

Friday 29 April 2011 9 to 12

PAPER 5

Module 3P8: FINANCIAL AND MANAGEMENT ACCOUNTING
(Sections A and B)

Module 3P9: INDUSTRIAL ECONOMICS, STRATEGY AND GOVERNANCE
(Sections C and D)

*Answer not more than **four** questions, **one** from each of sections **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

<p>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</p>

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SECTION A

Answer **one** question from this section.

1 (a) Ian Bell buys and sells art and jewellery. At 31 May 2009 he had three items in stock. These were a painting, a necklace and a pair of earrings. He had bought the painting for £3,500, thinking that it was an original by Jack Russell. He has since discovered that it is a good copy, and it is likely that he would receive no more than £1,200 when he sells it. The necklace was bought several years ago for £900, while the earrings were bought for £800. As the earrings and necklace are of the same style, they can be sold as a set at a combined price of £3,500. At what value should Ian's inventory be reported in his balance sheet at 31 May 2009? [5%]

(b) Strauss Co agreed to purchase all the shares of Ponting Co in a share-for-share exchange. Information concerning each company is as follows:

	Strauss Co	Ponting Co
Number of ordinary shares in issue	50·0m	30·0m
Profits before tax	£20·0m	£9·0m
Profits after tax	£15·0m	£6·0m

Strauss Co has a P/E ratio of 14 times and has agreed to acquire Ponting Co's shares for a price based on this ratio. It is expected that there will be no growth in earnings following the acquisition. What are the expected earnings per share of Strauss Co following the acquisition? [10%]

(c) At 31 May 2008 the balance sheet of Prior Co included a balance of £75,720 for deferred tax. At 31 May 2009 the net book value of the company's fixed assets was £1,728,500 while their tax written down value was £1,407,200. The tax rate at 31 May 2009 is 23%. What should be reported in the income statement for the year to 31 May 2009 for deferred tax? [10%]

(d) Bresnan Co has 2 million £0·50 ordinary shares in issue and the market capitalisation of the company is £28·0m. The company is about to make a 1-for-4 scrip issue, immediately followed by a 2-for-1 share split. What will be the theoretical value of a share following the above transactions and the number of shares held by an investor that held 1,000 shares prior to these transactions? [5%]

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(e) You are employed as a manager in Gooch, a medium sized limited liability company. The management team is due to meet shortly to consider making an offer to acquire one of the company's suppliers, which trades under the business name Boon. At that meeting, the balance sheets and other information below will be considered.

Boon – Statements of financial position at 30 November:

	2010	2009
	£000	£000
ASSETS		
<i>Non-current assets</i>		
Property, plant and equipment	294	276
<i>Current assets</i>		
Inventories	93	84
Trade receivables	86	74
Cash at bank	<u>7</u>	<u>6</u>
Total assets	<u>480</u>	<u>440</u>
EQUITY AND LIABILITIES		
Ordinary share capital	100	90
Retained earnings	<u>255</u>	<u>206</u>
Total equity	<u>355</u>	<u>296</u>
<i>Non-current liabilities</i>		
Long-term borrowings	43	56
<i>Current liabilities</i>		
Trade and other payables	53	55
Short-term borrowings	17	19
Current tax payable	<u>12</u>	<u>14</u>
Total current liabilities	<u>82</u>	<u>88</u>
Total liabilities	125	144
Total equity and liabilities	480	440

The income statement for the year to 30 November 2010 includes the following items:

Depreciation charge	£15,500
Interest charge	£3,400
Tax charge	£11,400
Dividends paid	£6,700

No non-current assets were disposed of during the year, but there were some acquisitions.

No interest was accrued or prepaid at 30 November 2009 or 30 November 2010.

You have noted that although Boon is a limited liability company, it is exempt from the requirement to have its financial statements audited. A colleague has pointed out that it would be helpful if a statement of cash flows was available for the management meeting.

- (i) Calculate the following figures for inclusion in Boon's statement of cash flow for the year to 30 November 2010:
 - a. cash flow from operating activities;
 - b. cash flow from investing activities;
 - c. cash flow from financing activities; and
 - d. movement in cash and cash equivalents. [50%]
- (ii) Explain the purpose of an audit; and whether your management team can place any reliance on Boon's financial statements. [20%]

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2 (a) Prior to 30 April 2008 Collingwood Co had paid a total of £300,000 to fund a research project. Following positive results, it was decided in May 2008 to pay a further £600,000 to develop the new product, and production also commenced in May 2008. The product is expected to have a commercial life of eight years. The directors wish to maximise short term profit while applying generally accepted accounting principles. What is the minimum amount which could be charged in the income statement for the year to 30 April 2009? [10%]

(b) At 31 March 2009, the non-current assets of Broad Co had a book value of £1,743,500 and a tax value of £1,045,900. The company's general ledger includes a credit balance of £123,980 for deferred tax. The company pays tax at a rate of 21%. What amount should be reported in the income statement for the year to 31 March 2009 for deferred tax? [10%]

(c) Anderson Co has reported an operating profit of £728,654 for the last financial year. The company's income statement also reports an interest charge of £45,860, a tax charge of £158,740 and an ordinary dividend of £50,000. The company's issued ordinary share capital is £500,000 in £1 shares. What figure should be reported for earnings per share? [5%]

(d) Pietersen Co has ordinary shares in issue with a par value of £0.25. For the financial year just ended, the company had earnings per share of £0.20 and a dividend cover of 2.0 times. At the year end the dividend yield was 4.0%. What is the price/earnings ratio of the company at the year end? [5%]

(e) Ash Co is a supplier of plasterboard to the building industry. The abridged financial statements of the company for the most recent year are set out below:

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Balance sheet as at 31 May 2010

	£000	£000
<i>Non-current assets</i>		
Property, plant and equipment at written down value		595.0
<i>Current assets</i>		
Inventory at cost	250.0	
Trade receivables	620.0	
Bank	<u>23.0</u>	
	893.0	
<i>Current liabilities</i>		
Trade payables	225.0	
Tax due	<u>51.0</u>	
	276.0	
		<u>617.0</u>
		1,212.0
<i>Non-current liabilities</i>		
8% loan		<u>600.0</u>
		<u>612.0</u>
<i>Equity</i>		
£1 Ordinary shares		200.0
Retained profit		<u>412.0</u>
		<u>612.0</u>

Income statement for the year ended 31 May 2010

	£000
Revenue	<u>3,200.0</u>
Net profit before interest and taxation	456.0
Interest payable	<u>48.0</u>
Net profit before taxation	408.0
Tax (25%)	<u>102.0</u>
Net profit after taxation	306.0
Dividend paid	<u>100.0</u>
Retained profit for the year	206.0

The company has recently developed a new type of plasterboard with excellent fire-resistant qualities and is expecting this new product to lead to a significant increase in

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total sales revenue. This, in turn, is expected to lead to an additional profit before interest and taxation of £80,000 per year. To accommodate the anticipated increase in sales, the company has decided to invest £500,000 in new machinery and equipment.

To finance the acquisition of the new assets, the directors of Ash Co are currently in the final stages of negotiations with a provider of development capital. Ash Co has been offered a choice between:

1. an issue of £1 ordinary shares at a premium on nominal value of £4 per share; or
2. an issue of £500,000 9% loan stock at nominal value.

Whichever financing method is decided upon, the amount required will be raised immediately and the existing dividend per share will be maintained.

- (i) For each of the two financing schemes:
 - a. prepare a projected income statement for the year ended 31 May 2011;
 - b. calculate the projected earnings per share for the year ended 31 May 2011;
 - c. calculate the projected level of gearing as at 31 May 2011.

[20%]
- (ii) Calculate the level of profit before interest and taxation at which the earnings per share under each of the financing schemes will be the same.

[25%]
- (iii) Evaluate both of the financing schemes under consideration from the viewpoint of the existing shareholders.

[25%]

SECTION B

Answer **one** question from this section.

- 3 (a) Davies Co uses activity based costing (ABC). Overhead costs for the next year are:

Expense	Total expenditure £	Volume of activity
Set up costs	1,139,200	3,200 set ups
Raw material handling	488,900	5,000 materials orders

One of the company's products is manufactured in batches of 500 units, with each batch requiring one set up and 50 materials orders. Using ABC, what is the overhead cost of 220 units? [10%]

- (b) Among the products manufactured by Tremlett Co are two products which require material A. Data relating to the products are:

Product:	Box	Dax
Selling price (per unit)	£35	£47
Variable costs (per unit)	£21	£32
Share of fixed costs (per unit)	£8	£9
Profit (per unit)	£6	£6
Material A usage (per unit)	3.5 kgs	5 kgs
Maximum sales demand (units)	10,000	7,000

In the next period, the supply of material A will be limited to 35,000 kgs. What volume of each product should be manufactured in order to maximise short term profit? [10%]

- (c) The Northern division of Swann Co currently earns a return on investment of 15.5%, based on capital employed of £2,680,000. The divisional management team have decided to implement a project which will require an investment of £320,000. The project is expected to generate a profit of £53,000 per annum. The Northern division's cost of capital is 13%. What will be the residual income of the division after the project is implemented? [5%]

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(d) You are preparing a tender for Panesar Co. Following the completion of another contract, Panesar has an inventory of 340 units of a particular material. There are currently no other contracts on which this material will be used. The production manager has estimated that 500 units of the material will be required for the contract. The items held in inventory had cost £25.70 per unit and they have no salvage value. The replacement cost is £28 per unit. What cost should be included in the contract for the 500 units of this material? [5%]

(e) Flower Co has been in business for a number of years producing telecommunication equipment. The company has been approached by a manufacturer of in-car satellite navigation systems with a view to forming a strategic alliance. The proposal is that one of the components, which is currently used in its end products, would be purchased by the partner for use in one of its products. The partner has suggested that the price for the components should be calculated on a target costing basis. The proposal is to deduct an agreed profit margin and further processing costs from the market price for the navigation system to derive the price for the component.

The managing director has suggested that Flower should take this opportunity to expand the company's production capacity and change the structure to allow it. He has suggested that two divisions should be formed. One of these would manufacture the component and the other would manufacture the final products. Some of the output of the component manufacturing division would be transferred to the end-product manufacturing division and some would be sold to the partner. He has noted that if this structure is adopted, it will be necessary to implement an appropriate system of transfer pricing. In addition it is proposed to pay a bonus to divisional managers. This will be calculated as 4% of the amount by which divisional profits exceed 5% of revenue.

Two possible transfer pricing systems, market based and cost based, have been suggested. In the market-based system, internal transfers would be charged at the price paid by the external customer. In the cost-based system, internal transfers would be charged at variable cost plus 70%.

One of the senior managers has questioned the need for what he has referred to as 'another cost heading'. He argues that there will be no benefit to Flower as the income of one division will be a cost to the other, leading to a neutral effect on the company as a whole. You have been asked to brief the senior management team on the implications of establishing a transfer pricing system.

You have obtained the following data:

1. The selling price of the satellite navigation system will be £78.
2. The agreed margin will be 25%.
3. The customer's costs of further processing will be £12.50 per unit.
4. The variable cost of manufacturing is £26.80 per unit.
5. Fixed costs for the component division will be £2.7 million per annum.
6. The expanded capacity of the component division will be 450,000 machine hours per annum.
7. Each unit requires 2.5 hours of machine time.
8. The expected external demand in the first year of operation is 60,000 units.
9. The remaining production capacity will be utilised by internal transfers.

(i) Assess the argument that a transfer pricing system will provide no benefits to Flower and discuss the conflicts which the company must resolve if a transfer pricing system is introduced. [20%]

(ii) Calculate the bonus which would be payable to the manager of the component division in the first year of divisionalisation in each of the proposed transfer pricing systems. [40%]

(iii) Recommend the basis for calculating a transfer price which is likely to be appropriate for use by Flower. [10%]

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4 (a) In the last year, Steven Finn earned a net profit of £72,000 on sales of £726,000. He estimates that his variable costs are 70% of sales. In the next year, he expects that his fixed costs will increase by 5% and his variable costs will be 75% of sales. He wishes to make a net profit of £81,000. What sales revenue must he generate in the next year to achieve a profit of £81,000? [10%]

(b) When the budget for the three months to 30 April 2009 was prepared, the expected level of production was 20,000 units, and the budgeted production overhead was £178,400. This included £42,000 of fixed costs, with the remainder estimated to vary with the level of production. Actual production in the three months to 30 April 2009 was 21,220 units. What is the flexed production overhead budget for the three months to 30 April 2009? [10%]

(c) The income statement of Morgan Co for the year to 31 March 2009 reported a profit after tax of £705,644. This includes £320,000 which is the total cost for a development project, which is expected to have a useful economic life of four years. The book value of the net assets is £2,850,000 and the economic value is £3,534,000. The company's weighted average cost of capital is estimated to be 14.6%. What is the Economic Value Added for Morgan Co for the year to 31 March 2009? [10%]

(d) In the three months to 31 March 2009, Bopara Co paid labour costs of £62,597.60 for 6,760 labour hours. This included 182 hours of non-productive labour. The standard labour cost of the product produced is £21.96, based on a standard time of 2.4 hours per unit. What was the labour rate variance for the three months to 31 March 2009? [10%]

(e) The directors of ECB, a listed company, are considering the initial selling price for a new product. The company's pricing policy is to calculate the selling price of a product to generate a profit of 20% of sales price, after recovering development costs over the first two years following the launch of the product. Based on the company's current pricing policy, the directors wish to calculate the potential selling price at sales levels of both 900 units and 750 units in the first two years. It has been suggested that the company is likely to achieve a higher volume of sales if a policy of target cost pricing is introduced. The directors have commissioned market research to estimate the expected selling price which would lead to a sales volume of 1,000 units over two years.

The following data for the product has been prepared:

Materials cost (per unit) £710 (see note 1)
Labour cost (per unit) £480 (see note 2)
Variable overheads (per unit) £320
Fixed costs (per annum) £720,000 (see note 3)
Product development £1,215,000 (see note 4)

Note 1 The material cost has been calculated on the basis that the directors plan to use a number of suppliers for each material required, in order to minimise the risk of materials being unavailable.

Note 2 Specialised labour will be required for production of the new product.

Note 3 Fixed costs comprise both central costs and costs which relate to the provision of new production facilities which will not be required if production of the new product is not undertaken. The new production facilities include the storage facilities for raw material inventory, and the training costs for new recruits.

Note 4 The product is now fully developed, and no further development expenditure will be required.

- (i) For both of the potential total sales levels (900 units and 750 units), calculate the selling price per unit which would be required to meet the objective of a 20% profit margin over the first two years. [20%]
- (ii) Assuming that the market research indicates that the selling price at which the total sales level of 1,000 units can be achieved is below either of the prices you have calculated in (i), explain the concept of target cost pricing and recommend the action that could be taken to achieve the required margin. [20%]
- (iii) At a recent meeting, the directors decided to consider whether the current policy of requiring products to achieve a specific net profit margin over a two year period was appropriate. You have been asked to attend the next meeting to advise the directors on the extent to which the strategies of market penetration and market skimming may be successful for ECB. You have been asked to base your observations on the planned new product. Prepare briefing notes which explain the strategies of market penetration and market skimming, and indicate the extent to which each of these strategies could be used for the new product. [20%]

SECTION C

Answer **one** question from this section.

5 An industry is characterized by two technologies used by profit-maximising firms that compete with each other producing an identical product. The market price for this product is given by the following demand curve:

$$P = 7524 - 0.02Q$$

where P is the price per unit and Q is the total annual demand at this price.

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

$$TC_1 = 10,000 + 100 q_1 + 0.010 q_1^2$$

$$TC_2 = 20,000 + 200 q_2 + 0.002 q_2^2$$

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

- (a) Assume that there are twenty firms of each technology operating under conditions of short-run perfect competition and find the equilibrium price and the outputs of each type of firm. [30%]
- (b) What would be the long-run outcome in terms of output, price and the number of each type of firm if the industry remained perfectly competitive? [15%]
- (c) If there were only one firm of each technology and they both maximise profits on the assumption that the output of the other is fixed (the Cournot assumption), what would be the outcome for their outputs and for the price? [20%]
- (d) If instead these two firms were to collude, what would be the outcome for their outputs and for the price? [15%]
- (e) Discuss the assumptions you have made in your answers and the economic implications of your results. [20%]

- 6 (a) What factors might account for the observed differences in the ratio of advertising expenditures to sales between different products and industries? [30%]
- (b) How might one attempt to measure economies of scale? [20%]
- (c) How might the existence of significant economies of scale affect the competitive structure and behaviour of an industry? [50%]

SECTION D

*Answer **one** question from this section.*

- 7 (a) Why might the goals of large companies today be inconsistent with shareholder objectives? [15%]
- (b) Discuss whether growth maximisation and shareholder value maximisation are necessarily incompatible. [30%]
- (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 their own objectives? [30%]

8 You have recently been appointed as the first Marketing Director of a new technology company that is developing a novel product to monitor energy efficiency in the home. Describe the information you would seek and the issues you would address in formulating a marketing strategy for the company. [100%]

END OF PAPER