Planning, Control and Performance Management

ACCA CERTIFIED ACCOUNTING TECHNICIAN EXAMINATION

ADVANCED LEVEL

TUESDAY 8 JUNE 2004

QUESTION PAPER

Time allowed **3 hours**

ALL FOUR questions are compulsory and MUST be answered

Paper T7

The Association of Chartered Certified Accountants

All FOUR questions are compulsory and MUST be attempted

1 Matthews Ltd is a small company operating in the pottery industry. Its board of directors believes that managers are best motivated by financial incentives. The company pays a monthly bonus of 10% of profit earned in their respective divisions to the divisional managers. Managers are given autonomy over production and sales matters.

The company is split into four divisions. The Eastern division has faced a steady demand for its product with some seasonal variation. The manager of the Eastern division, however, has reported significantly increased profits in May 2004. The board of directors is now questioning the size of her bonus payment, particularly as she has already resigned and will leave the company in June 2004.

Eastern division profit and loss accounts for the last two months are shown below. Matthews Ltd uses an absorption costing system.

Profit and Loss Account for the month ended

	30 April 2004		31 May 2004	
	£000	£000	£000	£000
Sales		350·0		280·0
Opening stock finished goods	9·0		9·0	
Variable production cost	200·0		400·0	
Absorbed fixed production cost	100·0		200·0	
Closing stock finished goods	(9·0)		(369·0)	
Cost of sales		(300·0)		(240·0)
(Under)/over absorption		0·0		100·0
Gross profit		50·0		140·0
Fixed selling and administration expenses		(10·0)		(10·0)
Variable selling and administration expenses		(35·0)		(28·0)
Profit before bonus		5·0		102·0
Bonus		(0·5)		(10·2)
Net Profit		4·5		91·8

The following information is also available

1. Selling price per case of finished product was £350 in both months
2. Variable production cost was £200 per case in both months
3. Fixed production overheads are recovered on the basis of budgeted monthly production of 1,000 cases
4. Actual fixed production overheads were £100,000 in each month, exactly as budgeted.

Required:

(a) Calculate the number of cases produced and the number of cases sold per month in both April and May 2004. (4 marks)

(b) Redraft the above profit and loss accounts on a marginal costing basis for both April and May 2004 and calculate the bonus to be paid to the Eastern division manager in each month if the bonus was set at 10% of marginal costing profit. (12 marks)

(c) Write a report to the board of directors of Matthews Ltd which will

(i) explain, with supporting figures, any differences between the net of bonus profit figures in (b) and those in the absorption costing statements;

(ii) discuss any apparent problems associated with the performance of the Eastern division in May 2004 even though its absorption costing profit has improved;

(iii) discuss the wisdom of basing bonus payments on profits calculated on an absorption costing basis; and

(iv) suggest and justify two alternative bonus schemes which might be improvements on that currently operated. (15 marks)

Matthews' Western division anticipates steadily growing demand for its products, subject to some seasonal variation. Recently it has employed the services of a statistician to help forecast sales. The following extracts from the statistician's report are available.

Based on linear regression analysis the quarterly trend in sales units for the Western division may be represented by the equation:

$y = 1{,}500 + 60x$
where
y = forecast sales trend in cases per quarter
x = the quarter number, where the first quarter of the year 2000 = 1, the second quarter of the year 2000 = 2, etc.

The average seasonal variation in sales follow an additive model with the following quarterly variations.

Quarter	1	2	3	4
Seasonal Variation (Cases)	+50	–40	–60	+50

(Note: a quarter is a period of 3 months)

(d) In the context of a time series analysis of sales, explain the meaning of the terms 'trend' and 'seasonal variation'. (4 marks)

(e) Use the information provided by the statistician to forecast sales in cases for the last quarter of 2004 for the Western division. (5 marks)

(40 marks)

2 Mortensen plc manufactures wooden toys. It uses a standard costing system to control costs. The cutting department cuts the shapes which are sold as toy animals. The process is very labour intensive and requires highly skilled labour to minimise the wastage of the expensive hardwood used.

The standard cost card for a set of toy animals is given below.

		£
Hardwood	0·1 cubic metres at £160 per cubic metre	16·00
Direct labour	30 minutes at £9 per hour	4·50
Fixed overhead	30 minutes at £4 per direct labour hour	2·00
Total cost		22·50

Fixed overhead absorption rates are based upon budgeted monthly fixed overheads of £26,000 and a budgeted monthly output of 13,000 sets of animals.

All stocks are recorded at standard cost.

In the most recent month 14,000 sets of animals were made using 1,600 cubic metres of hardwood. Purchases for the period were 1,800 cubic metres of hardwood at £150 per cubic metre. 8,000 direct labour hours were worked and paid at £9·25 per hour. Actual fixed overheads were £23,000 for the month.

Required:

(a) Calculate the following variances from standard cost for the most recent month:

(i) Raw material price
(ii) Raw material usage
(iii) Labour rate
(iv) Labour efficiency
(v) Fixed overhead expenditure
(vi) Fixed overhead volume
(vii) Fixed overhead capacity
(viii) Fixed overhead efficiency (10 marks)

(b) Explain the meaning and possible causes of the raw material and fixed overhead variances you have calculated in part (a). (10 marks)

(20 marks)

3 Perry plc is a large conglomerate company structured on a divisional basis. It seeks to maximise investor wealth. Head office avoids day to day involvement in divisional affairs and only intervenes if performance is considered unsatisfactory. Divisional performance is measured by residual income.

One of Perry's larger divisions operates a chain of high class hotels throughout the United Kingdom. The division's mission statement is 'To be the hotel of first choice for business users and tourists'. Although the chain has generally been popular with tourists it is not proving quite so popular with business users and conference organisers. Competition in the top segment of the hotel market is fierce, with customers expecting the highest standards of facilities, service and catering. Over the last two years the division has invested a large amount of money in modernising its hotels including the improvement of bedrooms and public rooms, installation of gymnasia and swimming pools and the information technology features required by business travellers. A large amount of money has also been spent on staff training to improve service levels and on a television advertising campaign to promote the improved hotels to business users.

Head office is concerned that the performance of the hotel chain appears to have declined over the last few years despite this expenditure.

The following figures are available:

	£ million		
	2001	2002	2003
Capital employed	50	70	90
Operating profit	15	16	17

The cost of capital applicable to the hotel division is 20% per annum.

Required:

(a) Calculate the residual income for the hotel chain for each of the three years. (3 marks)

(b) Discuss the advantages and disadvantages of residual income as a divisional performance measure. (5 marks)

(c) Explain the advantages to Perry plc of a balanced scorecard approach to divisional performance measurement. (4 marks)

(d) Suggest for each of the following headings two critical success factors suitable for the hotel chain:

(i) financial success;

(ii) customer satisfaction;

(iii) process efficiency;

(iv) organisational learning and growth.

For each critical success factor suggest one key performance indicator suitable for the hotel chain. (8 marks)

(20 marks)

4 Taylor Ltd manufactures a single product using a labour intensive production process. Its quality control department tests the final product before it leaves the factory and at present 20% of its pre-inspection output is rejected and scrapped. Scrap units have no value and cannot be reworked. Taylor builds the cost of scrapped units into the cost of good production.

A standard cost card for Taylor's product under its current production method is given below

	£ per unit
Direct material 3 kgs at £5 per kg	15·00
Direct labour (variable)	10·00
Variable overhead	5·00
Cost pre-inspection per unit produced	30·00
Cost of rejects	7·50
Variable cost per good unit	37·50
Selling price per good unit	60·00
Contribution per good unit	£22·50

Total fixed overheads are budgeted at £148,500 per month. Taylor currently sells 9,000 units per month. Negligible stocks are held.

Two proposals are being considered to reduce the reject rate:

Proposal 1. To automate the process by hiring a machine for £120,000 per month. This would lead to a 50% reduction in labour cost per unit and the quality of the manufacturing process would improve so that reject rates would fall to 5% of pre-inspection output. Variable overhead and material cost per unit (pre-inspection) would be unchanged. Existing fixed overheads would be unchanged.

Proposal 2. To continue with the present labour intensive operations and to introduce a total quality management programme. The aim of this programme would be to reduce the reject rate to zero within the coming year.

Required:

(a) Calculate the break even point in good units per month for the current manufacturing process. (2 marks)

(b) Calculate the break even point in good units per month for the automated process under proposal 1. (5 marks)

(c) Calculate the output level in good units per month at which proposal 1 and the current manufacturing process would have the same total cost. Comment briefly on your result. (5 marks)

(d) In a total quality management programme, such as proposal 2, quality-related costs are commonly categorised under the headings of

Internal failure costs
External failure costs
Appraisal costs
and Prevention

Explain the meaning of each of these terms and give one example of each type of cost in a manufacturing business such as Taylor Ltd. (8 marks)

(20 marks)

End of Question Paper