MET 2

MANUFACTURING ENGINEERING TRIPOS PART IIA

Thursday 4th May 2023

09:00 - 12:10

Paper 5

Module 3P8: FINANCIAL AND MANAGEMENT ACCOUNTING

Module 3P9: INDUSTRIAL ECONOMICS, STRATEGY AND GOVERNANCE

Answer 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.

Write your candidate number not your name on the cover sheet of each booklet.

STATIONERY REQUIREMENTS

8 page answer booklet x 4

Rough work pad

SPECIAL REQUIREMENTS TO BE SUPPLIED FOR THIS EXAM

CUED approved calculator allowed

Engineering data books

10 minutes reading time is allowed for this paper at the start of the exam.

You may not start to read the questions printed on the subsequent pages of this question paper until instructed to do so.

You may not remove any stationery from the Examination Room.

SECTION A

Answer one question from this section.

Question 1

The Balance Sheet of Sutlej Ltd shows the following information at 30th September 2020:

	30th Se	eptember 2020 £'000
ASSETS		
Non-current assets		
Land		20
Equipment and vehicle	35	
Less: Accumulated Depreciation	(17)	
		18
Current assets		
Inventory		12
Accounts receivable		15
Prepayments		6
Cash		24
Total		95
LIABILITIES and EQUITY		
Current liabilities		
Accounts payable		27
Interest payable		3
Non-current liabilities		
Long term loan		24
Equity		
Contributed capital		29
Retained earnings		12
Total		95

CONT)

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During the year to September 2021 the company purchased a vehicle for £10,000 and raw materials for £2,000. Cash of £11,000 was collected from debtors and used to repay the interest owed and the remainder used to pay off creditors. Sales of £28,000 were recorded all on credit. Shares were issued to raise £10,000 to pay off part of the loan.

In addition, at the end of September 2021 Sutlej Ltd owed £3,000 in interest and charged £4,000 in depreciation. A stock count showed £9,000 of stock. The company paid a cash dividend of 50 percent of September 2021's net income.

(a) Prepare the Balance Sheet as at 30th September 2021.

[40%]

(b) Prepare the Income Statement for the year ending 30th September 2021.

[20%]

(c) Prepare a Cash Flows statement using the *direct method* for the year ending 30th September 2021.

[20%]

(d) The Managing Director is concerned about the cash position and is focussed on the Direct Cash Flow statement. Explain how an *indirect* cash flow and other financial statements might contribute to the analysis.

[20%]

TURN OVER

Question 2

(a) Profitability, liquidity, leverage and investment return are four of the key areas in which financial ratios can provide information about a company. For each of these areas explain two financial ratios including how they are calculated and what information they can provide in an analysis of financial performance.

[40%]

(b) Calculate the inventory turnover for the two firms P and Q. Company P is a supermarket which has both physical shops and online services (Table 1).Company Q is an online supermarket with no physical shops (Table 2).Comment on the results for each firm.

[20%]

	2021	2020	2019	2018
	£M	£M	£M	£M
Turnover	29,895	29,048	28,993	29,007
Cost of sales	27,529	27,203	26,977	26,719
Profit/(loss) after tax	677	(201)	152	186
Inventory	1,797	1,625	1,732	1,929
	Table 1			
	2021	2020	2019	2018
	£M	£M	£M	£M
Turnover	2,498	2,332	1,757	1,599
Cost of sales	1,563	1,532	1,165	1,051
Profit/(loss) after tax	(186)	(78)	(212)	(45)
Inventory	87	62	52	57

Table 2

(c) Discuss the challenges of using financial ratios to assess company performance.

[20%]

CONT)

(d) Discuss other financial and non-financial information other than the audited financial statements, which may be of relevance when assessing a company's performance and financial position with a view to purchasing a stake in that company.

[20%]

TURN OVER

SECTION B

Answer one question from this section.

Question 3

Liberty Ltd. produces four products, W, X, Y and Z, all made from the same material. Until now, it has used traditional absorption costing to allocate overheads to its products. The company is now considering an *activity-based costing* system in the hope that it will improve its management of profitability. Information for the four products for the last year is shown in Table 3.

	W	X	Y	Z
Production and sales volume (units)	11,000	15,500	11,000	17,500
Selling price per unit (£)	16.00	12.00	13.20	15.00
Raw material usage kilograms per unit (kg)	4.0	3.0	3.8	3.5
Direct labour hours per unit (h)	0.05	0.1	0.13	0.25
Machine hours per unit (h)	0.5	0.5	0.65	0.9
Number of production runs per annum	6	23	12	7
Number of purchase orders per annum	10	22	27	35
Number of deliveries to retailers per annum	5	45	26	60

Table 3

The price of raw materials remained constant throughout the year at £2 per kg. The average direct labour cost across the whole workforce, for the year, was £13.50 per hour. The annual overhead costs are shown in Table 4.

	£
Machine set-up costs	30,850
Machine running costs	54,000
Procurement costs	73,000
Delivery costs	39,000

Table 4

CONT)

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(a) Calculate the full cost per unit for each product under traditional absorption costing, using direct labour hours as the basis for apportionment.

[25%]

(b) Calculate the full cost per unit of each product using activity-based costing.

[40%]

(c) Using your calculations from (a) and (b) above, explain how activity-based costing may help Liberty Ltd. improve the profitability of each product.
Consider the advantages and disadvantages of the traditional absorption costing and activity-based costing approaches.

[35%]

Question 4

Leaf Ltd. is a furniture company. Leaf Ltd.'s capital structure shows £200m of finance, consisting of £120m equity and £80m debt. The equity investors require a return of 10% whereas the debt investors only require a return of 5%. The company has the potential for new wooden furniture lines Oak; Elm and Ash. Leaf Ltd. has £300,000 to invest and is considering these three possible investment options. Oak and Elm have already been evaluated using Net Present Value as shown in Table 5.

	Investment	Net Present Value
	£k	£k
Oak	290	73.5
Elm	105	27
	Table 5	

Ash is a new product which would require an immediate cash investment of £190,000. The necessary machinery to manufacture the Ash product has an expected scrap value at the end of the project's life in three years of £40,000. The draft financial for Ash for the three years is shown in Table 6.

	Year 1	Year 2	Year 3
	£k	£k	£k
Sales	220	340	290
Production Costs			
Materials	55	110	56
Labour	60	70	80
Other including depreciation*	80	90	100
Profit	25	70	54
Closing receivables	20	25	30
Closing payables	6	7	8

Table 6

^{*}Depreciation is calculated using the straight line method.

Version FTU/03

(a)	Estimate the weighted average cost of capital for the company, ignoring	
	taxation.	
		[15%]
(b)	Calculate the Net Present Value of the Ash investment.	
		[50%]
(c)	Recommend the best investment strategy for Leaf Ltd given the three projects available.	
		[15%]
(d)	Consider what other factors Leaf Ltd's management might need to take into account when making their investment decision.	
		[20%]

SECTION C

Answer one question from this section.

Question 5

(a) Describe the Cournot and Bertrand duopoly models. Compare and contrast the results of these models.

[30%]

(b) Discuss the usefulness of game theory for strategic management.

[70%]

Question 6

(a) The groceries market is becoming dominated by firms with physical and online presence. Such firms often sell a large variety of products such as groceries as well as household goods and other products. What are the expected economies of scale? What are the potential diseconomies of scale? Discuss the broader advantages and disadvantages of this approach.

[50%]

(b) "Owning our own source of supply of raw materials used in production insulates us from short-run supply-demand imbalances and therefore will give us a competitive advantage over rival producers." Discuss the advantages and disadvantages of vertical integration using examples from recent global supply chain events.

[50%]

SECTION D

Answer one question from this section.

Question 7

NO Meat Ltd. is a new company that intends to sell meat replacement products to low income communities across Africa. For distribution, this product is frozen and transported in bulk bags.

(a) List and discuss four the different possible approaches to segment the market.

[20%]

(b) Choose one of the segmentation approaches identified in (a) and describe in detail the process to perform the segmentation of the market and the challenges No Meat Ltd. would face.

[80%]

Question 8

Considering low-cost airlines. Discuss the following strategic issues.

(a) Business model innovation.

[40%]

(b) Supply chain and partner firm configuration.

[40%]

(c) Post Covid customer demand management.

[20%]

END OF PAPER

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