.

Inventory is expected to increase by $52,250 during January 20X7.

Pangli Co plans to pay 70% of trade payables in January 20X7 and defer paying the remaining 30% until the end of February 20X7. All suppliers of the company require payment within 30 days. Credit purchases from suppliers during January 20X7 are expected to be $250,000.

Interest of $70,000 is due to be paid in January 20X7 on fixed rate bank debt. Operating cash outflows are expected to be $146,500 in January 20X7. Pangli Co has no cash and relies on its overdraft to finance daily operations. The company has no plans to raise long-term finance during January 20X7.

Assume that each year has 360 days.

Required:

(a) **Calculate the cash operating cycle of Pangli Co at the start of January 20X7.**

(2 marks)

   (i) **Calculate the overdraft expected at the end of January 20X7.**

(4 marks)

   (ii) **Calculate the current ratios at the start and end of January 20X7.**

(4 marks)

(b) **Discuss FIVE techniques that Pangli Co could use in managing trade receivables**

(10 marks)

(20 marks)

13   PZK (Dec 14)

PZK Co, whose home currency is the dollar, trades regularly with customers in a number of different countries. The company expects to receive €1,200,000 in six months' time from a foreign customer. Current exchange rates in the home country of PZK Co are as follows:

Spot exchange rate:	4·1780–4·2080 euros per $
Six-month forward exchange rate:	4·2302–4·2606 euros per $
Twelve-month forward exchange rate:	4·2825–4·3132 euros per $

Required:

(a) Calculate the loss or gain compared to its current dollar value which PZK Co will incur by taking out a forward exchange contract on the future euro receipt.

    A. Loss $3,520
    B. Gain $3,520
    C. Loss $3,880
    D. Gain $3,880

(b) Why taking out a forward exchange contract may be preferred by PZK Co to not hedging the future euro receipt.

    A. Because forward offers an opportunity to make profit
    B. Because forward offers a certainty to PZK for receipt in future
    C. Because forward exchange rate is the same as future spot exchange rate
    D. Because forward improves PZK liquidity

(c) If the interest rate in the home country of PZK Co is 4% per year, calculate the annual interest rate in the foreign customer's country implied by the spot exchange rate and the twelve-month forward exchange rate.

    A. 5.6%
    B. 6.1%
    C. 6.6%
    D. 7.1%

14   ZPS (Specimen Paper Sep 16)

ZPS Co, whose home currency is the dollar, took out a fixed-interest peso bank loan several years ago when peso interest rates were relatively cheap compared to dollar interest rates. ZPS Co does not have any income in pesos. Economic difficulties have now increased peso interest rates while dollar interest rates have remained relatively stable.

ZPS Co must pay interest on the dates set by the bank. A payment of 5,000,000 pesos is due in six months' time.

The following information is available:

Spot rate	12·500–12·582 pesos per $
Six-month forward rate	12·805–12·889 pesos per $

Interest rates which can be used by ZPS Co:

	Borrow	Deposit
Peso interest rates	10·0% per year	7·5% per year
Dollar interest rates	4·5% per year	3·5% per year

(i)   What is the dollar cost of a forward market hedge?

A $390,472
B $387,928
C $400,000
D $397,393

(ii) Which of the following is/are correct for both purchasing power parity theory and interest rate parity theory?

(1)   The theory holds in the long term rather than the short term
(2)   The exchange rate reflects the different cost of living in two countries
(3)   The currency of the country with the higher inflation rate will weaken against the other currency

A   2 and 3
B   1 and 2
C   1 and 3
D   1 only

(iii) What are the appropriate six-month interest rates for ZPS Co to use if the company hedges the peso payment using a money market hedge?

	Deposit rate	Borrowing rate
A	7·5%	4·5%
B	1·75%	5·0%
C	3·75%	2·25%
D	3·5%	10·0%

(iv) Which of the following methods are possible ways for ZPS Co to hedge its existing foreign currency risk?

(1) Matching receipts and payments
(2) Currency swaps
(3) Leading or lagging
(4) Currency futures

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

(v) ZPS Co also trades with companies in Europe which use the Euro as their home currency. In three months' time ZPS Co will receive €300,000 from a customer.

Which of the following is the correct procedure for hedging this receipt using a money market hedge?

A Step 1 Borrow an appropriate amount in Euro now
   Step 2 Convert the Euro amount into dollars
   Step 3 Place the dollars on deposit
   Step 4 Use the customer payment to repay the loan

B Step 1 Borrow an appropriate amount in dollars now
   Step 2 Place the dollars on deposit now
   Step 3 Convert the dollars into Euro in three months' time
   Step 4 Use the customer payment to repay the loan

C Step 1 Borrow an appropriate amount in dollars now
   Step 2 Convert the dollar amount into Euro
   Step 3 Place the Euro on deposit
   Step 4 Use the customer payment to repay the loan

D Step 1 Borrow an appropriate amount in Euro now
   Step 2 Place the Euro on deposit now
   Step 3 Convert the Euro into dollars in three months' time
   Step 4 Use the customer payment to repay the loan

15   Park Co (Dec 16)

Park Co is based in a country whose currency is the dollar ($). The company regularly imports goods denominated in euro (€) and regularly sells goods denominated in dinars. Two of the future transactions of the company are as follows:

Three months:	Paying €650,000 for imported goods
Six months:	Receiving 12 million dinars for exported capital goods

Park Co has the following exchange rates and interest rates available to it:

	Bid	Offer
Spot exchange rate (dinars per $1):	57·31	57·52
Six-month forward rate (dinars per $1):	58·41	58·64
Spot exchange rate (€ per $1):	1·544	1·552
Three-month forward rate (€ per $1):	1·532	1·540

Six-month interest rates:		
	Borrow	Deposit
Dinars	4.0%	2.0%
Dollars	2.0%	0.5%

The finance director of Park Co believes that the upward-sloping yield curve reported in the financial media means that the general level of interest rates will increase in the future, and therefore expects the reported six-month interest rates to increase.

i)   What is the future dollar value of the dinar receipt using a money market hedge?

     A. $197,752
     B. $201,602
     C. $208,623
     D. $210,629

ii) Park Co will find which of the following hedges to be effective in hedging the foreign currency risk of the two transactions.
     1. Leading the euro payment on its imported goods;
     2. Taking out a forward exchange contract on its future dinar receipt
     3. Buying a tailor-made currency option for it future euro payment

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

iii) Which hedging methods will assist Park Co in reducing its overall foreign currency risk?

(1)	Taking out a long-term euro-denominated loan
(2)	Taking out a dinar-denominated overdraft

    A. 1 only
    B. 2 only
    C. Both 1 and 2
    D. Neither 1 nor 2

iv) Which of the following statements are/is correct?
    1. Purchasing power parity can be used to predict the forward exchange rate;
    2. The international Fisher effect can be used to predict the real interest rate

    A. 1 only
    B. 2 only
    C. Both 1 and 2
    D. Neither 1 nor 2

v) Which of the following statements is consistent with an upward-sloping yield curve?

    A. The risk of borrowers defaulting on their loans increases with the duration of the lending
    B. Liquidity preference theory implies that short-term interest rates contain a premium over long-term interest rates to compensate for lost liquidity
    C. Banks are reluctant to lend short-term, while government debt repayments have significantly increased the amount of long-term funds available
    D. The government has increased short-term interest rates in order to combat rising inflation in the economy

16   Chad (Jun 15)

Chad Co is a stock-market-listed company which has managed to increase earnings over the last year. As a result, the board of directors has increased the dividend payout ratio from 40·0% for the year to March 2014 to 41·4% for the year to March 2015. Chad Co has a cost of equity of 12·5%. The following information is also available:

Year to March	2014	2015
	$000	$000
Earnings	13,200	13,840
Ordinary shares	8,000	8,000

The nominal value of the ordinary shares of Chad Co is $0·50 per share. Listed companies similar to Chad Co have an earnings yield of 8·2%.

Required:

(a) Calculate the equity market value of Chad Co using the dividend growth model.

    A. $156.2 million

    B. $159.4 million

    C. $163.7 million

    D. $168.8 million

(b) Calculate the equity market value of Chad Co using the earnings yield method.

    A. $156.2 million

    B. $159.4 million

    C. $163.7 million

    D. $168.8 million

(c) Which of the following statements are correct?

    I.   Dividend growth model (DGM) is preferred to earnings yield method (EYM) because it is profit-based valuation model

    II.   DGM values minority shareholding in a target company while EYM gives a value from perspective of the acquirer

    III.   Both DGM and EYM assume relevant variables, such as dividend growth rate and earnings yield will remain constant in future in perpetuity

    A.   I & II

    B.   I & III

    C.   II & III

    D.   All of the above

17   Gemlo (Dec 15)

Gemlo Co is a company listed on a large stock market. Extracts from its current statement of financial position are as follows:

	$m	$m
Equity		
Ordinary shares ($1 nominal)	15	
Reserves	153	
		168
Non-current liabilities		
6% Irredeemable loan notes	10	
7% Loan notes	12	
		22
		190

Gemlo Co is planning an expansion of existing business operations costing $10 million in the near future and is assessing its current financial position as part of preparing a business case in support of seeking new finance. The business expansion is expected to increase the profit before interest and tax of Gemlo Co by 20% in the first year.

The planned business expansion by Gemlo Co has already been announced to the stock market. Information on the expected increase in profit before interest and tax has not yet been announced and the company has not decided on how the expansion is to be financed.

The ordinary shares of the company are currently trading at $3·75 per share on an ex dividend basis. The irredeemable loan notes have a cost of debt of 7%. The 7% loan notes have a cost of debt of 6% and will be redeemed at a 5% premium to nominal value after seven years. The interest cover of Gemlo Co is 6 times.

Companies operating in the same business sector as Gemlo Co have an average debt/equity ratio of 40% on a market value basis and an average interest cover of 9 times.

Gemlo Co agrees with a bank that its business expansion will be financed by a new issue of 8% loan notes. The company then announces to the stock market both this financing decision and the expected increase in profit before interest and tax arising from the business expansion.

Required:

(a) **Calculate the debt/equity ratio of Gemlo Co based on market values.**

   A. 38.0%

   B. 38.5%

   C. 39.0%

   D. 39.5%

(b) **Assuming the stock market is semi-strong form efficient, what is share price of Gemlo Co right after the announcement?**

   A. No change in Gemio Co share prices as it has already reacted before announcement.

   B. No change as current price reflects only information available in past.

   C. Share prices will quickly react to the release of new information.

   D. Share prices will gradually move upon the release of new information to equilibrium.

18   Par (Sep 16)

Par Co currently has the following long-term capital structure:

	$m	$m
Equity finance		
Ordinary shares	30.0	
Reserves	38.4	
		68.4
Non-current liabilities		
Bank loans	15.0	
8% convertible loan notes	40.0	
5% redeemable preference shares	15.0	
		70.0
Total equity and liabilities		138.4

The 8% loan notes are convertible into eight ordinary shares per loan note in seven years' time. If not converted, the loan notes can be redeemed on the same future date at their nominal value of $100. Par Co has a cost of debt of 9% per year.

The ordinary shares of Par Co have a nominal value of $1 per share. The current ex dividend share price of the company is $10·90 per share and share prices are expected to grow by 6% per year for the foreseeable future. The equity beta of Par Co is 1·2.

(i)   The loan notes are secured on non-current assets of Par Co and the bank loan is secured by a floating charge on the current assets of the company.
        Which of the following shows the sources of finance of Par Co in order of the risk to the investor with the riskiest first?

        A. Redeemable preference shares, ordinary shares, loan notes, bank loan

        B. Ordinary shares, loan notes, redeemable preference shares, bank loan

        C. Bank loan, ordinary shares, redeemable preference shares, loan notes

        D. Ordinary shares, redeemable preference shares, bank loan, loan notes

(ii)   What is the conversion value of the 8% loan notes of Par

        Co after seven years?

        A $16·39

        B $111·98

        C $131·12

        D $71·72

(iii) Assuming the conversion value after seven years is $126·15, what is the current market value of the 8% loan notes of Par Co?

        A $115·20
        B $109·26
        C $94·93
        D $69·00

(iv) Which of the following statements relating to the capital asset pricing model is correct?

        A   The equity beta of Par Co considers only business risk

        B   The capital asset pricing model considers systematic risk and

unsystematic risk

        C   The equity beta of Par Co indicates that the company is more risky than

the   market as a whole

        D   The debt beta of Par Co is zero

(v) Which of the following statements are problems in using the price/earnings ratio method to value a company?

  1   It is the reciprocal of the earnings yield
  2   It combines stock market information and corporate information
  3   It is difficult to select a suitable price/earnings ratio
  4   The ratio is more suited to valuing the shares of listed companies

      (a) 1 and 2 only
      (b) 3 and 4 only
      (c) 1, 3 and 4 only
      (d) 1, 2, 3 and 4

Got it Pass eLearning Co.   **Revision Questions & Answers**
19   Financial Management Function

Q3 2014 Dec

(1) Which of the following statements are correct?

1. Maximising market share is an example of a financial objective
2. Shareholder wealth maximisation is the primary financial objective for a company listed on a stock exchange
3. Financial objectives should be quantitative so that their achievement can be measured

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

Q11 2014 Dec

(2) Which of the following is LEAST likely to fall within financial management?

A. The dividend payment to shareholders is increased
B. Funds are raised to finance an investment project
C. Surplus assets are sold off
D. Non-executive directors are appointed to the remuneration committee

Q12 2014 Dec

(3) Which of the following statements concerning profit are correct?

1. Accounting profit is not the same as economic profit
2. Profit takes account of risk
3. Accounting profit can be manipulated by managers

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

Q4 2015 Jun

(4) Which of the following statements is correct?

A   One of the problems with maximising accounting profit as a financial objective is that accounting profit can be manipulated
B   A target for a minimum level of dividend cover is a target for a minimum dividend payout ratio
C   The welfare of employees is a financial objective
D   One reason shareholders are interested in earnings per share is that accounting profit takes account of risk

Q8 2015 Jun

(5) Which of the following statements are correct?

i)   Share option schemes always reward good performance by managers
ii) Performance-related pay can encourage dysfunctional behaviour
iii) Value for money as an objective in not-for-profit organisations requires the pursuit of economy, efficiency and effectiveness

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

Q5 2016 Specimen

(6) Which of the following actions is LEAST likely to increase shareholder wealth?
A   The weighted average cost of capital is decreased by a recent financing decision
B   The financial rewards of directors are linked to increasing earnings per share
C   The board of directors decides to invest in a project with a positive NPV
D   The annual report declares full compliance with the corporate governance code

Q9 2016 Specimen

(7) Which of the following statements concerning financial management are correct?

1.   It is concerned with investment decisions, financing decisions and dividend decisions
2.   It is concerned with financial planning and financial control
3.   It considers the management of risk

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

Q10 2016 Sep

(8) Which of the following would you expect to be the responsibility of financial management?

A.   Producing annual accounts
B.   Producing monthly management accounts
C.   Advising on investment in non-current assets
D.   Deciding pay rates for staff

Q14 2016 Dec

(9) Which of the following statements is true?
A.   Value for money is usually taken to mean economy, efficiency and engagement
B.   Cum dividend means the buyer of the share is not entitled to receive the dividend shortly to be paid
C.   The dividend payout ratio compares the dividend per share with the market price per share
D.   The agency problem means that shareholder wealth is not being maximized.

Example 1 2017 Sep

(10) Geeh Co paid an interim dividend of $0.06 per ordinary share on 31 October 20X6 and declared a final dividend of $0.08 on 31 December 20X6. The ordinary shares in Geeh Co are trading at a cum-div price of $1.83.

What is the dividend yield (to one decimal place of a percentage point)?

20.   Financial Management Environment

Q2 2014 Dec

(1) Which of the following statements is/are correct?

1   Securitisation is the conversion of illiquid assets into marketable securities
2   The reverse yield gap refers to equity yields being higher than debt yields
3   Disintermediation arises where borrowers deal directly with lending individuals

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

Q20 2014 Dec

(2) Which of the following is/are usually seen as forms of market failure where regulation may be a solution?

A.   Imperfect competition
B.   Social costs or externalities
C.   Imperfect information

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

Q1 2015 Jun

(3) Which of the following statements is/are correct?

1   Monetary policy seeks to influence aggregate demand by increasing or decreasing the money raised through taxation
2   When governments adopt a floating exchange rate system, the exchange rate is an equilibrium between demand and supply in the foreign exchange market
3   Fiscal policy seeks to influence the economy and economic growth by increasing or decreasing interest rates

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

Got it Pass eLearning Co.   Revision Questions & Answers

Q3 2015 Jun

(4) The following information relates to a company:

Year	0	1	2	3
Earnings per share (cents)	30·0	31·8	33·9	35·7
Dividends per share (cents)	13·0	13·2	13·3	15·0
Share price at start of year ($)	1·95	1·98	2·01	2·25

Which of the following statements is correct?

A   The dividend payout ratio is greater than 40% in every year in the period
B   Mean growth in dividends per share over the period is 4%
C   Total shareholder return for the third year is 26%
D   Mean growth in earnings per share over the period is 6% per year

Q9 2015 Jun

(5) Which of the following are financial intermediaries?

1   Venture capital organisation
2   Pension fund
3   Merchant bank

1.   2 only
2.   1 and 3 only
3.   2 and 3 only
4.   1, 2 and 3

Q11 2015 Jun

(6) Which of the following statements are correct?

1   Capital market securities are assets for the seller but liabilities for the buyer
2   Financial markets can be classified into exchange and over-the-counter markets
3   A secondary market is where securities are bought and sold by investors

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

Q12 2015 Jun

(7) Which of the following statements are correct?

1   A certificate of deposit is an example of a money market instrument
2   Money market deposits are short-term loans between organisations such as banks
3   Treasury bills are bought and sold on a discount basis

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

Q6 2016 Specimen

(8) Which of the following statements are features of money market instruments?

A. A negotiable security can be sold before maturity
B. The yield on commercial paper is usually lower than that on treasury bills
C. Discount instruments trade at less than face value

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

Q13 2016 Specimen

(9) Which of the following is/are usually seen as benefits of financial intermediation?
1) Interest rate fixing
2) Risk pooling
3) Maturity transformation

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

Q15 2016 Specimen

(10) Governments have a number of economic targets as part of their monetary policy.

Which of the following targets relate predominantly to monetary policy?

1 Increasing tax revenue
2 Controlling the growth in the size of the money supply
3 Reducing public expenditure
4 Keeping interest rates low

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

Q2 2016 Sep

(11) Which of the following financial instruments will NOT be traded on a money market?

A. Commercial paper
B. Convertible loan notes
C. Treasury bills
D. Certificates of deposit

Q13 2016 Sep

(12) Which of the following government actions would lead to an increase in aggregate demand?

1 Increasing taxation and keeping government expenditure the same
2 Decreasing taxation and increasing government expenditure
3 Decreasing money supply
4 Decreasing interest rates

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

Q2 2016 Dec

(13)Which TWO of the following activities are carried out by a financial intermediary?
A. Transforming interest rates
B. Transforming foreign exchange
C. Transforming maturity
D. Transforming risk

Q6 2016 Dec

(14)Max Co is a large multinational company which expects to have a $10m cash deficit in one month's time. The deficit is expected to last no more than two months.

Max Co wishes to resolve its short-term liquidity problem by issuing an appropriate instrument on the money market.

Which of the following instruments should Max Co issue?

○

Commercial paper

○

Interest rate futures

○

Corporate loan notes

○

Treasury bills

Q12 2016 Dec

(15)**Indicate, by clicking on the relevant boxes, whether the following statements are true or false?**

A prospective merger would need to result in a company having a market share greater than 80% before it can be described as a monopoly	TRUE	FALSE
A government may intervene to weaken its country's exchange rate in order to eliminate a balance of payments deficit	TRUE	FALSE
A relatively high rate of domestic inflation will lead to a strengthening currency	TRUE	FALSE
Government fiscal policy involves the management of interest rates	TRUE	FALSE

Q16 Example 2 2017 Jun

Which of the following statements relating to money markets is/are true?

1)   Lending is for periods of greater than one year
2)   Lending is securitised
3)   Borrowers are mainly small companies

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

Q17 Example 2 2017 Sep

What role would the money market have in a letter of credit arrangement?

A   Initial arrangement of the letter of credit
B   Acceptance of the letter of credit
C   Issuing of a banker's acceptance
D   Discounting the banker's acceptance

21   Working Capital Management

Q10 2014 Dec

Which of the following statements concerning working capital management are correct?

(1) Working capital should increase as sales increase
(2) An increase in the cash operating cycle will decrease profitability
(3) Overtrading is also known as under-capitalisation

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

Q13 2014 Dec

(2) A company has annual credit sales of $27 million and related cost of sales of $15 million. The company has the   following targets for the next year:

Trade receivables days	**50 days**
Inventory days	**60 days**
Trade payables	**45 days**

Assume there are 360 days in the year.

What is the net investment in working capital required for the next year?

A $8,125,000
B $4,375,000
C $2,875,000
D $6,375,000

Q15 2015 Jun

(3) A company needs $150,000 each year for regular payments. Converting the company's short-term investments into cash to meet these regular payments incurs a fixed cost of $400 per transaction. These short-term investments pay interest of 5% per year, while the company earns interest of only 1% per year on cash deposits.

According to the Baumol Model, what is the optimum amount of short-term investments to convert into cash in each transaction?

A $38,730
B $48,990
C $54,772
D $63,246

Q16 2015 Jun

(4) **Which of the following statements is/are correct?**

1   Factoring with recourse provides insurance against bad debts
2   The expertise of a factor can increase the efficiency of trade receivables management for a company

A   2 only
B   1 only
C   Neither 1 nor 2
D   1 and 2

Q8 2016 Specimen

(5) The management of XYZ Co has annual credit sales of $20 million and accounts receivable of $4 million. Working capital is financed by an overdraft at 12% interest per year. Assume 365 days in a year.

What is the annual finance cost saving if the management reduces the collection period to 60 days?

A $85,479
B $394,521
C $78,904
D $68,384

Q12 2016 Specimen

(6) The following information has been calculated for A Co:

Trade receivables collection period:	52 days
Raw material inventory turnover period:	42 days
Work in progress inventory turnover period:	30 days
Trade payables payment period:	66 days
Finished goods inventory turnover period:	45 days

What is the length of the working capital cycle?
  A.   103 days
  B.   131 days
  C.   235 days
  D.   31 days

Q14 2016 Specimen

(7) **Which of the following statements concerning working capital management are correct?**

1)   The twin objectives of working capital management are profitability and liquidity
2)   A conservative approach to working capital investment will increase profitability
3)   Working capital management is a key factor in a company's long-term success

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

Q3 2016 Sep

(8) Andrew Co is a large listed company financed by both equity and debt.

In which of the following areas of financial management will the impact of working capital management be smallest?

    A   Liquidity management
    B   Interest rate management
    C   Management of relationship with the bank
    D   Dividend policy

Q5 2016 Sep

(9) Crag Co has sales of $200m per year and the gross profit margin is 40%. Finished goods inventory days vary throughout the year within the following range:

	Maximum	Minimum
Inventory (days)	120	90

All purchases and sales are made on a cash basis and no inventory of raw materials or work in progress is carried. Crag Co intends to finance permanent current assets with equity and fluctuating current assets with its overdraft.

In relation to finished goods inventory and assuming a 360-day year, how much finance will be needed from the overdraft?

    A $10m
    B $17m
    C $30m
    D $40m

Q7 2016 Sep

(10) Pop Co is switching from using mainly long-term fixed rate finance to fund its working capital to using mainly short-term variable rate finance.

Which of the following statements about the change in Pop Co's working capital financing policy is true?

    A.   Finance costs will increase
    B.   Re-financing risk will increase
    C.   Interest rate risk will decrease
    D.   Overcapitalisation risk will decrease

Q1 2016 Dec

(11) **Which of the following is an advantage of implementing just-in-time inventory management?**

    A.   Quality control costs will be eliminated
    B.   Monthly finance costs incurred in holding inventory will be kept constant
    C.   The frequency of raw materials deliveries is reduced
    D.   The amount of obsolete inventory will be minimized

Q11 2016 Dec

(12) Mile Co is looking to change its working capital policy to match the rest of the industry. The following results are expected for the coming year:

	$'000
Revenue	20,500
Cost of sales	(12,800)
Gross profit	7,700

Revenue and cost of sales can be assumed to be spread evenly throughout the year.

The working capital ratios of Mile Co, compared with the industry, are as follows:

	Mile Co	Industry
Receivable days	50	42
Inventory days	45	35
Payable days	40	35

Assume there are 365 days in each year.

If Mile Co matches its working capital cycle with the industry, what will be the decrease in its net working capital?

A. $624,600
B. $730,100
C. $835,600
D. $975,300

Q15 2016 Dec

(13) Swap Co is due to receive goods costing $2,500. The terms of trade state that payment must be received within three months. However, a discount of 1.5% will be given for payment within one month.

Which of the following is the annual percentage cost of ignoring the discount and paying within three months?

A. 6.23%
B. 9.34%
C. 6.14%
D. 9.49%

22   Investment Appraisal

Q1 2014 Dec

(1) TKQ Co has just paid a dividend of 21 cents per share and its share price one year ago was $3·10 per share. The total shareholder return for the year was 19·7%.

What is the current share price?

A. $3·50
B. $3·71
C. $3·31
D. $3·35

Q6 2014 Dec

(2) Which of the following statements is correct?

A   Tax allowable depreciation is a relevant cash flow when evaluating borrowing to buy compared to leasing as a financing choice

B   Asset replacement decisions require relevant cash flows to be discounted by the after-tax cost of debt

C   If capital is rationed, divisible investment projects can be ranked by the profitability index when determining the optimum investment schedule

D   Government restrictions on bank lending are associated with soft capital rationing

Q7 2014 Dec

(3) An investment project has a cost of $12,000, payable at the start of the first year of operation. The possible future cash flows arising from the investment project have the following present values and associated probabilities:

PV of Year 1 cash flow ($)	Probability	PV of Year 2 cash flow ($)	Probability
16,000	0·15	20,000	0·75
12,000	0·60	(2,000)	0·25
(4,000)	0·25		

What is the expected value of the net present value of the investment project?

A $11,850
B $28,700
C $11,100
D $76,300

Q5 2015 Jun

(4) Which of the following statements is NOT correct?

A.   Return on capital employed can be defined as profit before interest and tax divided by the sum of shareholders' funds and prior charge capital

B.   Return on capital employed is the product of net profit margin and net asset turnover

C.   Dividend yield can be defined as dividend per share divided by the ex dividend share price

D.   Return on equity can be defined as profit before interest and tax divided by shareholders' funds

Q6 2015 Jun

(5) Which of the following statements are correct?

1   The sensitivity of a project variable can be calculated by dividing the project net present value by the present value of the cash flows relating to that project variable

2   The expected net present value is the value expected to occur if an investment project with several possible outcomes is undertaken once

3   The discounted payback period is the time taken for the cumulative net present value to change from negative to positive

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

Q2 2016 Specimen

(6) The following financial information relates to an investment project:

	$'000
Present value of sales revenue	50,025
Present value of variable costs	25,475
Present value of contribution	24,550
Present value of fixed costs	18,250
Present value of operating income	6,300
Initial investment	5,000
Net present value	1,300

What is the sensitivity of the net present value of the investment project to a change in sales volume?

A   7·1%
B   2·6%
C   5·1%
D   5·3%

Got it Pass eLearning Co.

Q14 2016 Sep

(7) Peach Co's latest results are as follows:

	$000
Profit before interest and taxation	2,500
Profit before taxation	2,250
Profit after tax	1,400

In addition, extracts from its latest statement of financial position are as follows:

	$000
Equity	10,000
Non-current liabilities	2,500

What is Peach Co's return on capital employed (ROCE)?

A   14%
B   18%
C   20%
D   25%

Q9 2016 Dec

(8) Green Co, a listed company, had the following share prices during the year ended 31 December 20X5:

At start of 20X5	$2.50
Highest price in the year	$3.15
Lowest price in the year	$2.40
At end of 20X5	$3.00

During the year, Green Co paid a total dividend of $0.15 per share.

What is the total shareholder return for 20X5?

A. 26%
B. 22%
C. 32%
D. 36%

23   Business Finance

Q5 2014 Dec

(1) Which of the following statements is correct?

A. A bonus issue can be used to raise new equity finance
B. A share repurchase scheme can increase both earnings per share and gearing
C. Miller and Modigliani argued that the financing decision is more important than the dividend decision
D. Shareholders usually have the power to increase dividends at annual general meetings of a company

Q15 2014 Dec

(2) Which of the following statements is/are correct?

1. An increase in the cost of equity leads to a fall in share price
2. Investors faced with increased risk will expect increased return as compensation
3. The cost of debt is usually lower than the cost of preference shares

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

Q7 2015 Jun

(3) Which of the following statements is/are correct?

1   The asset beta reflects both business risk and financial risk
2   Total risk is the sum of systematic risk and unsystematic risk
3   Assuming that the beta of debt is zero will understate financial risk when ungearing an equity beta

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

Q19 2015 Jun

(4) On a market value basis, GFV Co is financed 70% by equity and 30% by debt. The company has an after-tax cost of debt of 6% and an equity beta of 1·2. The risk-free rate of return is 4% and the equity risk premium is 5%.

What is the after-tax weighted average cost of capital of

GFV Co?

A   5·4%
B   **7·2%**
C   8·3%
D   8·8%

Q4 2016 Specimen

(5) Which of the following statements concerning capital structure theory is correct?

A. In the traditional view, there is a linear relationship between the cost of equity and financial risk
B. Modigliani and Miller said that, in the absence of tax, the cost of equity would remain constant
C. Pecking order theory indicates that preference shares are preferred to convertible debt as a source of finance
D. Business risk is assumed to be constant as the capital structure changes

Q7 2016 Specimen

	$000
Sales Income	60,000
Cost of Sales	50,000
Profit before interest and tax	10,000
Interest	4,000
Profit before tax	6,000
Tax	4,500
Profit after tax	1,500

60% of the cost of sales is variables costs.

(6) What is the operational gearing of CQB Co?
  A. 5·0 times
  B. 2·0 times
  C. 0·5 times
  D. 3·0 times

Q8 2016 Sep

(7) In relation to an operating lease, which of the following statements is correct?

A.   All the risks and rewards of ownership transfer to the lessee
B.   The asset and lease obligation will be recorded in the statement of financial position
C.   The lease period will cover almost all of the leased asset's useful economic life
D.   The lessor will be responsible for repairs and maintenance of the leased asset

Q15 2016 Sep
  (8) Drumlin Co has $5m of $0·50 nominal value ordinary shares in issue. It recently announced a 1 for 4 rights issue at $6 per share. Its share price on the announcement of the rights issue was $8 per share.

  What is the theoretical value of a right per existing share?
  A. $1·60
  B. $0·40
  C. $0·50
  D. $1·50

Q3 2016 Dec
  (9) Frost Co is planning a 1 for 4 rights issue with an issue price at a 10% discount to the current share price.

The EPS is currently $0.50 and the shares of Frost Co are trading on a price/earnings ratio of 20 times. The market capitalisation of the company is $50m.

What is the theoretical ex rights price per share (to two decimal places)?

$ [   ]

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Q5 2016 Dec

(10)Select the correct term to complete the below sentence.

Small and medium-sized entities (SME) have restricted access to capital markets. The difference between the finance required to operate an SME and the amount obtained is known as the

- A. Forecasted gap
- B. Maturity gap
- C. Funding gap
- D. Asset gap

Q10 2016 Dec

(11) Carp Co has announced that it will pay an annual dividend equal to 55% of earnings. Its earnings per share is $0.80, and it has ten million shares in issue. The return on equity of Carp Co is 20% and its current cum dividend share price is $4.60.

What is the cost of equity of Carp Co?

- **A.** 19.4%
- **B.** 20.5%
- **C.** 28.0%
- **D.** 22.7%

Example 1 2017 Jun

(12)Black Co has an issue 5% irredeemable loan notes, nominal value of $100 per loan note, on which interest is shortly to be paid. Black Co has a before-tax cost of debt of 10% and corporation tax is 30%.

What is the current market value of one loan note?
- **A.** $55
- **B.** $50
- **C.** $76
- **D.** $40

24   Business Valuation

Q9 2014 Dec
(1) A company has 7% loan notes in issue which are redeemable in seven years' time at a 5% premium to their nominal value of $100 per loan note. The before-tax cost of debt of the company is 9% and the after-tax cost of debt of the company is 6%.

What is the current market value of each loan note?

        A. $92·67
        B. $108·90
        C. $89·93
        D. $103·14

Q14 2014 Dec
(2) An investor believes that they can make abnormal returns by studying past share price movements.

In terms of capital market efficiency, to which of the following does the investor's belief relate?

   A.   Fundamental analysis
   B.   Operational efficiency
   C.   Technical analysis
   D.   Semi-strong form efficiency

Q17 2014 Dec

(3) The following are extracts from the statement of financial position of a company:

	$000	$000
Equity		
Ordinary shares		8,000
Reserves	20,000	
		28,000
Non-current liabilities		
Bonds	4,000	
Bank loans	6,200	
Preference shares	2,000	
		12,200
Current liabilities		
Overdraft	1,000	
Trade payables		1,500
		2,500
Total equities and liabilities		42,700

The ordinary shares have a nominal value of 50 cents per share and are trading at $5·00 per share. The preference shares have a nominal value of $1·00 per share and are trading at 80 cents per share. The bonds have a nominal value of $100 and are trading at $105 per bond.

What is the market value based gearing of the company, defined as prior charge capital/equity?
A.   15·0%
B.   13·0%
C.   11·8%
D.   7·3%

Q19 2014 Dec

(4) A company has just paid an ordinary share dividend of 32·0 cents and is expected to pay a dividend of 33·6 cents in one year's time. The company has a cost of equity of 13%.

What is the market price of the company's shares to the nearest cent on an ex dividend basis?
A. $3·20
B. $4·41
C. $2·59
D. $4·20

Q10 2015 Jun

(5) A company has in issue loan notes with a nominal value of $100 each. Interest on the loan notes is 6% per year, payable annually. The loan notes will be redeemed in eight years' time at a 5% premium to nominal value. The before-tax cost of debt of the company is 7% per year.

What is the ex interest market value of each loan note?

A. $94·03
B. $96·94
C. $102·91
D. $103·10

Q18 2015 Jun

(6) Which of the following statements are correct?

1   If a capital market is weak form efficient, an investor cannot make abnormal returns by using technical analysis
2   Operational efficiency means that efficient capital markets direct funds to their most productive use
3   Tests for semi-strong form efficiency focus on the speed and accuracy of share price responses to the arrival of new information

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

Q20 2015 Jun

(7) The following financial information relates to QK Co, whose ordinary shares have a nominal value of $0·50 per share:

	$m	$m
Non-current assets		120
Current assets		
Inventory	8	
Trade receivables	12	20
Total assets		140
Equity		
Ordinary shares	25	
Reserves	80	105
Non-current liabilities		20
Current liabilities		15
Total equities and liabilities		140

On an historic basis, what is the net asset value per share of QK Co?
  A. $2.10 per share
  B. $2.50 per share
  C. $2.80 per share
  D. $4.20 per share

Q3 2016 Specimen

(8) Gurdip plots the historic movements of share prices and uses this analysis to make her

investment decisions. Oliver believes that share prices reflect all relevant information at all times.

To what extent do Gurdip and Oliver believe capital markets to be efficient?

	Gurdip	**Oliver**
A	Not efficient at all	Strong form efficient
B	Weak form efficient	Strong form efficient
C	Not efficient at all	Semi-strong form efficient

D   Strong form efficient   Not efficient at all

Q10 2016 Specimen

(9) SKV Co has paid the following dividends per share in recent years:

Year	20X4	20X3	20X2	20X1
Dividend ($ per share)	0·360	0·338	0·328	0·311

The dividend for 20X4 has just been paid and SKV Co has a cost of equity of 12%.

Using the geometric average historical dividend growth rate and the dividend growth model, what is the market price of SKV Co shares on an ex dividend basis?

A $4·67
B $5·14
C $5·40
D $6·97

Q1 2016 Sep

(10) The owners of a private company wish to dispose of their entire investment in the company. The company has an issued share capital of $1m of $0·50 nominal value ordinary shares. The owners have made the following valuations of the company's assets and liabilities.

Non-current assets (book value)	**$30m**
Current assets	**$18m**
Non-current liabilities	**$12m**
Current liabilities	**$10m**

The net realisable value of the non-current assets exceeds their book value by $4m. The current assets include $2m of accounts receivable which are thought to be irrecoverable.

What is the minimum price per share which the owners should accept for the company?

A $14
B $25
C $28
D $13

Q9 2016 Sep

(11) A company has annual after-tax operating cash flows of $2 million per year which are expected to continue in perpetuity. The company has a cost of equity of 10%, a before-tax cost of debt of 5% and an after-tax weighted average cost of capital of 8% per year. Corporation tax is 20%.

What is the theoretical value of the company?

A. $20m
B. $40m
C. $50m
D. $25m

Q11 2016 Sep

(12) Lane Co has in issue 3% convertible loan notes which are redeemable in five years' time at their nominal value of $100 per loan note. Alternatively, each loan note can be converted in five years' time into 25 Lane Co ordinary shares. The current share price of Lane Co is $3·60 per share and future share price growth is expected to be 5% per year. The before-tax cost of debt of these loan notes is 10% and corporation tax is 30%.

What is the current market value of a Lane Co convertible loan note?
A. $82·71
B. $73·47
C. $67·26
D. $94·20

Q4 2016 Dec

(13) Indicate, by clicking on the relevant boxes, whether the following statements are true or false in relation to business valuation.

The earnings yield method and the dividend growth model should give similar values for a company	TRUE	FALSE
Market capitalisation represents the maximum value for a company	TRUE	FALSE
The price/earnings ratio is the reciprocal of the earnings yield	TRUE	FALSE
The price/earnings ratio should be increased if the company being valued is riskier than the valuing company	TRUE	FALSE

Q7 2016 Dec

(14) In relation to capital markets, which of the following statements is true?

A. The return from investing in larger companies has been shown to be greater than the average return from all companies
B. Weak form efficiency arises when investors tend not to make rational investment decisions
C. Allocative efficiency means that transaction costs are kept to a minimum
D. Research has shown that, overtime, share prices appear to follow a random walk

25   Risk Management

Q4 2014 Dec

(1) A company whose home currency is the dollar ($) expects to receive 500,000 pesos in six months' time from a customer in a foreign country. The following interest rates and exchange rates are available to the company:

	Spot rate	15·00 peso per $
	Six-month forward rate	15·30 peso per $

	Home country	Foreign country
Borrowing interest rate	4% per year	8% per year
Deposit interest rate	3% per year	6% per year

Working to the nearest $100, what is the six-month dollar value of the expected receipt using a money-market hedge?

A $32,500
B $33,700
C $31,800
D $31,900

Q8 2014 Dec

(2) Which of the following statements is correct?

A   Once purchased, currency futures have a range of close-out dates
B   Currency swaps can be used to hedge exchange rate risk over longer periods than the forward market
C   Banks will allow forward exchange contracts to lapse if they are not used by a company
D   Currency options are paid for when they are exercised

Q18 2014 Dec

(3) Which of the following statements is correct?

A   Governments may choose to raise interest rates so that the level of general expenditure in the economy will increase
B   The normal yield curve slopes upward to reflect increasing compensation to investors for being unable to use their cash now
C   The yield on long-term loan notes is lower than the yield on short-term loan notes because long-term debt is less risky for a company than short-term debt
D   Expectations theory states that future interest rates reflect expectations of future inflation rate movements

Q2 2015 Jun

(4) Which of the following statements are correct?

1   The general level of interest rates is affected by investors' desire for a real return
2   Market segmentation theory can explain kinks (discontinuities) in the yield curve
3   When interest rates are expected to fall, the yield curve could be sloping downwards

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

Q14 2015 Jun

(5) Which of the following statements are correct?

1   Interest rate options allow the buyer to take advantage of favourable interest rate movements
2   A forward rate agreement does not allow a borrower to benefit from a decrease in interest rates
3   Borrowers hedging against an interest rate increase will buy interest rate futures now and sell them at a future date

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

Q17 2015 Jun

(6) An investor plans to exchange $1,000 into euros now, invest the resulting euros for 12 months, and then exchange the euros back into dollars at the end of the 12-month period. The spot exchange rate is €1·415 per $1 and the euro interest rate is 2% per year. The dollar interest rate is 1·8% per year.

Compared to making a dollar investment for 12 months, at what 12-month forward exchange rate will the investor make neither a loss nor a gain?

    A. €1.223 per $1
    B. €1.412 per $1
    C. €1.418 per $1
    D. €1.439 per $1

Q1 2016 Specimen

(7) The home currency of ACB Co is the dollar ($) and it trades with a company in a foreign country whose home currency is the Dinar. The following information is available:

	Home country	Foreign country
Spot rate	20·00 Dinar per $	
Interest rate	3% per year	7% per year
Inflation rate	2% per year	5% per year

What is the six-month forward exchange rate?
A. **20.39 Dinar per $**
B. **20.30 Dinar per $**
C. **20.59 Dinar per $**
D. **20.78 Dinar per $**

Q11 2016 Specimen

(8) 'There is a risk that the value of our foreign currency-denominated assets and liabilities will change when we prepare our accounts'

To which risk does the above statement refer?

    A. **Translation risk**

    B. **Economic risk**

    C. **Transaction risk**

    D. **Interest rate risk**

Q4 2016 Sep

(9) Which of the following are descriptions of basis risk?

1. It is the difference between the spot exchange rate and currency futures exchange rate
2. It is the possibility that the movements in the currency futures price and spot price will be different
3. It is the difference between fixed and floating interest rates
4. It is one of the reasons for an imperfect currency futures hedge

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

Q6 2016 Sep

(10) In relation to an irredeemable security paying a fixed rate of interest, which of the following

statements is correct?

A. As risk rises, the market value of the security will fall to ensure that investors receive an increased yield
B. As risk rises, the market value of the security will fall to ensure that investors receive a reduced yield
C. As risk rises, the market value of the security will rise to ensure that investors receive an increased yield
D. As risk rises, the market value of the security will rise to ensure that investors receive a reduced yield

Q12 2016 Sep

(11) Country X uses the dollar as its currency and country Y uses the dinar.

Country X's expected inflation rate is 5% per year, compared to 2% per year in country Y. Country Y's nominal interest rate is 4% per year and the current spot exchange rate between the two countries is 1·5000 dinar per $1.

According to the four-way equivalence model, which of the following statements is/are true?

1) Country X's nominal interest rate should be 7·06% per year
2) The future (expected) spot rate after one year should be 1·4571 dinar per $1
3) Country X's real interest rate should be higher than that of country Y

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

Q8 2016 Dec

(12) The following data is available:

Country Y currency	Dollar
Country X currency	Peso
Country Y interest rate	1% per year
Country X interest rate	3% per year
Country X expected inflation rate	2% per year
Spot exchange rate in Country Y	1.60 peso per $1

What is the current six-month forward exchange rate in Country Y (to two decimal places)?

⎡   ⎤   **peso per $1**

Q13 2016 Dec

(13)**Indicate, by clicking on the relevant boxes, whether the following statements about interest rate risk hedging are correct or incorrect?**

An interest rate floor can be used to hedge an expected increase in interest rates	CORRECT	INCORRECT
The cost of an interest rate floor is higher than the cost of an interest rate collar	CORRECT	INCORRECT
The premium on an interest rate option is payable when it is exercised	CORRECT	INCORRECT
The standardised nature of interest rate futures means that over- and under-hedging can be avoided	CORRECT	INCORRECT

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Revision Answers

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1 PV

(a) (i) **Calculation of NPV**

Year	0	1	2	3	4
	$	$	$	$	$
Investment	(2,000,000)				
Income		1,236,000	1,485,400	2,622,000	1,012,950
Operating costs		676,000	789,372	1,271,227	620,076
Net cash flow	(2,000,000)	560,000	696,028	1,350,773	392,874
Discount at 10%	1·000	0·909	0·826	0·751	0·683
Present values	(2,000,000)	509,040	574,919	1,014,430	268,333

Net present value: $366,722

Workings

Calculation of income

Year	1	2	3	4
Inflated selling price ($/unit)	20·60	21·22	21·85	22·51
Demand (units/year)	60,000	70,000	120,000	45,000
Income ($/year)	1,236,000	1,485,400	2,622,000	1,012,950

Calculation of operating costs

Year	1	2	3	4
Inflated variable cost ($/unit)	8·32	8·65	9·00	9·36
Demand (units/year)	60,000	70,000	120,000	45,000
Variable costs ($/year)	499,200	605,500	1,080,000	421,200
Inflated fixed costs ($/year)	176,800	183,872	191,227	198,876
Operating costs ($/year)	676,000	789,372	1,271,227	620,076

Alternative calculation of operating costs

Year	1	2	3	4
Variable cost ($/unit)	*8*	*8*	*8*	*8*
Demand (units/year)	*60,000*	*70,000*	*120,000*	*45,000*
Variable costs ($/year)	*480,000*	*560,000*	*960,000*	*360,000*
Fixed costs ($/year)	*170,000*	*170,000*	*170,000*	*170,000*
Operating costs ($/year)	*650,000*	*730,000*	*1,130,000*	*530,000*
Inflated costs ($/year)	*676,000*	*789,568*	*1,271,096*	*620,025*

(ii) Calculation of internal rate of return

Year	0	1	2	3	4
	$	$	$	$	$
Net cash flow	(2,000,000)	560,000	696,028	1,350,773	392,874
Discount at 20%	1·000	0·833	0·694	0·579	0·482
Present values	(2,000,000)	466,480	483,043	782,098	189,365

Net present value: ($79,014)

Internal rate of return = 10 + ((20 – 10) x 366,722)/(366,722 + 79,014) = 10 + 8·2 = 18·2%

(iii) *Calculation of return on capital employed*

Total cash inflow = 560,000 + 696,028 + 1,350,773 + 392,874 = $2,999,675

Total depreciation and initial investment are same, as

there is no scrap value. Total accounting profit =

2,999,675 – 2,000,000 = $999,675

Average annual accounting profit =

999,675/4 = $249,919 Average

investment = 2,000,000/2 =

$1,000,000

Return on capital employed = 100 x 249,919/1,000,000 = 25%

(b) The investment proposal has a positive net present value (NPV) of $366,722 and is therefore financially acceptable. The results of the other investment appraisal methods do not alter this financial acceptability, as the NPV decision rule will always offer the correct investment advice.

The internal rate of return (IRR) method also recommends accepting the investment proposal, since the IRR of 18·2% is greater than the 10% return required by PV Co. If the advice offered by the IRR method differed from that offered by the NPV method, the advice offered by the NPV method would be preferred.

The calculated return on capital employed of 25% is less than the target return of 30%, but as indicated earlier, the investment proposal is financially acceptable as it has a positive NPV. The reason why PV Co has a target return on capital employed of 30% should be investigated. This may be an out-of-date hurdle rate which has not been updated for changed economic circumstances.

(c) As a large listed company, PV Co's primary financial objective is assumed to be the maximisation of shareholder wealth. In order to pursue this objective, PV Co should undertake projects, such as this one, which have a positive NPV and generate additional value for shareholders.

However, not all of PV Co's stakeholders have the same objectives and the acceptance of this project may create conflict between the different objectives.

Due to Product W33 being produced using an automated production process, it will not meet employees' objectives of continuity or security in their employment. It could also mean employees will be paid less than they currently earn. If this move is part of a longer-term move away from manual processes, it could also conflict with government objectives of having a low rate of unemployment.

The additional noise created by the production of Product W33 will affect the local community and may conflict with objectives relating to healthy living. This may also conflict with objectives from environmental pressure groups and government standards on noise levels as well.

2 Degnis

(a) **Calculation of NPV over four years**

Year	1	2	3	4
	$000	**$000**	**$000**	**$000**
Sales income	12,525	15,030	22,545	22,545
Conversion cost	(7,913)	(9,495)	(14,243)	(14,243)
Contribution	4,612	5,535	8,302	8,302
Fixed costs	(4,000)	(5,000)	(5,500)	(5,500)
Before-tax cash flow	612	535	2,802	2,802
Tax liability at 28%	(171)	(150)	(785)	(785)
Tax allowable depreciation benefits	112	112	112	112
After-tax cash flow	553	497	2,129	2,129
Discount at 11%	0·901	0·812	0·731	0·659
Present values	498	404	1,556	1,403

	$000
Sum of present values	3,861
Initial investment	4,000
NPV	**(139)**

Workings

Average selling price = (30,000 x 0·20) + (42,000 x 0·45) + (72,000 x 0·35) = $50,100 per unit Average conversion cost = (23,000 x 0·20) + (29,000 x 0·45) + (40,000 x 0·35) = $31,650 per unit

Year	1	2	3	4
Sales volume (units/year)	250	300	450	450
Average selling price ($/unit)	50,100	50,100	50,100	50,100
Sales income ($000/year)	12,525	15,030	22,545	22,545

Year	1	2	3	4
Sales volume (units/year)	250	300	450	450
Average conversion cost ($/unit)	31,650	31,650	31,650	31,650
Conversion cost ($000/year)	7,913	9,495	14,243	14,243

Contribution may be calculated directly, with small rounding differences. Average contribution = 50,100 − 31,650 = $18,450 per unit.

Year	1	2	3	4
Sales volume (units/year)	250	300	450	450
Average contribution ($/unit)	18,450	18,450	18,450	18,450
Contribution ($000/year)	4,613	5,535	8,303	8,303

Tax allowable depreciation = 4,000,000/10 = $400,000 per year
Benefit of tax allowable depreciation = 400,000 x 0·28 = $112,000 per year

(b) Ignoring tax allowable depreciation, after-tax cash flow from year five onwards will be:
2,802,000 − 785,000 = $2,017,000 per year

Present value of this cash flow in perpetuity = (2,017,000/0·11) x 0·659 = $12,083,664

There would be a further six years of tax benefits from tax allowable depreciation. The present value of these cash flows would be 112,000 x 4·231 x 0·659 = $312,282.

Increase in NPV of production and sales continuing beyond the first four years would be 12,083,664 + 312,282 = $12,395,946 or approximately $12·4 million.
If only the first four years of operation are considered, the NPV of the planned investment is negative and so it would not be financially acceptable. If production and sales beyond the first four years are considered,

the NPV is strongly positive and so the planned investment is financially acceptable. In fact, the NPV of the planned investment becomes positive if only one further year of operation is considered:

NPV = (2,129,000 x 0·593) – 139,000 = 1,262,497 – 139,000 = $1,123,497

(c)
Risk in investment appraisal refers to a range of outcomes whose probability of occurrence can be quantified. Risk can therefore be distinguished from uncertainty in investment appraisal, where the likelihood of particular outcomes occurring cannot be quantified.

As regards incorporating risk into investment appraisal, probability analysis can be used to calculate the values of possible outcomes and their probability distribution, the value of the worst possible outcome and its probability, the probability that an investment will generate a positive NPV, the standard deviation of the possible outcomes and the expected value (mean value) of the NPV. Standard deviation is a measure of risk in financial management.

One difficulty with probability analysis is its assumption that an investment can be repeated a large number of times. The expected value of the NPV, for example, is a mean or average value of a number of possible NPVs, while standard deviation is a measure of dispersal of possible NPVs about the expected (mean) NPV. In reality, many investment projects cannot be repeated and so only one of the possible outcomes will actually occur. The expected (mean) value will not actually occur, causing difficulties in applying and interpreting the NPV decision rule when using probability analysis.

Another difficulty with probability analysis is the question of how the probabilities of possible outcomes are assessed and calculated. One method of determining probabilities is by considering and analysing the outcomes of similar investment projects from the past. However, this approach relies on the weak assumption that the past is an acceptable guide to the future. Assessing probabilities this way is also likely to be a very subjective process.

3 Dysxa

(a)

NPV calculation

Year	1	2	3	4	5
	$000	$000	$000	$000	$000
Sales revenue	2,712	2,797	2,882	2,967	
Variable costs	(995)	(1,054)	(1,114)	(1,182)	
Contribution	1,717	1,743	1,768	1,785	
Fixed costs	(110)	(205)	(330)	(330)	
Taxable cash flow	1,607	1,538	1,438	1,455	
Taxation at 20%		(321)	(308)	(288)	(291)
TAD tax benefits		160	120	90	270
After-tax cash flow	1,607	1,377	1,250	1,257	(21)
Discount at 10%	0.909	0.826	0.751	0.683	0.621
Present values	1,461	1,137	939	859	(13)

	$000
PV of future cash flows	4,383
Initial investment	(3,200)
NPV	1,183

Comment

The NPV is positive and so the investment project is financially acceptable.

Workings

Sales revenue

Year	1	2	3	4
Selling price ($/unit)	3.10	3.10	3.10	3.10
Inflated at 3% per year	3.19	3.29	3.39	3.49
Sales volume (000 units/year)	850	850	850	850
Sales revenue ($000/year)	2,712	2,797	2,882	2,967

Variable cost

Year	1	2	3	4
Variable cost ($/unit)	1.10	1.10	1.10	1.10
Inflated at 6% per year	1.17	1.24	1.31	1.39
Sales volume (000 units/year)	850	850	850	850
Variable cost ($000/year)	995	1,054	1,114	1,182

Year	1	2	3	4
TAD ($000)	800	600	450	1,350
Tax benefits ($000)	160	120	90	270*

*(3,200 x 0.2) – 160 – 120 – 90 = $270,000

Alternative calculation of after-tax cash flow

Year	1	2	3	4	5
	$000	$000	$000	$000	$000
Taxable cash flow	1,607	1,538	1,438	1,455	
TAD	(800)	(600)	(450)	(1,350)	
Taxable profit	807	938	988	105	
Taxation at 20%		(161)	(188)	(198)	(21)
After-tax profit	807	777	800	(93)	(21)
Add back TAD	800	600	450	1,350	
After-tax cash flow	1,607	1,377	1,250	1,257	

(b)

Analysis of profitability indexes

Project	Initial investment	Net present value	Profitability index*	Rank
A	$3,000,000	$6,000,000	2.0	2nd
B	$2,000,000	$3,200,000	1.6	4th
C	$1,000,000	$1,700,000	1.7	Excluded
D	$1,000,000	$2,100,000	2.1	1st
E	$2,000,000	$3,600,000	1.8	3rd

*NPV divided by initial investment

Optimum investment schedule

Project	Initial investment	Rank	Net present value	
D	$1,000,000	1st	$2,100,000	
A	$3,000,000	2nd	$6,000,000	
E	$2,000,000	3rd	$3,600,000	
B	$1,000,000	4th	$1,600,000	($3.2m x $1m/$2m)
	$7,000,000		**$13,300,000**	

The NPV of the optimum investment schedule for Delta Division is $13.3 million.

Marking Scheme:

		Marks
(b)	Calculating profitability indexes	1
	Formulating optimum investment schedule	1
	NPV of optimum investment schedule	1
		3

(c)

Capital rationing can be divided into hard capital rationing, which is externally imposed, or soft capital rationing, which is internally imposed.

Soft capital rationing

Investment capital may be limited internally because a company does not want to take on a commitment to increased fixed interest payments, for example, if it expects future profitability to be poor. A company may wish to avoid diluting existing earnings per share or changing existing patterns of ownership and control by issuing new equity. A company may limit investment funds because it wishes to pursue controlled growth rather than rapid growth. Given the uncertainty associated with forecasting future cash flows, a company may limit investment funds in order to create an internal market where investment projects compete for finance, with only the best investment projects being granted approval.

Hard capital rationing

External reasons for capital rationing can be related to risk and to availability of finance. Providers of finance may see a company as too risky to invest in, perhaps because it is highly geared or because it has a poor record or poor prospects in terms of profitability or cash flow.

Long-term finance for capital investment may have limited availability because of the poor economic state of the economy, or because there is a banking crisis.

Marking Scheme:

		Marks
(c)	Soft capital rationing	2
	Hard capital rationing	2
	Additional detail	1
		5

(d)

The risk of an investment project could be assessed by using probability analysis or by using the capital asset pricing model (CAPM).

Probability analysis

Project risk can be assessed or quantified by attaching probabilities to expected investment project outcomes. At an overall level, this could be as simple as attaching probabilities to two or more expected scenarios, for example, associated with different economic states. Key project variables might then take different values depending on the economic state.

At the level of individual project variables, probability distributions of values could be found through expert analysis, and the probability distributions and relationships between variables then built into a simulation model. This model could then be used to generate a probability distribution of expected project outcomes in terms of net present values. Project risk could then be measured by the standard deviation of the expected net present value.

CAPM

The systematic business risk of an investment project can be assessed by identifying a proxy company in a similar line of business. The equity beta of the proxy company can then be ungeared to give the asset beta of the company, which reflects systematic business risk alone as the effect of the systematic financial risk of the proxy company is removed by the ungearing process. The asset beta can then be regeared to reflect the systematic financial risk of the investing company, giving an equity beta which reflects the systematic risk of the investment project.

Marking Scheme:

		Marks
(d)	Risk assessment method 1	2
	Risk assessment method 2	2
		4

4 Spot

(a)

In order to evaluate whether Spot Co should use leasing or borrowing, the present value of the cost of leasing is compared with the present value of the cost of borrowing.

Leasing

The lease payments should be discounted using the cost of borrowing of Spot Co. Since taxation must be ignored, the before-tax cost of borrowing must be used. The 7% interest rate of the bank loan can be used here.

The five lease payments will begin at year 0 and the last lease payment will be at the start of year 5, i.e. at the end of year 4. The appropriate annuity factor to use will therefore be 4·387 (1·000 + 3·387).

Present value of cost of leasing = 155,000 x 4·387= $679,985

Borrowing

The purchase cost and the present value of maintenance payments will be offset by the present value of the future scrap value. The appropriate discount rate is again the before-tax cost of borrowing of 7%

Year	Cash flow	$	7% Discount factor	Present value ($)
0	Purchase	(750,000)	1·000	(750,000)
1–5	Maintenance	(20,000)	4·100	(82,000)
5	Scrap value	75,000	0·713	53,475

Present value of cost of borrowing = 750,000 + 82,000 – 53,475 = $778,525

The cheaper source of financing is leasing, since the present value of the cost of leasing is $98,540 less than the present value of the cost of borrowing.

(b)

Operating leasing can act as a source of short-term finance, while finance leasing can act as a source of long-term finance.

Operating leasing offers a solution to the obsolescence problem, whereby rapidly aging assets can decrease competitive advantage. Where keeping up-to-date with the latest technology is essential for business operations, operating leasing provides equipment on short-term contracts which can usually be cancelled without penalty to the lessee. Operating leasing can also provide access to skilled maintenance, which might otherwise need to be bought in by the lessee, although there will be a charge for this service.

Both operating leasing and finance leasing provide access to non-current assets in cases where borrowing may be difficult or even not possible for a company. For example, the company may lack assets to offer as security, or it may be seen as too risky to lend to. Since ownership of the leased asset remains with the lessor, it can be retrieved if lease rental payments are not forthcoming.

(c)

There are several reasons which can be discussed in explaining why interest rates may differ between loans of different maturity, as follows:

Liquidity preference theory

This theory suggests that investors prefer to have cash now and so require compensation for lending money. The longer the period for which money is lent, the higher will be the interest rate to compensate the lender for deferring their use of the loaned cash. The higher interest rate for long-term debt over short-term debt will also compensate lenders for increasing risk over time, for example, the increasing risk of default with increasing maturity. Liquidity preference theory can therefore explain why the yield curve is normally upward sloping.

Expectations theory

This theory suggests that the relationship between short-term and long-term interest rates can be explained by expectations regarding interest rate movements. Where future interest rates are expected to rise compared to short-term interest rates, the yield curve will slope upwards. Where future interest rates are expected to fall compared to short-term interest rates, the yield curve will slope downwards.

Market segmentation theory

The reason why interest rates may differ between loans of different maturity could be because the balance between supply and demand differs between markets for loans of different maturity. If demand for long-term loans is greater than the supply, for example, because of a high public sector borrowing requirement, interest rates in the long-term loan market will increase to restore equilibrium between demand and supply. Differing interest rates between markets for loans of different maturity can also explain why the yield curve may not be smooth, but kinked.

Fiscal policy

Governments may use fiscal policy to support the achievement of economic objectives. For example, the government or central bank may act to increase short-term interest rates in order to reduce inflation. This can result in short-term interest rates being higher than long-term interest rates, an effect which can be compounded if there is a decrease in the anticipated inflation reflected in long-term interest rates.

5 Fence

i) A

Payback period = 2 + (1,200/1,600) = 2·75 years

ii) B

Average annual accounting profit = (5,880 –
3,800)/4 = $520,000 per year Average investment
= (3,900 + 100)/2 = $2,000,000
ROCE = 100 x 520/2,000 = 26%

iii) D

Payback period ignores the timing of cash flows within the payback period is correct.

iv) D

All the statements are correct.

v) C

Introducing a share option scheme would help bring directors' objectives in line with shareholders' objectives and linking financial rewards to a target return on capital employed will encourage short-term profitability and discourage capital investment are correct.

6   Link

   i) B   100 x 511/3,880 = 13.2%

   ii) A   Sensitivity Analysis does not assess the risk of a project (probability analysis does).

   iii) C

       Annual operating cash flow = $729,000
       Annual depreciation = 1,800,000/4 = $450,000
       Annual profit = 729,000 - 450,000 = $279,000
       Average investment = 1,800,000/2 = $900,000
       ROCE = 279,000/900,000 x 100 = 31%

   iv) C   A new issue of loan notes takes place in the primary market.

   v) D   All three statements are correct

7 Card

(a) Cost of equity of Card Co using DGM

The average dividend growth rate in recent years
is 4%: $(62 \cdot 0/55 \cdot 1)^{0 \cdot 333} - 1 = 1 \cdot 040 - 1 = 0 \cdot 04$ or
4% per year

Using the dividend growth model:
$K_e = 0 \cdot 04 + [(62 \times 1 \cdot 04)/716] = 0 \cdot 04 + 0 \cdot 09 = 0 \cdot 13$ or 13%

(b) The dividend growth model calculates the apparent cost of equity in the capital market, provided that the current market price of the share, the current dividend and the future dividend growth rate are known. While the current market price and the current dividend are readily available, it is very difficult to find an accurate value for the future dividend growth rate. A common approach to finding the future dividend growth rate is to calculate the average historic dividend growth rate and then to assume that the future dividend growth rate will be similar. There is no reason why this assumption should be true.

The capital asset pricing model tends to be preferred to the dividend growth model as a way of calculating the cost of equity as it has a sound theoretical basis, relating the cost of equity or required return of well-diversified shareholders to the systematic risk they face through owning the shares of a company. However, finding suitable values for the variables used by the capital asset pricing model (risk-free rate of return, equity beta and equity risk premium) can be difficult.

(c) First, the proxy company equity beta must be ungeared:

Asset beta = $(1 \cdot 038 \times 0 \cdot 75)/(0 \cdot 75 + (0 \cdot 25 \times 0 \cdot 7)) = 0 \cdot 842$

The asset beta must then be regeared to reflect the

financial risk of Card Co: Equity beta = $0 \cdot 842 \times (57{,}280$

$+ (5{,}171 \times 0 \cdot 7))/57{,}280 = 0 \cdot 895$

Project-specific cost of equity = $4 + (0 \cdot 895 \times 5) = 8 \cdot 5\%$

(d) The value of a company can be expressed as the present value of its future cash flows, discounted at its weighted average cost of capital (WACC). The value of a company can therefore theoretically be maximised by minimising its WACC. If the WACC depends on the capital structure of a company, i.e. on the balance between debt and equity, then the minimum WACC will arise when the capital structure is optimal.

The idea of an optimal capital structure has been debated for many years. The traditional view of capital structure suggests that the WACC decreases as debt is introduced at low levels of gearing, before reaching a minimum and then increasing as the cost of equity responds to increasing financial risk.

Miller and Modigliani originally argued that the WACC is independent of a company's capital structure, depending only on its business risk rather than on its financial risk. This suggestion that it is not possible to minimise the WACC, and hence that it is not possible to maximise the value of a company by selecting a particular capital structure, depends on the assumption of a perfect capital market with no corporate taxation.

However, real world capital markets are not perfect and companies pay taxes on profit. Since interest is a tax-allowable deduction in calculating taxable profit, debt is a tax-efficient source of finance and replacing equity with debt will decrease the WACC of a company. In the real world, therefore, increasing gearing will decrease the WACC of a company and hence increase its value.

At high levels of gearing, the WACC of a company will increase due, for example, to increasing bankruptcy risk. Therefore, it can be argued that use of debt in a company's capital structure can reduce its WACC and increase its value, provided that gearing is kept to an acceptable level.

8   Dinla

(a) Cost of equity

The dividend growth model can be used to calculate the cost of equity. $K_e = ((0.25 \times 1.04)/4.26) + 0.04 = 10.1\%$

Cost of preference shares

$K_p = (0.05 \times 1.00)/0.56 = 8.9\%$

Cost of debt of loan notes

After-tax annual interest payment = $6 \times (1 - 0.25) = 6 \times 0.75 = \$4.50$ per year

Year	Cash Flow ($)	5% discount	PV ($)	6% discount	PV ($)
0	(95·45)	1·000	(95·45)	1·000	(95·45)
1–5	4·50	4·329	19·48	4·212	18·95
5	100·00	0·784	78·40	0·747	74·70
			2·43		**(1·80)**

After-tax cost of debt of loan notes = $K_d = 5 + (1 \times 2.43)/(2.43 + 1.80) = 5 + 0.57 = 5.6\%$

Cost of debt of bank loan

The after-tax fixed interest rate of the bank loan can be used as its cost of debt. This will be 5·25% (7 x 0·75). Alternatively, the after-tax cost of debt of the loan notes can be used as a substitute for the after-tax cost of debt of the bank loan.

Market values

Equity: 4·26 x (23,000,000/0·25) =	391,920
Preference shares: 0·56 x (5,000,000/1·00) =	2,800
Loan notes: 95·45 x (11,000,000/100) =	10,500
Bank loan	3,000
	408,220

After tax weighted average cost of capital
((10·1 x 391,920) + (8·9 x 2,800) + (5·6 x 10,500) + (5·25 x 3,000))/408,220 = 9·9%

4)   The creditor hierarchy refers to the order in which financial claims against a company are settled when the company is liquidated. The hierarchy, in order of decreasing priority, is secured creditors, unsecured creditors, preference shareholders and ordinary shareholders. The risk of not receiving any cash in a liquidation increases as priority decreases. Secured creditors (secured debt) therefore face the lowest risk as providers of finance and ordinary shareholders face the highest risk.

The return required by a provider of finance is related to the risk faced by that provider of finance. Secured creditors therefore have the lowest required rate of return and ordinary shareholders have the highest required rate of return. The cost of debt should be less than the cost of preference shares, which should be less than the cost of equity.

5) Wealth creation in Islamic finance requires that risk and reward, in terms of economic benefit, are shared between the provider of finance and the user of finance. Economic benefit includes wider economic goals such as increasing employment and social welfare. Conventional finance, which refers to finance which is not based on Islamic principles and which has historically been used in the financial system, does not require the sharing of risks and rewards between the provider of finance (the investor) and the user of finance.

Interest (*riba*) is absolutely forbidden in Islamic finance and is seen as immoral. This can be contrasted with debt in conventional finance, where interest is seen as the main form of return to the debt holder, and with the attention paid to interest rates in the conventional financial system, where interest is the reward for depositing funds and the cost of borrowing funds.

Islamic finance can only support business activities which are acceptable under Sharia law.

Murubaha and *sukuk* are forms of Islamic finance which can be compared to conventional debt finance. Unlike conventional debt finance, however, *murubaha* and *sukuk* must have a direct link with underlying tangible assets.

9 Gadner

(a)

Cost of equity
Using the CAPM, k_e = 4 + (1.25 x 5.6) = 11.0%

Cost of capital of 10% irredeemable preference shares
Preference share dividend = 0.1 x 0.5 = $0.05 per share
Cost of preference shares = 100 x 0.05/0.55 = 9.1%

Cost of debt of loan notes
After-tax interest cost = 8 x 0.8 = $6.40 per $100 loan note

Year	Cash flow	$	5% discount	PV ($)	6% discount	PV ($)
0	market value	(108·29)	1·000	(108·29)	1·000	(108·29)
1–6	interest	6·40	5·076	32·49	4·917	31·47
6	redemption	105·00	0·746	78·33	0·705	74·03
				2·53		(2·79)

After-tax k_d = IRR = 5 + (1 x 2.53)/(2.53 + 2.79) = 5 + 0.5 = 5.5%

Cost of debt of bank loan
The after-tax interest cost can be used as k_d, i.e. 7 x 0.8 = 5.6%.
Alternatively, the after-tax cost of debt of the loan notes can be used as a substitute.

Appropriate values of the sources of finance

	$000
Market value of equity = $6.35 x (8m/0.2) =	254,000
Market value of preference shares = 0.55 x (2m/0.5) =	2,200
Market value of loan notes = $108.29 x (6m/100) =	6,497
Book value of debt	2,000
Total market value of sources of finance	264,697

Calculation of WACC
WACC = [(11 x 254,000) + (9.1 x 2,200) + (5.5 x 6,497) + (5.6 x 2,000)]/264,697 = 10.8%

(b)

Business risk in financial management relates to the variability of shareholder returns which arises from business operations.

It can be measured from a statement of profit or loss perspective by operational gearing, which considers the relative importance of fixed and variable operating costs in relation to operating profit (PBIT). One definition of operational gearing is contribution/profit before interest and tax or PBIT. Business risk is not influenced by the way in which a company is financed, that is, it is not influenced by the capital structure of a company.

Financial risk relates to the variability of shareholder returns which arises from the way in which a company finances itself, that is, from its capital structure. It can be measured from a balance sheet perspective by gearing (financial gearing, debt/equity ratio, debt ratio) and from a statement of profit or loss perspective by interest cover and income gearing.

The combination of business risk and financial risk is referred to as total risk.

Marking Scheme:

		Marks
(b)	Nature of business risk	2
	Nature of financial risk	2
		4

(c)

Pre-emptive right of shareholders

In order to preserve the balance of ownership and control in a company, existing shareholders have a right to be offered new shares before they are offered to other buyers. This is known as the pre-emptive right and an offer of new shares to existing shareholders is consequently referred to as a rights issue.

Rights issue price and cum rights price

The price at which the new shares are offered to existing shareholders is called the rights issue price. The share price following the announcement of the rights issue is called the cum rights price and the rights issue price is at a discount to this price.

Theoretical ex rights price

The share price after the rights issue has taken place is called the theoretical ex rights price. This is a weighted average of the cum rights price and the rights issue price. The weighting arises from what is called the form of the rights issue, e.g. a 1 for 5 issue would allow an existing shareholder to buy one new share for every five shares already held.

Neutral effect on shareholder wealth

If issue costs and the use or application of the rights issue funds is ignored, then, theoretically, rights issue have a neutral effect on shareholder wealth. The rights issue transfers cash from existing shareholders to the company in exchange for shares, so the shareholder will see cash wealth replaced by ordinary share wealth. The theoretical ex rights price, rather than the cum rights price, is therefore a benchmark for assessing the effect on shareholder wealth of the use or application to which the rights issue funds are put.

Balance of ownership and control

Providing existing shareholders buy the shares to which they are entitled, there is no change in the balance of ownership and control in a company. Relative voting rights are therefore preserved.

Underwriting

In order to ensure that a company receives the funds it needs, rights issues are underwritten as a form of insurance. Shares which are not taken up by existing shareholders will be taken up, for a fee, by the underwriters.

10 KXP

(a)

Calculation of net cost/benefit

Current receivables = $2,466,000

Receivables paying within 30 days = 15m x 0·5 x 30/365 = $616,438

Receivables paying within 45 days = 15m x 0·3 x 45/365 = $554,795

Receivables paying within 60 days = 15m x 0·2 x 60/365 = $493,151

Revised receivables = 616,438 + 554,795 + 493,151 = $1,664,384

Reduction in receivables = 2,466,000 – 1,664,384 = $801,616

Reduction in financing cost = 801,616 x 0·06 = $48,097

Cost of discount = 15m x 0·5 x 0·01 = $75,000

Net cost of proposed changes in receivables policy = 75,000 – 48,097 = $26,903

Alternative approach to calculation of net cost/benefit

Current receivables days = (2,466/15,000) x 365 = 60 days
Revised receivables days = (30 x 0·5) + (45 x 0·3) + (60 x 0·2) = 40·5 days
Decrease in receivables days = 60 – 40·5 = 19·5 days

Decrease in receivables = 15m x 19·5/365 = $801,370
(The slight difference compared to the earlier answer is due to rounding)

Decrease in financing cost = 801,370 x 0·06 = $48,082
Net cost of proposed changes in receivables policy = 75,000 – 48,082 = $26,918

Comment

The proposed changes in trade receivables policy are not financially acceptable. However, if the trade terms offered are comparable with those of its competitors, KXP Co needs to investigate the reasons for the (on average) late payment of current customers. This analysis also assumes constant sales and no bad debts, which is unlikely to be the case in reality.

(b)

Cost of current inventory policy

Cost of materials = $540,000 per year
Annual ordering cost = 12 x 150 = $1,800 per year
Annual holding cost = 0·24 x (15,000/2) = $1,800 per year

Total cost of current inventory policy = 540,000 + 1,800 + 1,800 = $543,600 per year

Cost of inventory policy after bulk purchase discount

Cost of materials after bulk purchase discount = 540,000 x 0·98 = $529,200 per year
Annual demand = 12 x 15,000 = 180,000 units per year

KXP Co will need to increase its order size to 30,000 units to gain the bulk discount
Revised number of orders = 180,000/30,000 = 6 orders per year

Revised ordering cost = 6 x 150 = $900 per year
Revised holding cost = 0·24 x (30,000/2) = $3,600 per year

Revised total cost of inventory policy = 529,200 + 900 + 3,600 = $533,700 per year

Evaluation of offer of bulk purchase discount

Net benefit of taking bulk purchase discount = 543,600 – 533,700 = $9,900 per year

The bulk purchase discount looks to be financially acceptable. However, this evaluation is based on a number of unrealistic assumptions. For example, the ordering cost and the holding cost are assumed to be constant, which is unlikely to be true in reality. Annual demand

is assumed to be constant, whereas in practice seasonal and other changes in demand are likely.

(c)

The factors to be considered in formulating a trade receivables policy relate to credit analysis, credit control and receivables collection.

Credit analysis

In offering credit, a company must consider that it will be exposed to the risk of late payment and the risk of bad debts. To reduce these risks, the company will assess the creditworthiness of its potential customers. In order to do this, the company needs information, which can come from a variety of sources, such as trade references, bank references, credit reference agencies, published accounts and so on. As a result of assessing the creditworthiness of customers, a company can decide on the amount of credit to offer, the credit terms to offer, or whether to offer credit at all.

Credit control

Having extended credit to customers, a company needs to consider ways to ensure that the terms under which credit was granted are followed. It is important that customers settle outstanding accounts on time and keep to agreed credit limits. Factors to consider here are, therefore, the number of overdue accounts and the amount of outstanding cash. This information can be provided by an aged receivables analysis.

Another factor to consider is that customers need to be made aware of the amounts outstanding on their accounts and reminded when payment is due. This can be done by providing regular statements of account and by sending reminder letters when payment is due.

Receivables collection

Cash received needs to be banked quickly if payment is not made electronically by credit transfer. Overdue accounts must be followed up in order to assess the likelihood of payment and to determine what further action is needed. In the worst cases, legal steps may need to be taken in order to recover outstanding amounts.

A key factor to consider here is that the benefit gained from chasing overdue amounts must not exceed the costs incurred

11 Plot

(a) (i) Cost of current ordering policy

Ordering cost = 12 x 267 = $3,204 per year

Monthly order = monthly demand =
300,000/12 = 25,000 units Buffer inventory =
25,000 x 0·4 = 10,000 units
Average inventory excluding buffer inventory = 25,000/2 = 12,500 units
Average inventory including buffer inventory = 12,500 +
10,000 = 22,500 units Holding cost = 22,500 x 0·1 = $2,250
per year

Total cost = 3,204 + 2,250 = $5,454 per year

(ii) Cost of ordering policy using economic order quantity (EOQ)

$EOQ = ((2 \times 267 \times 300,000)/0·10)^{0·5} = 40,025$ or

40,000 units per order Number of orders per year

= 300,000/40,000 = 7·5 orders per year
Order cost = 7·5 x 267 = $2,003

Average inventory excluding buffer inventory = 40,000/2 = 20,000 units
Average inventory including buffer inventory = 20,000 +
10,000 = 30,000 units Holding cost = 30,000 x 0·1 = $3,000
per year

Total cost = $2,003 + $3,000 = $5,003 per year

(iii) Saving from introducing EOQ ordering policy = 5,454 – 5,003 = $451 per year

b) Product Q trade payables at end of year = 456,000 x 1 x 60/365 = $74,959
Product Q trade payables after discount = 456,000 x 1 x 0·99 x 30/365 = $37,105
Decrease in Product Q trade payables = 74,959 – 37,105 = $37,854
Increase in financing cost = 37,854 x 0·05 = $1,893 Value of discount = 456,000 x 0·01 = $4,560
Net value of offer of discount = 4,560 – 1,893 = $2,667

c) Invoice discounting refers to the purchase of selected invoices by a financial company at a discount to their face value. Invoice discounting can provide immediate cash to a company rather than waiting for the invoices to be settled. It tends to be used as an occasional source of short-term finance, rather than a regular source of cash. Invoice discounting can therefore aid in the management of trade receivables by accelerating cash inflow from trade receivables when short-term cash flow problems arise.

Factoring refers to a commercial arrangement whereby a financial company takes over the management of a company's trade receivables. This will include invoicing customers, accounting for sales and collections of amounts owed. Factors will advance cash to a company against the amounts outstanding. If the client requires, insurance against bad debts may also be provided (non-recourse factoring).

Factoring can assist in the management of trade receivables through the expertise offered by the factoring company. This may lead to a reduction in bad debts, a decrease in the level of trade receivables, a decrease in the amount of managerial time devoted to chasing slow payers, and taking advantage of early settlement discounts from trade suppliers due to the availability of cash from trade receivables.

d) The objectives of working capital management are usually taken to be profitability and liquidity. Profitability is allied to the financial objective of maximising shareholder wealth, while liquidity is needed in order to settle liabilities as they fall due. A company must have sufficient cash to meet its liabilities, since otherwise it may fail. However, these two objectives are in conflict, since liquid resources have no return or low levels of return and hence decrease profitability. A conservative approach to working capital management will decrease the risk of running out of cash, favouring liquidity over profitability and decreasing risk. Conversely, an aggressive approach to working capital management will emphasise profitability over liquidity, increasing the risk of running out of cash while increasing profitability.

Working capital management is central to financial management for several reasons. First, cash is the life-blood of a company's business activities and without enough cash to meet short-term liabilities, a company would fail. Second, current assets can account for more than half of a company's assets, and so must be carefully managed. Poor management of current assets can lead to loss of profitability and decreased returns to shareholders. Third, for SMEs current liabilities are a major source of finance and must be carefully managed in order to ensure continuing availability of such finance.

12 Pangli

(a)

(i)   The cash operating cycle can be calculated by adding inventory days and receivables days, and subtracting payables days.

Cost of sales = 3,500,000 x (1 – 0·4) =

$2,100,000 Inventory days = 360 x

455,000/2,100,000 = 78 days
Trade receivables days = 360 x
408,350/3,500,000 = 42 days Trade
payables days = 360 x 186,700/2,100,000 =
32 days

Cash operating cycle of Pangli Co = 78 + 42 – 32 = 88 days

(ii)   Inventory at end of January 20X7 = 455,000 + 52,250 = $507,250

At the start of January 20X7, 100% of December 20X6 receivables will be outstanding ($300,000), together with 40% of November 20X6 receivables ($108,350 = 40% x 270,875), a total of $408,350 as given.

Trade receivables at start of January 20X7	408,350
Outstanding November 20X6 receivables paid	(108,350)
December 20X6 receivables, 60% paid	(180,000)
January 20X7 credit sales	350,000
Trade receivables at end of January 20X7	470,000

	$
Trade payables at start of January 20X7	186,700
Payment of 70% of trade payables	(130,690)
January 20X7 credit purchases	250,000
Trade payables at end of January 20X7	306,010

	$
Overdraft at start of January 20X7	240,250
Cash received from customers	(288,350)
Cash paid to suppliers	130,690
Interest payment	70,000
Operating cash outflows	146,500
Overdraft expected at end of January 20X7	299,090

(iii)   Current assets at start of January 20X7 = 455,000 + 408,350 = $863,350 Current liabilities at start of January 20X7 = 186,700 + 240,250 = $426,950 Current ratio at start of January 20X7 = 863,350/426,950 = 2·03 times

Current assets at end of January 20X7 = 507,250 + 470,000 = $977,250 Current liabilities at end of January 20X7 = 306,010 + 299,090 = $605,100 Current ratio at end of January 20X7 = 977,250/605,100 = 1·62 times

(b)

Pangli Co could use the following techniques in managing trade receivables: assessing creditworthiness; managing accounts receivable; collecting amounts owing; offering early settlement discounts; using factoring and invoice discounting; and managing foreign accounts receivable.

Assessing creditworthiness

Pangli Co can seek to reduce its exposure to the risks of bad debt and late payment by assessing the creditworthiness of new customers. In order to do this, the company needs to review information from a range of sources. These sources include trade references, bank references, credit reference agencies and published accounts. To help it to review this information, Pangli Co might develop its own credit scoring process. After assessing the creditworthiness of new customers, Pangli Co can decide on how much credit to offer and on what terms.

Managing accounts receivable

Pangli Co needs to make sure that its credit customers abide by the terms of trade agreed when credit was granted following credit assessment. The company wants its customers to settle their outstanding accounts on time and also to keep to their agreed credit limits. Key information here will be the number of overdue accounts and the degree of lateness of amounts outstanding. An aged receivables analysis can provide this information.

Pangli Co also needs to make sure that its credit customers are aware of the outstanding invoices on their accounts. The company will therefore remind them when payment is due and regularly send out statements of account.

Collecting amounts owing

Ideally, credit customers will pay on time and there will be no need to chase late payers. There are many ways to make payment in the modern business world and Pangli Co must make sure that its credit customers are able to pay quickly and easily. If an account becomes overdue, Pangli Co must make sure it is followed up quickly. Credit control staff must assess whether payment is likely to be forthcoming and if not, a clear policy must be in place on further steps to take. These further steps might include legal action and using the services of a debt collection agency.

Offering early settlement discounts

Pangli Co can encourage its credit customers to settle outstanding amounts by offering an early settlement discount. This will offer a reduction in the outstanding amount (the discount) in exchange for settlement before the due date. For example, if the credit customer agreed to pay in full after 40 days, an early settlement discount might offer a 2% discount for settling after 25 days. Pangli Co must weigh the benefit of offering such an early settlement discount against the benefit expected to arise from its use by credit customers. One possible benefit might be a reduction in the amount of interest the company pays on its overdraft. Another possible benefit might be matching or bettering the terms of trade of a competitor.

Using factoring and invoice discounting

Pangli Co might use a factor to help manage its accounts receivable, either on a recourse or non-recourse basis. The factor could offer assistance in credit assessment, managing accounts receivable and collecting amounts owing. For a fee, the factor could advance a percentage of the face value of outstanding invoices. The service offered by the factor would be tailored to the needs of the company.

Invoice discounting is a service whereby a third party, usually a factor, pays a percentage of the face value of a collection of high value invoices. When the invoices are settled, the outstanding balance is paid to the company, less the invoice discounter's fee.

Managing foreign accounts receivable

Foreign accounts receivable can engender increased risk of non-payment by customers and can increase the value of outstanding receivables due to the longer time over which foreign accounts receivable are outstanding. Pangli Co could reduce the risk of non-payment by assessing creditworthiness, employing an export factor, taking out export credit insurance, using documentary credits and entering into countertrade agreements. The company could reduce the amount of investment in foreign accounts receivable through using techniques such as advances against collections and negotiating or discounting bills of exchange

Examiner's note: Only five techniques were required to be discussed.

13 PZK

(i) A

   The current dollar value of the future euro receipt = €1,200,000/4·2080 = $285,171

   If a forward contract is taken out, PZK Co can lock into the six-month forward exchange rate of

   4·2606 euros per dollar. Future dollar value using the forward contract = €1,200,000/4·2606

   = $281,651

   Loss using the forward contract = 285,171 – 281,651 = $3,520

(ii) B

   PZK Co may prefer the certainty offered by the forward exchange contract to the uncertainty of leaving the future euro receipt unhedged.

   In addition, the forward exchange rate is an unbiased estimator of the future spot exchange rate.

(iii) C

   The implied interest rate in the foreign country can be

   calculated using interest rate parity. From the formulae

   sheet, $F_0 = S_0 \times (1 + i_c)/(1 + i_b)$

   Hence 4·3132 = 4·2080 x (1 + i_c)/1·04

   Rearranging, (1 + i_c) = 4·3132 x 1·04/4·2080 = 1·066

   The implied annual interest rate in the foreign country is 6·6%.

14 ZPS

i) A

Interest payment = 5,000,000 pesos
Six-month forward rate for buying pesos = 12·805 pesos per $
Dollar cost of peso interest using forward market = 5,000,000/12·805 = $390,472

ii) D

Exchange rates reflecting the different cost of living between two countries is stated by the theory

of purchasing power parity. Both theories hold in the long term rather than the short term.

The currency of the country with the higher inflation rate will be forecast to weaken against the currency of the country with the lower inflation rate in purchasing power parity.

iii) C

Dollars will be borrowed now for six months at
4·5 x 6/12 = 2·25% Pesos will be deposited
now for six months at 7·5 x 6/12 = 3·75%

iv) C

Currency futures and swaps could both be used. As payment must be made on the date set by the bank, leading or lagging are not appropriate. Matching is also inappropriate as there are no peso income streams.

v) A

The correct procedure is to: Borrow euro now, convert the euro into dollars and place the dollars on deposit for three months, use the customer receipt to pay back the euro loan.

15 Park Co
- **i)** B   Dollar value = (12m x 1.005)/(1.04 x 57.52) = $201,602
- **ii)** All three hedges will allow Park Co to hedge its foreign currency risk.
- **iii)** B

  Only the dinar-denominated overdraft will be effective, by matching assets and liabilities. The long-term euro-denominated loan will increase payments to be made in euros and hence increase foreign currency risk.
- **iv)** Purchasing power parity predicts the future spot rate, not the forward exchange rate.

  The international Fisher effect does not predict real interest rates.
- **v)** A   If default risk increases with duration, compensation for default risk increases with time and hence the yield curve will slope upwards.

16 **Chad**
  (i) A

As the payout ratio has increased from 40·0% in the year to March 2014 to 41·4% in the year to March 2015, the total dividend has increased from $5,280,000 (13,200,000 x 0·4) for the year to March 2014 to $5,729,760 (13,840,000 x 0·414) for the year to March 2015. This represents dividend growth of 8·52% (5,729,760/5,280,000).

Provided the future dividend growth rate is expected to be similar to the historic dividend growth rate, the calculated dividend growth rate of 8·52% can be used in the dividend growth model.

The equity market value using the dividend growth model is therefore:
(5,729,760 x 1·0852)/(0·125 – 0·0852) = $156,229,537 or $156·2 million.

  (ii) D
        Equity market value using the earnings yield approach:
        Earnings/earnings yield = 13,840,000/0·082 = $168,780,488 or $168·8 million

  (iii) C
        II & III correct, for statement I, Cash-flow valuation models tend to be preferred to profit-based valuation models and so the dividend growth model (DGM) could be preferred to the earnings yield method (EYM) as DGM is cash-based valuation model.

17 Gemlo

    (i) B

Market value of equity = 15,000,000 x

3·75 = $56,250,000 Market value of each

irredeemable loan note = 6/0·07 = $85·71
Market value of irredeemable loan notes = 10,000,000 x 85·71/100 = $8,571,000

Market value of each 7% loan note = (7 x 5·582) + (105 x 0·665) = $39·074 + 69·825 = $108·90 Market value of 7% loan notes = 12,000,000 x 108·90/100 = $13,068,000

Total market value of debt = 8,571,000 + 13,068,000 = $21,639,000

Debt/equity ratio based on market values = 100 x 21,639,000/56,250,000 = 38·5%

    (ii) C
If the stock market on which Gemlo Co is listed is semi-strong form efficient, share prices on the stock market will quickly and accurately react to the release of new information.

18 Par

i) D

The secured loan notes are safer than the bank loan, which is secured on a floating charge. The redeemable preference shares are above debt in the creditor hierarchy. Ordinary shares are higher in the creditor hierarchy than preference shares.

ii) *C*

Future share price after seven years = 10·90 x
$1·06^7$ = $16·39 per share Conversion value of each loan note = 16·39 x 8 = $131·12 per loan note

iii) *B*

Market value of each loan note = (8 x 5·033) + (126·15 x 0·547) = 40·26 + 69·00 = $109·26

iv) *C*

An equity beta of greater than 1 indicates that the investment is more risky than the market as a whole.

v) *B*

It is correct that the price/earnings ratio is more suited to valuing the shares of listed companies, and it is also true that it is difficult to find a suitable price earnings ratio for the valuation.

19 Financial Management Function

(1) C

(2) D

(3) A

(4) A

(5) C

(6) B

Increases in shareholder wealth will depend on increases in cash flow, rather than increases in earnings per share, i.e. increases in profit. If the financial rewards of directors are linked to increasing earnings per share, for example, through a performance-related reward scheme, there is an incentive to increasing short-term profit at the expense of longer growth in cash flows and hence shareholder wealth.

(7) D

All three statements concerning financial management are correct.

(8) C

Advising on investments in non-current assets is a key role of financial management.

(9) D

It is correct that the agency problem means that shareholder wealth is not being maximised.

(10) 8%

The correct response is 8.0, as follows:
Dividend yield is a measure of the dividend from the last 12 months divided by the current ex-div
share price.
Dividend for the year = $0.08 + 0.06 = $0.14.
Ex-div share price = $1.83 - 0.08 = $1.75. ie with the forthcoming dividend stripped out
0.14/1.75 = 8%

20 Financial Management Environment

(1) B

(2) D

(3) A

(4) D
Mean growth in earnings per share = 100 x [(35·7/30·0)$^{1/3}$ – 1] = 5·97% or 6%

(5) D

(6) C

(7) D

(8) B

Both statements 1 and 3 are correct.

(9) C

Risk pooling and maturity transformation are always included in a list of benefits of financial intermediation.

(10) C

The two targets relating predominantly to monetary policy are controlling the growth in the size of the money supply and keeping interest rates low (2 and 4).

(11) B

Convertible loan notes are long-term finance and are not traded on a money market.

(12) C

Decreasing taxation and increasing government expenditure would lead to increased aggregate demand. Decreasing interest rates reduces the incentive to save and so would lead to an increase in aggregate demand.

(13) C&D
Financial intermediaries transform maturity and risk.

(14) Commercial paper
Commercial paper will be issued at a discount and then repaid at nominal value on the settlement date. It is short term and traded on the money market.

(15) It is true that a government may intervene to weaken its country's exchange rate in order to eliminate a balance of payments deficit.
The other statements are false.

(16) D
Statement (1) is incorrect as lending is for less than one year. Statement (3) is incorrect as money markets are used by large companies.

(17) D
A is incorrect as this would be done by the buying company's bank. B is incorrect as this would be done by the selling company's bank. C is incorrect as this is another role which would be undertaken would be done by the buying company's bank.

21 Working Capital Management

(1) D

(2) B

Inventory = 15,000,000 x 60/360 = $2,500,000
Trade receivables = 27,000,000 x 50/360
= $3,750,000 Trade payables =
15,000,000 x 45/360 = $1,875,000
Net investment required = 2,500,000 + 3,750,000 – 1,875,000 = $4,375,000

(3) C

Optimum cash conversion = $(2 \times 400 \times 150{,}000/(0{\cdot}05 - 0{\cdot}01))^{0{\cdot}5}$ = $54,772

(4) A

(5) A
Finance cost saving = 13/365 x $20m x 0·12 = $85,479

(6) A
The length of the operating cycle is 52 + 42 + 30 – 66 + 45 = 103 days.

(7) B
Both statements 1 and 3 are correct.

(8) D
Working capital management may have an impact on dividend policy, but the other areas will be more significant.

(9) A
$200m x 30/360 x 0·6 = $10m

(10) B
Pop Co is moving to an aggressive funding strategy which will increase refinancing risk.

(11) D
Obsolete inventory is minimised under just-in-time inventory management.

(12) A
Reduced receivables = 8/365 x 20,500 = $449,300
Net inventory/payables effect = (10-5)/365 x 12,800 = $175,300
Total net working capital effect = 449.3 + 175.3 = $624,600

(13) D
If the discount is accepted, the company must pay $2,462.50 at the end of one month.
Alternatively, the company can effectively borrow the $2,462.50 for an additional two months at a cost of $37.50.
The two month rate of interest is therefore 37.50/2,462.5 x 100 = 1.5228%
The annual equivalent rate (AER) is therefore:
+ 0.015228)6 - 1 = 0.0949 or 9.49%

22 Investment Appraisal

(1) A
Monetary value of return = $3·10 x 1·197 = $3·71
Current share price = $3·71 – $0·21 = $3·50

(2) C

(3) C

Total cash flow ($)	Joint probability	EV of cash flow ($)
36,000	0·1125	4,050
14,000	0·0375	525
32,000	0·4500	14,400
10,000	0·1500	1,500
16,000	0·1875	3,000
(6,000)	0·0625	(375)
		23,100
	Less initial investment	(12,000)
	EV of the NPV	11,100

(4) D

(5) B

(6) D
Sensitivity to a change in sales volume = 100 x 1,300/24,550 = 5·3%

(7) C
Operating profit/(D + E) = 100 x 2,500/(10,000 + 2,500) = 20%

(8) A
TSR = 100 x (3.00 - 2.50 + 0.15)/2.50 = 26%

23 Business Finance

(1) B

(2) D

(3) A

(4) D
Cost of equity = 4 + (1·2 x 5) = 4 + 6 = 10%
WACC = (10 x 0·7) + (6 x 0·3) = 7 + 1·8 = 8·8%

(5) D

The statement about business risk is correct.

(6) D

Operational gearing = Contribution/PBIT = [60,000 – (50,000 x 0·6)]/10m = 3 times

(7) D
Under an operating lease, the lessor is responsible for repairs and maintenance of the leased asset.

(8) B

Value of a right = ((5m x $8 + 1·25m x $6)/6·25 m – $6)/4 shares = $0·4 per share

(9) Current share price = 0.5 x 20 = $10 per share
Rights issue price = 10 x 90/100 = $9 per share
Number of shares to be issued = (50m/10)/4 = 1.25m shares
TERP = (10 x 5 + (x 1.25)/6.25 = $9.80 per share

(10)C
Funding gap
The difference between the finance required to operate an SME and the amount obtained is the funding gap.

(11)B
Dividend to be paid = 0.80 x 0.55 = $0.44 per share
Retention ratio = 100% – 55% = 45%
Dividend growth rate = 45% x 20% = 9% per year
Ke = (0.44 x 1.09)/(4.60 – 0.44) + 0.09 = 20.5%

24 Business Valuation

(1) A
   MV = (7 x 5·033) + (105 x 0·547) = $92·67

(2) C

(3) A
   Gearing = [(4,000 x 1·05) + 6,200 + (2,000 x 0·8)]/(8,000 x 2 x 5) = 12,000/80,000 = 15%

(4) D
   Dividend growth rate = 100 x ((33·6/32) – 1) = 5%, MV = 33·6/(0·13 – 0·05) = $4·20

(5) B
   Market value = (6 x 5·971) + (105 x 0·582) = 35·83 + 61·11 = $96·94

(6) B

(7) A
   Net asset value (NAV) = 140m – 15m – 20m = $105m
   Number of ordinary shares = 25m/0·5 = 50m shares
   NAV per share = 105m/50m = $2·10 per share

(8) A

   Gurdip is basing her investment decisions on technical analysis, which means that she believes the stock market is not efficient at all, not even weak form efficient. Oliver believes markets are strong form efficient.

(9) C
   The geometric average dividend growth rate is $(36·0/31·1)^{1/3} - 1 = 5\%$
   The ex div share price = (36·0 x 1·05)/(0·12 – 0·05) = $5·40

(10) A
   They should not accept less than NRV: (30m+18m+4m–2m–12m–10m)/2m = $14 per share

(11) D
   Theoretical value = 2m/0·08 = $25m

(12) A
   Conversion value = $3·60 \times 1·05^5 \times 25 = \$114·87$
   Discounting at 10%, loan note value = (3 x 3·791) + (114·87 x 0·621) = $82·71

(13) Only third statement is correct   It is correct that the price/earnings ratio is the reciprocal of the earnings yield. The other statements are incorrect.

(14) It is correct that research has shown that, over time, share prices appear to follow a random walk.

(15) A
   A 5% irredeemable loan note pays interest of $100 x 5% = $5 annually
   Ex interest market value = $5 / 0.1 = $50
   Therefore the cum interest market value is: $50 + $5 = $55

25 Risk Management

(1) A

The hedge needs to create a peso liability to match the 500,000 peso future income.
6-month peso borrowing rate = 8/2 = 4%
6-month dollar deposit rate = 3/2 = 1·5%
Dollar value of money market hedge = 500,000 x 1·015/(1·04 x 15) = $32,532 or $32,500

(2) B

(3) B

(4) D

(5) A

(6) C

Twelve-month forward rate = 1·415 x (1·02/1·018) = €1·418 per $1

(7) A

20 x (1·035/1·015) = 20·39 Dinar per $

(8) A

The statement refers to translation risk.

(9) C

Basis risk is the possibility that movements in the currency futures price and spot price will be different. It is one of the reasons for an imperfect currency futures hedge.

(10) A

As risk rises, the market value of the security will fall to ensure that investors receive an increased yield.

(11) B

1: (1·04 x 1·05/1·02) – 1 = 7·06%
2: 1·5 dinar x 1·02/1·05 = 1·4571 dinar/$

(12) Forward rate = 1.60 x (1.015/1.005) = 1.62 pesos per $

(13) It is correct that the cost of an interest rate floor is higher than the cost of an interest rate collar. The other statements are incorrect.

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