



SERIES 4 EXAMINATION 2001

MANAGEMENT ACCOUNTING

THIRD LEVEL

(Code No: 3023)

TUESDAY 13 NOVEMBER

Instructions to Candidates

- (a) *The time allowed for this examination is 3 hours.*
- (b) *Answer 5 questions.*
- (c) *All questions carry equal marks.*
- (d) *All answers must be clearly and correctly numbered but need not be in numerical order.*
- (e) *Your answers should be written in blue or black ink/ballpoint. Pencil may be used only for graphs, charts, diagrams, etc.*
- (f) *Candidates may use calculators provided the calculators give no printout, have no word display facilities, are silent and cordless. The provision of batteries and responsibility for their condition must rest with the candidate.*
- (g) *All workings must be shown.*

QUESTION 1

REQUIRED

- (a) Contrast Return on Capital Employed (ROCE) with Residual Income (RI) and describe briefly the merits of each of these performance measures. (7 marks)
- (b) Describe how risk may be incorporated into the capital investment decision-making process. (7 marks)
- (c) Explain why a company may calculate a weighted-average cost of capital for use in capital investment project appraisal. (6 marks)

(Total 20 marks)

QUESTION 2

A company has a single product with a selling price of £15.00 per unit. The company is currently operating at full production capacity of 120,000 units per annum. Annual costs are as follows:

Direct materials	£510,000
Direct labour	£370,000
Variable overheads	£140,000
Fixed overheads	£620,000

The company is proposing to increase production capacity by 30,000 units per annum by changing its shift working arrangements. All direct workers would receive a premium of 10% on the existing labour rate and hourly production output would be expected to increase by 5%. The quantity of direct material required per unit of output would remain unchanged, but a price reduction of 2% would be received on all direct materials if annual quantities purchased increase by more than 20%. Fixed overheads would increase by £70,000 per annum whilst variable overheads per unit of output would remain unchanged. Additional sales of 30,000 units per annum would be expected without a reduction in the selling price.

REQUIRED

- (a) Prepare a statement of the annual sales, costs (by element) and profit under each of the following headings:
- (i) the existing situation (3 marks)
 - (ii) the **changes** (+ or -) to (i) above as a consequence of producing and selling 30,000 additional units by revised shift working (show clear workings for **each** change calculation) (9 marks)
 - (iii) the introduction of revised shift working. (3 marks)
- (b) Demonstrate on a graph the total expenditure on direct materials for output ranging from 0 to 150,000 units per annum. (5 marks)

(Total 20 marks)

QUESTION 3

The following production costs (allocated and apportioned), for a typical period, relate to four components manufactured by a company for use in final product assembly:

	Component			
	A	B	C	D
Variable costs (£000):				
Materials	5	48	60	62
Labour	5	32	50	46
Overheads	1	5	10	12
Fixed costs (£000)	6	40	60	60

The following additional information is available:

- (1) Production (units) per period:

Component A	5,000
Component B	30,000
Component C	46,000
Component D	22,000

- (2) Fixed production costs per period directly incurred by individual components:

Component A	£2,000
Component B	£15,000
Component C	£22,000
Component D	£20,000

- (3) General fixed production costs, apportioned to the four components, are £107,000 per period.

- (4) Components of comparable quality are available from an outside source at the following prices per unit:

Component A	£3.00
Component B	£3.20
Component C	£3.60
Component D	£7.10

General fixed production costs could be reduced by £33,000 per period if all four components are bought-in.

REQUIRED

- (a) Determine whether any, and if so which, of the components should be bought-in. (14 marks)

- (b) Calculate the additional costs that would be incurred per period if all of the components were bought-in. (2 marks)

- (c) State **two** other factors that might influence the decision whether to continue to manufacture the components or to buy them in instead. (4 marks)

(Total 20 marks)

QUESTION 4

A company incurred the following variable production costs for a period:

	£
Direct materials	26,570
Direct labour	21,820
Variable overheads	3,135

No stocks of raw materials or work-in-progress are held. 12,600 units of the company's single product were produced in the period. The standard price of the single raw material is £5.20 per kg and the standard direct labour rate is £7.00 per hour. Variable production overheads are absorbed on the basis of standard direct labour hours.

The following variances have been calculated for the period:

Direct material price variance	£466	Adverse
Direct material usage variance	£104	Favourable
Direct labour rate variance	£85	Adverse
Direct labour efficiency variance	£315	Favourable
Variable overhead expenditure variance	£30	Adverse
Variable overhead efficiency variance	£45	Favourable

REQUIRED

- (a) Determine the total standard variable production cost per unit of the product, analysed in as much detail as possible. (10 marks)
- (b) Calculate the:
- (i) actual direct labour hours worked
 - (ii) actual direct materials used. (6 marks)
- (c) Identify **two** possible causes of the direct labour efficiency variance in the period. (4 marks)

(Total 20 marks)

QUESTION 5

A company is considering investment in a project to expand its production capacity. Capital expenditure of £1.6 million (Year 0) would be required to complete the capacity expansion. The expenditure would be followed by gradual utilisation of the increased capacity. Estimates of incremental profit/loss (net of depreciation of the capital expenditure on a straight-line basis over 8 years) following the investment are:

	£000
Year 1	(60)
Year 2	80
Year 3	160
Year 4	200
Years 5 – 8	250 per annum

No residual value is expected after 8 years. The cost of capital is 12% per annum. Discount factors at 12% are as follows:

Year 1	0.893
Year 2	0.797
Year 3	0.712
Year 4	0.636
Year 5	0.567
Year 6	0.507
Year 7	0.452
Year 8	0.404

REQUIRED

- (a) Calculate the average annual Accounting Rate of Return (%) of the project. (4 marks)
- (b) Calculate the payback period of the project. (5 marks)
- (c) Outline the limitations of the methods used in (a) and (b) above to evaluate the project. (4 marks)
- (d) Use a discounted cash flow method to evaluate the project. (5 marks)
- (e) State whether the investment is financially worthwhile. Explain your reasoning. (2 marks)

(Total 20 marks)

QUESTION 6

Summary figures from the first draft of a company's budgets for the year ahead include:

Profit & Loss Account	£000
Sales (on credit)	2,880
Cost of goods sold	<u>1,800</u>
Gross profit	1,080
Expenses (including depreciation £58,000)	<u>972</u>
Net profit	<u>108</u>

List of Balance Sheet items (year end)

Shareholders funds	513
Bank overdraft	106
Creditors	248
Fixed assets (net book value)	287
Stock	340
Debtors	240

The following **separate** changes to the draft budget assumptions are being considered:

- (1) Increase budgeted sales to £2,976,000 on the assumption of higher selling prices, with sales volume unchanged
- (2) Reduce the cost of goods sold to 60% of sales (assume year-end stock valuation unchanged)
- (3) Increase depreciation to £67,000
- (4) Increase the period of credit granted to debtors by one month.

REQUIRED

- (a) Determine the budgeted working capital (£000) before any of the above changes to budget assumptions. (2 marks)
- (b) Determine the revised balance sheet items (£000) as a result of **each separate** changed assumption (1 to 4 above).

NB Ignore all items that do not change in each case.

(13 marks)

- (c) Calculate the revised budgeted gross profit margin (%), and the revised budgeted net profit (£000), if **all four** changed assumptions are incorporated in the budget. (5 marks)

(Total 20 marks)

Education Development International plc

The Old School Holly Walk Leamington Spa Warwickshire CV32 4GL United Kingdom

Customer Service: +44 (0) 8707 202 909 Fax: +44 (0) 1926 887676

Email: customerservice@ediplc.com