Fundamentals Level – Skills Module

Performance Management

Monday 13 December 2010

Paper F5

Time allowed
Reading and planning: 15 minutes
Writing: 3 hours

ALL FIVE questions are compulsory and MUST be attempted.

Formulae Sheet is on page 8.

Do NOT open this paper until instructed by the supervisor.

**During reading and planning time only the question paper may
be annotated. You must NOT write in your answer booklet until
instructed by the supervisor.**

This question paper must not be removed from the examination hall.

ACCA

The Association of Chartered Certified Accountants

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The question paper begins on page 3.

ALL FIVE questions are compulsory and MUST be attempted

1 Carad Co is an electronics company which makes two types of televisions – plasma screen TVs and LCD TVs. It operates within a highly competitive market and is constantly under pressure to reduce prices. Carad Co operates a standard costing system and performs a detailed variance analysis of both products on a monthly basis. Extracts from the management information for the month of November are shown below:

		Note
Total number of units made **and** sold	1,400	1
Material price variance	$28,000 A	2
Total labour variance	$6,050 A	3

Notes

(1) The budgeted total sales volume for TVs was 1,180 units, consisting of an equal mix of plasma screen TVs and LCD screen TVs. Actual sales volume was 750 plasma TVs and 650 LCD TVs. Standard sales prices are $350 per unit for the plasma TVs and $300 per unit for the LCD TVs. The actual sales prices achieved during November were $330 per unit for plasma TVs and $290 per unit for LCD TVs. The standard contributions for plasma TVs and LCD TVs are $190 and $180 per unit respectively.

(2) The sole reason for this variance was an increase in the purchase price of one of its key components, X. Each plasma TV made and each LCD TV made requires one unit of component X, for which Carad Co's standard cost is $60 per unit. Due to a shortage of components in the market place, the market price for November went up to $85 per unit for X. Carad Co actually paid $80 per unit for it.

(3) Each plasma TV uses 2 standard hours of labour and each LCD TV uses 1·5 standard hours of labour. The standard cost for labour is $14 per hour and this also reflects the actual cost per labour hour for the company's permanent staff in November. However, because of the increase in sales and production volumes in November, the company also had to use additional temporary labour at the higher cost of $18 per hour. The total capacity of Carad's permanent workforce is 2,200 hours production per month, assuming full efficiency. In the month of November, the permanent workforce were wholly efficient, taking exactly 2 hours to complete each plasma TV and exactly 1·5 hours to produce each LCD TV. The total labour variance therefore relates solely to the temporary workers, who took twice as long as the permanent workers to complete their production.

Required:

(a) Calculate the following for the month of November, showing all workings clearly:

(i) The sales price variance and sales volume contribution variance; (6 marks)

(ii) The material price planning variance and material price operational variance; (2 marks)

(iii) The labour rate variance and the labour efficiency variance. (7 marks)

(b) Explain the reasons why Carad Co would be interested in the material price planning variance and the material price operational variance. (5 marks)

(20 marks)

2 The Accountancy Teaching Co (AT Co) is a company specialising in the provision of accountancy tuition courses in the private sector. It makes up its accounts to 30 November each year. In the year ending 30 November 2009, it held 60% of market share. However, over the last twelve months, the accountancy tuition market in general has faced a 20% decline in demand for accountancy training leading to smaller class sizes on courses. In 2009 and before, AT Co suffered from an ongoing problem with staff retention, which had a knock-on effect on the quality of service provided to students. Following the completion of developments that have been ongoing for some time, in 2010 the company was able to offer a far-improved service to students. The developments included:

- A new dedicated 24 hour student helpline
- An interactive website providing instant support to students
- A new training programme for staff
- An electronic student enrolment system
- An electronic marking system for the marking of students' progress tests. The costs of marking electronically were expected to be $4 million less in 2010 than marking on paper. Marking expenditure is always included in cost of sales

Extracts from the management accounts for 2009 and 2010 are shown below:

	2009		2010	
	$'000	$'000	$'000	$'000
Turnover		72,025		66,028
Cost of sales		(52,078)		(42,056)
Gross profit		19,947		23,972
Indirect expenses:				
Marketing	3,291		4,678	
Property	6,702		6,690	
Staff training	1,287		3,396	
Interactive website running costs	–		3,270	
Student helpline running costs	–		2,872	
Enrolment costs	5,032		960	
Total indirect expenses		(16,312)		(21,866)
Net operating profit		3,635		2,106

On 1 December 2009, management asked all 'freelance lecturers' to reduce their fees by at least 10% with immediate effect ('freelance lecturers' are not employees of the company but are used to teach students when there are not enough of AT Co's own lecturers to meet tuition needs). All employees were also told that they would not receive a pay rise for at least one year. Total lecture staff costs (including freelance lecturers) were $41·663 million in 2009 and were included in cost of sales, as is always the case. Freelance lecturer costs represented 35% of these total lecture staff costs. In 2010 freelance lecture costs were $12·394 million. No reduction was made to course prices in the year and the mix of trainees studying for the different qualifications remained the same. The same type and number of courses were run in both 2009 and 2010 and the percentage of these courses that was run by freelance lecturers as opposed to employed staff also remained the same.

Due to the nature of the business, non-financial performance indicators are also used to assess performance, as detailed below.

	2009	2010
Percentage of students transferring to AT Co from another training provider	8%	20%
Number of late enrolments due to staff error	297	106
Percentage of students passing exams first time	48%	66%
Labour turnover	32%	10%
Number of student complaints	315	84
Average no. of employees	1,080	1,081

Required:

Assess the performance of the business in 2010 using both financial performance indicators calculated from the above information AND the non-financial performance indicators provided.

NOTE: Clearly state any assumptions and show all workings clearly. Your answer should be structured around the following main headings: turnover; cost of sales; gross profit; indirect expenses; net operating profit. However, in discussing each of these areas you should also refer to the non-financial performance indicators, where relevant.

(20 marks)

3 The Cosmetic Co is a company producing a variety of cosmetic creams and lotions. The creams and lotions are sold to a variety of retailers at a price of $23·20 for each jar of face cream and $16·80 for each bottle of body lotion. Each of the products has a variety of ingredients, with the key ones being silk powder, silk amino acids and aloe vera. Six months ago, silk worms were attacked by disease causing a huge reduction in the availability of silk powder and silk amino acids. The Cosmetic Co had to dramatically reduce production and make part of its workforce, which it had trained over a number of years, redundant.

The company now wants to increase production again by ensuring that it uses the limited ingredients available to maximise profits by selling the optimum mix of creams and lotions. Due to the redundancies made earlier in the year, supply of skilled labour is now limited in the short-term to 160 hours (9,600 minutes) per week, although unskilled labour is unlimited. The purchasing manager is confident that they can obtain 5,000 grams of silk powder and 1,600 grams of silk amino acids per week. All other ingredients are unlimited. The following information is available for the two products:

	Cream	Lotion
Materials required: silk powder (at $2·20 per gram)	3 grams	2 grams
– silk amino acids (at $0·80 per gram)	1 gram	0·5 grams
– aloe vera (at $1·40 per gram)	4 grams	2 grams
Labour required: skilled ($12 per hour)	4 minutes	5 minutes
– unskilled (at $8 per hour)	3 minutes	1·5 minutes

Each jar of cream sold generates a contribution of $9 per unit, whilst each bottle of lotion generates a contribution of $8 per unit. The maximum demand for lotions is 2,000 bottles per week, although demand for creams is unlimited. Fixed costs total $1,800 per week. The company does not keep inventory although if a product is partially complete at the end of one week, its production will be completed in the following week.

Required:

(a) On the graph paper provided, use linear programming to calculate the optimum number of each product that the Cosmetic Co should make per week, assuming that it wishes to maximise contribution. Calculate the total contribution per week for the new production plan. All workings MUST be rounded to 2 decimal places.

(14 marks)

(b) Calculate the shadow price for silk powder and the slack for silk amino acids. All workings MUST be rounded to 2 decimal places.

(6 marks)

(20 marks)

4 The Gadget Co produces three products, A, B and C, 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 profitability. Information for the three products for the last year is as follows:

	A	B	C
Production and sales volumes (units)	15,000	12,000	18,000
Selling price per unit	$7.50	$12	$13
Raw material usage (kg) per unit	2	3	4
Direct labour hours per unit	0·1	0·15	0·2
Machine hours per unit	0·5	0·7	0·9
Number of production runs per annum	16	12	8
Number of purchase orders per annum	24	28	42
Number of deliveries to retailers per annum	48	30	62

The price for raw materials remained constant throughout the year at $1·20 per kg. Similarly, the direct labour cost for the whole workforce was $14·80 per hour. The annual overhead costs were as follows:

	$
Machine set up costs	26,550
Machine running costs	66,400
Procurement costs	48,000
Delivery costs	54,320

Required:

(a) Calculate the full cost per unit for products A, B and C under traditional absorption costing, using direct labour hours as the basis for apportionment. (5 marks)

(b) Calculate the full cost per unit of each product using activity based costing. (9 marks)

(c) Using your calculation from (a) and (b) above, explain how activity based costing may help The Gadget Co improve the profitability of each product. (6 marks)

(20 marks)

5 Some commentators argue that: 'With continuing pressure to control costs and maintain efficiency, the time has come for all public sector organisations to embrace zero-based budgeting. There is no longer a place for incremental budgeting in any organisation, particularly public sector ones, where zero-based budgeting is far more suitable anyway.'

Required:

(a) Discuss the particular difficulties encountered when budgeting in public sector organisations compared with budgeting in private sector organisations, drawing comparisons between the two types of organisations. (5 marks)

(b) Explain the terms 'incremental budgeting' and 'zero-based budgeting'. (4 marks)

(c) State the main stages involved in preparing zero-based budgets. (3 marks)

(d) Discuss the view that 'there is no longer a place for incremental budgeting in any organisation, particularly public sector ones,' highlighting any drawbacks of zero-based budgeting that need to be considered. (8 marks)

(20 marks)

Formulae Sheet

Learning curve

$Y = ax^b$

Where y = cumulative average time per unit to produce x units
a = the time taken for the first unit of output
x = the cumulative number of units produced
b = the index of learning (log LR/log2)
LR = the learning rate as a decimal

Regression analysis

$y = a + bx$

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

$$a = \frac{\sum y}{n} - \frac{b\sum x}{n}$$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Demand curve

$P = a - bQ$

$b = \dfrac{\text{change in price}}{\text{change in quantity}}$

a = price when Q = 0

End of Question Paper