

Planning, Control and Performance Management

ACCA CERTIFIED ACCOUNTING TECHNICIAN EXAMINATION
ADVANCED LEVEL

TUESDAY 6 JUNE 2006

QUESTION PAPER

Time allowed **3 hours**

ALL FOUR questions are compulsory and **MUST** be answered

Do not open this paper until instructed by the supervisor

This question paper must not be removed from the examination
hall

The Association of Chartered Certified Accountants

Paper T7



ALL FOUR questions are compulsory and MUST be attempted

- 1** Tees plc's main product, Green, is nearing the end of its life. A replacement product, Brace, has been designed and test marketed and the company is trying to decide when to replace Green with Brace. Tees plc only has the capability to produce one of the two products at a time.

Sales of Green are expected to be 100,000 units in the first quarter of 2007 and are forecast to fall after that so that each quarter's sales will be 10% less than those of the previous quarter. Green has a selling price of £14 per unit and its contribution to sales ratio (C/S ratio) is 40%. The fixed costs of making Green in 2007 will be £200,000 per quarter.

Test market results for Brace were very good and demand for similar products is growing rapidly. Tees plc believes that sales of Brace can be predicted by the following equation:

$$Y = 80,000 + 6,000 T.$$

Where

Y = sales of Brace in units per quarter.

T = time, measured in quarters. For the first quarter of 2007 (that is January to March 2007), T = 1; for the second quarter of 2007, T = 2; etc.

The selling price of the Brace will be £16 and its contribution per unit will be £6.

Fixed costs will increase to £240,000 per quarter if Green is replaced by Brace.

Required:

- (a) Prepare a budgeted profit statement, on a quarterly basis, for the year ending 31 December 2007 under each of the following circumstances:**

- (i) **Tees plc continues to sell Green and does not introduce Brace in 2007.** (6 marks)
(ii) **Tees plc introduces Brace and discontinues Green as from 1 January 2007.**

(Your budget statements should clearly identify the sales revenue, contribution and profit for each quarter, and in total for the year. Present your figures in £000 and work to the nearest £000). (8 marks)

- (b)** Tees' management accountant believes that in addition to the above figures some other factors need to be taken into account before making a decision. He explains that to avoid disruption of the production of Tees' other products the changeover between Green and Brace must take place on either 1 January 2007 or 1 July 2007 and that the costs of changeover will differ depending upon which date is chosen. He has collected the following information.

1. Some of the machinery used to make the Green will no longer be required for the Brace. The written down value of this machinery will be £250,000 at 1 January 2007, and £220,000 by 1 July 2007. Its net realisable value at 1 January 2007 will be £140,000, but by 1 July 2007 it will be £30,000.
2. Some redundancies will result from the change of products. Redundancy payments of £40,000 will be made if the changeover occurs on 1 January, but these will rise to £50,000 by 1 July. The five administration workers concerned are each paid £20,000 per annum and will not be replaced. Their wages are not included in the costs given in part (a).

Required:

Using your results from part (a) and the information given above, prepare two statements showing the incremental costs and revenues for the year ending 31 December 2007 of changing over from Green to Brace on either 1 January 2007 or 1 July 2007. Give a brief explanation of your treatment of each item and advise Tees plc of the most profitable changeover date. (14 marks)

- (c) Explain what is meant by the product life cycle. Describe the four stages of the product life cycle and explain its importance in sales forecasting.** (12 marks)

(40 marks)

2 Hickman Ltd uses a standard marginal costing system to control the costs of its only product. Standard costs for the product are given below.

	£ per unit
Direct material Z: 2 kg at £4.00 per kg	8.00
Direct labour: 3 hours at £7.00 per hour	21.00
Standard variable cost per unit	£29.00

During the most recent period 1,400 units of the product were made using 2,700 kilograms of Z costing £4.23 per kilogram, and 4,000 direct labour hours costing a total of £30,000. Actual fixed overheads for the period were £205,000 as compared to a budgeted £200,000. No raw material stocks are carried.

Required:

(a) Calculate the following variances and prepare a statement reconciling actual and standard cost for the period:

- (i) direct material price variance;
- (ii) direct material usage variance;
- (iii) direct labour rate variance;
- (iv) direct labour efficiency variance;
- (v) fixed overhead expenditure variance.

(13 marks)

(b) The management accountant of Hickman proposes a more detailed analysis of the direct material price variance. He feels this is appropriate since the market price of Z has recently increased significantly due to a world shortage of this material. Since the standard price of Z was set the price index for Z has risen from 110 to 140. He suggests the following analysis:

Material Z analysis of price variance

Actual kilograms at actual cost per kilogram 2,700 kilograms × £4.23 per kilogram = £11,421	}	£2,322 Fav controllable price variance
Actual kilograms at revised standard cost (1) per kilogram 2,700 kilograms × £5.09 per kilogram = £13,743		
Actual kilograms at standard cost per kilogram 2,700 kilograms × £4.00 per kilogram = £10,800	}	£2,943 Adv non-controllable price variance

Note (1) Revised standard cost per kilogram = $£4.00 \times \frac{140}{110} = £5.09$.

Required:

As an Accounting Technician working for Hickman Ltd, write a short memorandum to the production manager explaining the meaning of the controllable and non-controllable price variances calculated by the management accountant.

(7 marks)

(20 marks)

- 3 Lewisville is a town with a population of 100,000 people. The town council of Lewisville operates a bus service which links all parts of the town with the town centre. The service is non profit seeking and its mission statement is 'to provide efficient, reliable and affordable public transport to all the citizens of Lewisville.' Attempting to achieve this mission often involves operating services that would be considered uneconomic by private sector bus companies, due either to the small number of passengers travelling on some routes or the low fares charged. The majority of the town council members are happy with this situation as they wish to reduce traffic congestion and air pollution on Lewisville's roads by encouraging people to travel by bus rather than by car.

However, one member of the council has recently criticised the performance of the Lewisville bus service as compared to those operated by private sector bus companies in other towns. She has produced the following information:

**Lewisville Bus Service
Summarised Income and Expenditure Account
Year ending 31 March 2006**

	£'000	£'000
Passenger fares		1,200
Staff wages	600	
Fuel	300	
Depreciation	280	
	<hr/>	1,180
Surplus		<hr/> 20 <hr/>

**Summarised Balance Sheet as at
31 March 2005.**

	£'000	£'000
Fixed assets (net)		2,000
Current assets		
Stock	240	
Cash	30	
	<hr/>	
	270	
Less creditors due within one year	60	
	<hr/>	
Net current assets		210
Total assets less liabilities		<hr/> 2,210 <hr/>
Ordinary share capital (£1 shares)		2,000
Reserves		210
		<hr/> 2,210 <hr/>

**Operating Statistics for the year ended
31 March 2006**

Total passengers carried	2,400,000 passengers
Total passenger miles travelled	4,320,000 passenger miles

**Private sector bus companies
Industry average ratios
Year ended 31 March 2006.**

Return on capital employed	10%
Return on sales (net margin)	30%
Asset turnover	0.33 times
Average cost per passenger mile	37.4p

Required:

(a) Calculate the following ratios for the Lewisville bus service

- (i) Return on capital employed (based upon opening investment);**
- (ii) Return on sales (net margin);**
- (iii) Asset turnover;**
- (iv) Average cost per passenger mile.**

(4 marks)

(b) Explain the meaning of each ratio you have calculated. Discuss the performance of the Lewisville bus service using the four ratios.

(10 marks)

(c) Another council member suggests that the performance of the bus service should be assessed on the basis of economy, effectiveness and efficiency.

Required:

Explain the meaning of the following terms in the context of performance measurement and suggest a measure of each one appropriate to a bus service.

- (i) Economy;**
- (ii) Effectiveness;**
- (iii) Efficiency.**

(6 marks)

(20 marks)

- 4 Rathbone plc is preparing its budgets for the coming year. It expects to be able to sell 5,000 units of its only product, the Graham, in January 2007. Sales are then expected to rise to 5,500 units in February and 7,000 units in March and then remain stable for the rest of the year.

Rathbone plc aims to carry a finished goods stock at the end of each month equal to 10% of the following month's sales. Each Graham takes four hours labour to make.

Rathbone's 138 production workers are employed on contracts that require them to work a minimum of 160 hours per month and are each paid £1,280 per month. Production workers are highly skilled and require a minimum of one year's training. In the short term it is not possible to recruit any more production workers. Any labour hours required in excess of 160 hours per worker are made up by overtime that is paid at basic rate plus an overtime premium of 50%.

Required:

(a) Prepare, on a monthly basis, for the first three months of 2007

- (i) a production budget in units, showing opening and closing stocks of finished goods (6 marks)
- (ii) a labour budget showing both hours and labour cost. (6 marks)

(Assume that all production workers work at least 160 hours per month)

- (b) Recent pay negotiations with the workforce have proved difficult and there is a possibility that workers will refuse to work overtime in 2007. If this does occur Rathbone intends to build up stocks of the Graham to as high a level as possible from January onwards, whilst as far as is possible satisfying demand in each month. Opening stocks for January 2007 will be in line with company policy.

Required:

For the first three months of 2007, prepare the following monthly budgets on the assumption that the workforce refuses to work overtime:

- (i) a labour budget showing both hours and labour cost. (2 marks)

(Assume that all production workers work 160 hours per month)

- (ii) a production budget in units, showing opening and closing stocks of finished goods. (6 marks)

(20 marks)

End of Question Paper