
Saturday 26 April 2008

9 to 12

PAPER P3

MANAGEMENT ECONOMICS AND ACCOUNTING

*Answer not more than **four** questions of which not more than **one** may be taken from each section **A, B, C and D.***

*Answers to sections **A, B, C and D** must appear in four separate booklets.*

All questions carry the same number of marks.

*The **approximate** percentage of marks allocated to each part of a question is indicated in the right margin.*

There are no attachments.

STATIONERY REQUIREMENTS

8 page answer booklet x4

Rough work pad

SPECIAL REQUIREMENTS

Engineering Data Book

CUED approved calculator allowed

**You may not start to read the
questions printed on the subsequent pages
of this question paper until instructed that
you may do so by the Invigilator**

SECTION A

Answer one question from this section.

- 1 (a) Why is it argued that the management of large companies today seek to grow their businesses rather than maximize shareholder value? [20%]
- (b) Discuss whether growth maximization and shareholder value maximization are necessarily in compatible. [15%]
- (c) What roles do corporate acquisitions play in managerial growth models? [25%]
- (d) What actions can shareholders take to ensure that management actions are consistent with the objectives of the owners of the business? [40%]

2 An industry is characterised by two technologies used by firms that compete with each other by producing an identical product. The demand for the product can be summarised by the following demand function:

$$P = 12,550 - Q$$

where P is the price at which the product is sold and Q is the total annual amount that can be sold at this price.

The total cost functions for producing this product for each technology are given by the expressions:

$$TC_1 = 4,000 + 50 q_1 + 2.5 q_1^2$$

$$TC_2 = 7,200 + 100 q_2 + 0.5 q_2^2$$

where q_1 and q_2 are the annual outputs of firms with technology 1 and technology 2 respectively.

- (a) Assuming that there are 45 firms of technology 1 and 50 firms of technology 2 operating under conditions of short-run perfect competition and find the profit-maximising outcome for the price and the outputs of each type of firm. [15%]
- (b) What would be the long-run outcome in terms of price, output and the number of each type of firm with this demand function and with only these cost curves if the industry remained perfectly competitive? [15%]
- (c) If there were only one firm of each technology and both firms were to maximize profits on the assumption that the output of the other firm is fixed (the Cournot assumption), what would be the outcome for the price and the outputs and profits of each firm? [30%]
- (d) If the two firms were to collude in order to maximise their joint profits, what would be the outcome under these conditions for the price and the outputs and profits of each firm? [25%]
- (e) Discuss the assumptions you have made in your answers and the economic implications of the outcomes. [15%]

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SECTION B

Answer one question from this section.

3 (a) At 1 November 2006 a company had fixed assets with a net book value of £2,758,940. During the year to 31 October 2007, assets with a net book value of £273,790 were sold at a loss of £15,850 and new assets costing £569,900 were purchased. What amount will be reported for capital expenditure in the Cash Flow Statement for the year to 31 October 2007? [5%]

(b) At 30 November 2007 the fixed assets of a company had a net book value of £2,567,900. The tax written down value was £1,670,000. The balance brought forward on the deferred tax account was £104,320. The tax rate is 22%. What amount will be reported in the Profit and Loss Account for the year to 30 November 2007 for deferred taxation? [10%]

(c) When reviewing the financial statements of a company in which you are a shareholder, you note that during the past year the company has raised a long-term loan to finance the purchase of an asset and reduced the value of its closing stock. How will these changes affect the current ratio and the gearing ratio in comparison to last year? [5%]

(d) You have recently been appointed as a non-executive director of METStars Ltd. The company did not employ a full time accountant, and the administration manager has partly completed the company's accounts for the year to 30 November 2007. Adjustments in respect of fixed assets have still to be made. The directors are due to consider the accounts at their next meeting, and wish the reported value of fixed assets to be as high as possible. You have agreed to advise the administration manager on how to complete the accounts.

You have the following data:

METStars Ltd Draft Balance Sheet at 30 November 2007

	£,000
Fixed assets	1,670
Current assets	347
Creditors: amounts falling due within one year	<u>(264)</u>
	1,753
Creditors: amounts falling due in more than one year	<u>(150)</u>
	<u>1,603</u>
<i>Capital and reserves</i>	
Share capital	300
Retained profit	<u>1,303</u>
	<u>1,603</u>

Notes:

1. Fixed assets include the following items:

	Cost	Depreciation to 30 November 2006
	£,000	£,000
Freehold land	450	Nil
Buildings	180	66
Plant and machinery	248	85
Vehicles	160	98

2. The company's depreciation policy is as follows:
Freehold land is not depreciated.
Buildings - straight line over 30 years
Plant and machinery - straight line at 15% per annum
Vehicles - 20% per annum, reducing balance
 3. The freehold land was bought in January 2007. Its value at 30 November 2007 is £480,000.
 4. Over the last two years the location of the buildings has suffered occasional flooding. The directors were unsure if this led to an impairment and carried out a valuation of the buildings. The buildings were valued at £100,000.
- (i) Briefly explain the nature of depreciation and impairment and comment on whether the company's depreciation policies comply with generally accepted practice. [30%]
- (ii) Calculate the adjustments which should be made to the reported value of fixed assets in respect of the information in notes 1-4 above. [25%]
- (iii) Prepare the revised balance sheet at 30 November 2007, after making the adjustments in respect of the information in notes 1-4 above. [25%]

4 (a) A company wishes to report a profit on the sale of a machine and also an increase in the value of a building. Briefly discuss the accounting treatment of each. [5%]

(b) The draft profit and loss account of a company for the year ended 30 June 2007 shows an operating profit of £325,800. This includes a restructuring charge of £85,000 and an adjustment of £42,000 to correct the value of opening stock. What is the correct figure for Operating Profit for the year to 30 June 2007? [10%]

(c) The financial statements of a company may include the following items:

- Profit from discontinued activities
- Exceptional items
- Preference dividends
- Ordinary dividends

Which of the above items are taken account of in the calculation of the earnings figure when calculating basic earnings per share? [5%]

(d) As the newly appointed Company Accountant of Barlow Engineering Ltd., you have been asked to report to the Board of Directors on the company's cash position. The Directors are concerned that, although generating cash was one of the key objectives of the last year, the company actually consumed cash. You have prepared the balance sheet at 30 November 2007 and this is shown below together with comparative figures for 2006 along with other information extracted from the accounts for the year to 30 November 2007.

	2007		2006	
	£	£	£	£
Fixed Assets		849,162		853,962
<i>Current Assets</i>				
Stock	97,593		84,829	
Debtors	176,041		157,494	
Cash at Bank	-	273,634	2,480	244,803
<i>Current Liabilities</i>				
Creditors	147,065		137,569	
Interest	3,000		3,000	
Tax	9,000		25,700	
Bank overdraft	6,464	165,529	0	166,269
Net Current Assets		108,105		78,534
4% Loan Stock		150,000		175,000
		807,267		757,496
<i>Financed by:</i>				
Ordinary Shares of £1 each		400,000		389,000
Share Premium		40,000		23,000
Profit and Loss Account		367,267		345,496
		807,267		757,496
Profit and Loss Extracts		£		
Depreciation charge		15,800		
(NB. There were no disposals of fixed assets during the year)				
Tax charge		9,000		
Interest charge		6,000		
Dividends paid		5,000		

(i) Prepare Barlow Engineering's Cash Flow Statement for the year to 30 November 2007. [55%]

(ii) Identify the main issues that are apparent from the Cash Flow Statement and suggest actions that the company might take in order to improve cash flow. [25%]

SECTION C

Answer **one** question from this section.

5 MET Ltd is developing a new product that can be fitted to domestic heating systems to reduce fuel consumption. You are a member of a project team with responsibility for the development of the product, which has been given the working title of 'Ergsave'. A market research report indicates that sales volume will be dependent on the selling price at which the product is initially launched.

The market research report provided the following data:

Initial Selling Price £	Sales Volume (,000 units)				
	2008	2009	2010	2011	2012
200	46	52	55	57	49
225	42	45	49	50	46
230	35	38	41	44	34

Initial product costings have been prepared, based on the proposed specification. These indicate a variable cost per unit of £160, which is made up as follows:

	£
Materials	87
Labour	45
Overhead	28

Fixed production overheads are forecast to be £1.1m per annum. In addition development costs of £4.7m have been incurred to date, while further development expenditure of £1.7m is planned.

The following decision criteria are applied to all new products:

- a target cost pricing approach is to be used;
- development costs are capitalised and amortised over the first five years of a product's life cycle;
- products are assessed over a five year time horizon; and
- products must deliver a profit margin of 15% of sales.

The managing director has questioned whether it is appropriate to maintain the same selling price throughout the product's life cycle. She has asked you to consider alternative pricing strategies.

(a) Explain the concept of target cost pricing and how it differs from cost plus pricing. [25%]

(b) Based on the market research report, indicate the selling price at which the product should be launched, and the reduction in costs which must be achieved if the decision criteria are to be met. [25%]

(c) Identify techniques that may be applied to reduce the cost of the product to the required level. [25%]

(d) Identify and discuss two alternative pricing strategies that could be used. [25%]

6 Guest Ltd wants to use variance analysis to assess the performance of its leading product in the month of November 2007. Guest Ltd expected its performance in November to be the same as its performance in October 2007. In October, 22,500 units of this product were sold at a price of £192 per unit. 30,000 kg of direct materials were used at a cost of £36 per kg, whilst 57,000 direct labour hours were worked at a cost of £10.80 per hour. There were also variable overhead costs of £30 per direct labour hour and fixed overhead costs of £337,500.

Actual sales of the product in November were 20,000 units at a price of £188 per unit sold. A total of 26,000 kg of direct materials were used at a cost of £1,041,000. Direct labour costs amounted to £549,120 for a total of 52,800 hours. The product was allocated overheads that consisted of fixed overheads of £360,000 and variable overhead costs of £1,478,400.

(a) Analyse the variances and present your answer in the form of an operating profit statement. [60%]

(b) How would you interpret the variances and what action would you advise the company to take. [40%]

SECTION D

Answer *one* question from this section.

7 (a) A company has ordinary shares in issue that have a beta of 1.4 and which receive a constant dividend of 50 pence per ordinary share. The risk-free rate of return is 5% and the current market rate of return is 12%. What is the predicted market value of each ordinary share? [5%]

(b) A risk-averse investor is considering four mutually exclusive investments with the characteristics shown in the table below. Which two of the investments will the investor immediately reject? [5%]

	Expected return	Standard deviation of expected returns
Alpha	15%	5%
Beta	14%	8%
Gamma	25%	10%
Delta	12%	5%

(c) A US company has a payment to make in sterling in three months' time and wishes to hedge its exposure to exchange risk. The suggested ways of dealing with this are listed below. Which two of these suggestions would provide a hedge against exchange rate risk? [5%]

- i. Buy sterling futures now and sell futures in three months' time.
- ii. Buy sterling call options now.
- iii. Sell sterling futures now and buy sterling futures in three months' time.
- iv. Buy sterling put options now.

(d) A company has £50m of loan stock with a fixed rate of interest of 6.0%. The company wishes to swap the fixed rate of interest for a floating rate of interest by entering into a swap agreement. A swap bank offers a swap agreement with a fixed rate of 5.5% and will receive LIBOR in return. What will be the overall % cost of borrowing for the company during the first year of the swap agreement if LIBOR for that period is 5.1%? [5%]

(e) Gregorius plc is a medical research business that has recently patented a device which enables medical professionals to administer vaccinations without the use of needles. The new device has incurred total costs to date of £4.5m, of which £0.5m relates to consultancy fees that are due for payment in three months' time. The device is now fully developed and ready to launch; however, the directors of the company have still to decide which of three mutually exclusive options available should be pursued. These options are as follows:

1. The company could manufacture and sell the device itself. This would involve immediately purchasing the necessary plant and equipment at a cost of £8.5m, which would then be installed in part of the company's premises that is currently unused. Production of the new device could begin immediately and over the expected four-year life of the device, sales are forecast to be as follows:

	Year 1	Year 2	Year 3	Year 4
Forecast sales (000's units)	450	650	300	200
Expected selling price per unit	£35	£35	£30	£25

This option would require an immediate injection of working capital of £1.2m, which could be released at the end of the expected life of the device. The plant and equipment would have no further use at the end of the four-year period and could be sold for an estimated £2.0m at that point. The variable costs associated with producing and selling the device are estimated at £6 per unit and estimated annual fixed costs are as follows:

	£m
Manufacturing	4.4
Selling, administration and distribution	<u>3.2</u>
	<u>7.6</u>

2. The company could allow another company to manufacture the device. Under this option, sales volumes are expected to be 20% higher than those predicted under option 1. above as greater manufacturing capacity will be available. The terms of a proposed agreement with the manufacturer requires that Gregorius plc provides the manufacturer with an interest-free loan of £3m immediately in order to help re-equip a

factory and that this amount will be repaid in three years' time. The terms also state that each device will be purchased from the manufacturer for £30 and that extended credit will be available so that payment to the manufacturer will be made one year after sale. Selling, administration and distribution costs of Gregorius plc would be reduced by £0.4m per year under this option.

3. The company could sell the patent rights to a large international pharmaceutical business for £7.5m immediately.

(i) Calculate the net present value of each option available to Gregorius plc if the discount rate is 12%. [60%]

(ii) Evaluate each of the options available and discuss which one should be selected and why. [20%]

8 (a) Ordinary shares of Company A have a beta of 0.4 and an expected return of 5%. The expected market rate of return is 8%. If the shares of Company B have a beta of 1.5, what will be the expected return for investors in Company B? [5%]

(b) A company has ordinary shares with a par value of £1.00 in issue. It has a price earnings ratio of 20 times and had earnings per share of £0.50 for the financial year just ended. If the gross dividend yield is 2.0%, what is the dividend cover ratio? [5%]

(c) Is each of the following statements concerning financial options true, or false? [5%]

- i. An interest rate cap is a series of lenders' options on a notional loan.
- ii. An American-style option may be exercised before the expiry date of the option.

(d) The European-style options listed below are held at their expiry date by an investor. In each case say whether the investor should exercise, or lapse, the option. [5%]

- i. A call option of 20,000 shares in a company with an exercise price of 860p. The market price of the shares at the exercise date is 880p.
- ii. A put option of £600,000 in exchange for euros at a strike rate of £1 to €1.5. The exchange rate at the expiry date is £1 to €1.45.

(e) Darwin plc owns a subsidiary, Wolfson Ltd. The subsidiary, which is a wholesaler of toys and games, has steadily increased annual sales and profits over the past five years. However, at a recent meeting of the Board of Directors of Darwin plc, it was decided that the subsidiary should be sold. This decision was in line with a policy of divestment that has been pursued over the last two years. The Board of Directors does not know the value of a share in the subsidiary and has decided to obtain a range of possible values that might be used in future negotiations.

The most recent summarised financial statements of Wolfson Ltd. are:

Balance Sheet at 30 June 2007

	£,000	£,000	£,000
Fixed Assets			
Freehold land and buildings at cost		560	
Less: accumulated depreciation		<u>70</u>	490
Fixtures and fittings at cost		84	
Less: accumulated depreciation		<u>40</u>	44
Motor vans at cost		164	
Less: accumulated depreciation		<u>96</u>	<u>68</u>
			602
Current assets			
Stocks	420		
Trade debtors	<u>330</u>	750	
Less creditors falling due within one year			
Trade creditors	245		
Approved dividend	60		
Taxation	105		
Bank overdraft	<u>180</u>	<u>590</u>	<u>160</u>
			<u>762</u>
Capital and reserves			
Ordinary £1 shares			200
Profit and loss account			<u>562</u>
			<u>762</u>
Profit and loss account for the year ended 30 June 2007			£,000
Sales			<u>4,320</u>
Profit before interest and charges			356
Interest charges			<u>35</u>
Profit before taxation			321
Corporation tax			<u>105</u>
Profit after taxation			216
Approved dividend			<u>60</u>
Retained profit for the year			<u>156</u>

The Board of Directors of Darwin plc commissioned an independent valuer to establish the current realisable value of the assets of Wolfson Ltd. at 30 June 2007 and the figures provided were as follows:

	£,000
Freehold premises	876
Fixtures and fittings	24
Motor vehicles	52
Stocks	408

Trade debtors were considered to have current realisable values that were in line with their balance sheet values. The required return from ordinary shareholders in similar businesses that were listed on the London Stock Exchange is 7%. The average price earnings ratio for similar listed businesses is nine times. The dividends of Wolfson Ltd have been growing at a steady rate of 3% per year.

- (i) Suggest reasons why a company may decide to divest itself of part of its business operations. [15%]
- (ii) Calculate the possible values for an ordinary share in Wolfson Ltd using each of the following methods: [50%]
- a. Net assets (net book value) method;
 - b. Net assets (liquidation) method;
 - c. Dividend growth valuation method;
 - d. Price earnings ratio method.
- (iii) Discuss which of the valuation methods above is likely to provide the most realistic assessment of the market value of an ordinary share in Wolfson Ltd. [15%]

END OF PAPER

