Fundamentals Level – Skills Module

Performance Management

Monday 14 December 2009

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

ALL FIVE questions are compulsory and MUST be attempted.

Formulae Sheet is on page 7

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.

The Association of Chartered Certified Accountants

Paper F5

ACCA

ALL FIVE questions are compulsory and MUST be attempted

1 Secure Net (SN) manufacture security cards that restrict access to government owned buildings around the world.

The standard cost for the plastic that goes into making a card is $4 per kg and each card uses 40g of plastic after an allowance for waste. In November 100,000 cards were produced and sold by SN and this was well above the budgeted sales of 60,000 cards.

The actual cost of the plastic was $5·25 per kg and the production manager (who is responsible for all buying and production issues) was asked to explain the increase. He said 'World oil price increases pushed up plastic prices by 20% compared to our budget and I also decided to use a different supplier who promised better quality and increased reliability for a slightly higher price. I know we have overspent but not all the increase in plastic prices is my fault'

The actual usage of plastic per card was 35g per card and again the production manager had an explanation. He said 'The world-wide standard size for security cards increased by 5% due to a change in the card reader technology, however, our new supplier provided much better quality of plastic and this helped to cut down on the waste.'

SN operates a just in time (JIT) system and hence carries very little inventory.

Required:

(a) Calculate the total material price and total material usage variances ignoring any possible planning error in the figures. (4 marks)

(b) Analyse the above total variances into component parts for planning and operational variances in as much detail as the information allows. (8 marks)

(c) Assess the performance of the production manager. (8 marks)

(20 marks)

2 Big Cheese Chairs (BCC) manufactures and sells executive leather chairs. They are considering a new design of massaging chair to launch into the competitive market in which they operate.

They have carried out an investigation in the market and using a target costing system have targeted a competitive selling price of $120 for the chair. BCC wants a margin on selling price of 20% (ignoring any overheads).

The frame and massage mechanism will be bought in for $51 per chair and BCC will upholster it in leather and assemble it ready for despatch.

Leather costs $10 per metre and two metres are needed for a complete chair although 20% of all leather is wasted in the upholstery process.

The upholstery and assembly process will be subject to a learning effect as the workers get used to the new design. BCC estimates that the first chair will take two hours to prepare but this will be subject to a learning rate (LR) of 95%. The learning improvement will stop once 128 chairs have been made and the time for the 128th chair will be the time for all subsequent chairs. The cost of labour is $15 per hour.

The learning formula is shown on the formula sheet and at the 95% learning rate the value of b is –0·074000581.

Required:

(a) Calculate the average cost for the first 128 chairs made and identify any cost gap that may be present at that stage. (8 marks)

(b) Assuming that a cost gap for the chair exists suggest four ways in which it could be closed. (6 marks)

The production manager denies any claims that a cost gap exists and has stated that the cost of the 128th chair will be low enough to yield the required margin.

(c) Calculate the cost of the 128th chair made and state whether the target cost is being achieved on the 128th chair. (6 marks)

(20 marks)

3 The Western is a local government organisation responsible for waste collection from domestic households. The new management accountant of The Western has decided to introduce some new forecasting techniques to improve the accuracy of the budgeting. The next budget to be produced is for the year ended 31 December 2010.

Waste is collected by the tonne (T). The number of tonnes collected each year has been rising and by using time series analysis the new management accountant has produced the following relationship between the tonnes collected (T) and the time period in question Q (where Q is a quarter number. So Q = 1 represents quarter 1 in **2009** and Q = 2 represents quarter 2 in **2009** and so on)

T = 2,000 + 25Q

Each quarter is subject to some seasonal variation with more waste being collected in the middle quarters of each year. The adjustments required to the underlying trend prediction are:

Quarter	Tonnes
1	–200
2	+250
3	+150
4	–100

Once T is predicted the new management accountant hopes to use the values to predict the variable operating costs and fixed operating costs that The Western will be subjected to in 2010. To this end he has provided the following operating cost data for 2009.

Volume of waste	Total operating cost in 2009 (fixed + variable)
Tonnes	$'000s
2,100	950
2,500	1,010
2,400	1,010
2,300	990

Inflation on the operating cost is expected to be 5% between 2009 and 2010.

The regression formula is shown on the formula sheet.

Required:

(a) Calculate the tonnes of waste to be expected in the calendar year 2010. (4 marks)

(b) Calculate the variable operating cost and fixed operating cost to be expected in 2010 using regression analysis on the 2009 data and allowing for inflation as appropriate. (10 marks)

Many local government organisations operate incremental budgeting as one of their main budgeting techniques. They take a previous period's actual spend, adjust for any known changes to operations and then add a % for expected inflation in order to set the next period's budget.

(c) Describe two advantages and two disadvantages of a local government organisation funded by taxpayer's money using incremental budgeting as its main budgeting technique. (6 marks)

(20 marks)

4 Thatcher International Park (TIP) is a theme park and has for many years been a successful business, which has traded profitably. About three years ago the directors decided to capitalise on their success and reduced the expenditure made on new thrill rides, reduced routine maintenance where possible (deciding instead to repair equipment when it broke down) and made a commitment to regularly increase admission prices. Once an admission price is paid customers can use any of the facilities and rides for free.

These steps increased profits considerably, enabling good dividends to be paid to the owners and bonuses to the directors. The last two years of financial results are shown below.

	2008 $	2009 $
Sales	5,250,000	5,320,000
Less expenses:		
Wages	2,500,000	2,200,000
Maintenance – routine	80,000	70,000
Repairs	260,000	320,000
Directors salaries	150,000	160,000
Directors bonuses	15,000	18,000
Other costs (including depreciation)	1,200,000	1,180,000
Net profit	1,045,000	1,372,000
Book value of assets at start of year	13,000,000	12,000,000
Dividend paid	500,000	650,000
Number of visitors	150,000	140,000

TIP operates in a country where the average rate of inflation is around 1% per annum.

Required:

(a) Assess the financial performance of TIP using the information given above. (14 marks)

During the early part of 2008 TIP employed a newly qualified management accountant. He quickly became concerned about the potential performance of TIP and to investigate his concerns he started to gather data to measure some non-financial measures of success. The data he has gathered is shown below:

Table 1

	2008	2009
Hours lost due to breakdown of rides (see note 1)	9,000 hours	32,000 hours
Average waiting time per ride	20 minutes	30 minutes

Note 1: TIP has 50 rides of different types. It is open 360 days of the year for 10 hours each day

Required:

(b) Assess the *quality* of the service that TIP provides to its customers using Table 1 and any other relevant data and indicate the *risks* it is likely to face if it continues with its current policies. (6 marks)

(20 marks)

5 Stay Clean manufactures and sells a small range of kitchen equipment. Specifically the product range contains a dishwasher (DW), a washing machine (WM) and a tumble dryer (TD). The TD is of a rather old design and has for some time generated negative contribution. It is widely expected that in one year's time the market for this design of TD will cease, as people switch to a washing machine that can also dry clothes after the washing cycle has completed.

Stay Clean is trying to decide whether or not to cease the production of TD now *or* in 12 months' time when the new combined washing machine/drier will be ready. To help with this decision the following information has been provided:

1. The normal selling prices, annual sales volumes and total variable costs for the three products are as follows:

	DW	WM	TD
Selling price per unit	$200	$350	$80
Material cost per unit	$70	$100	$50
Labour cost per unit	$50	$80	$40
Contribution per unit	$80	$170	–$10
Annual sales	5,000 units	6,000 units	1,200 units

2. It is thought that some of the customers that buy a TD also buy a DW and a WM. It is estimated that 5% of the sales of WM and DW will be lost if the TD ceases to be produced.

3. All the direct labour force currently working on the TD will be made redundant immediately if TD is ceased now. This would cost $6,000 in redundancy payments. If Stay Clean waited for 12 months the existing labour force would be retained and retrained at a cost of $3,500 to enable them to produce the new washing/drying product. Recruitment and training costs of labour in 12 months' time would be $1,200 in the event that redundancy takes place now.

4. Stay Clean operates a just in time (JIT) policy and so all material cost would be saved on the TD for 12 months if TD production ceased now. Equally, the material costs relating to the lost sales on the WM and the DW would also be saved. However, the material supplier has a volume based discount scheme in place as follows:

Total annual expenditure ($)	Discount
0–600,000	0%
600,001–800,000	1%
800,001–900,000	2%
900,001–960,000	3%
960,001 and above	5%

Stay Clean uses this supplier for all its materials for all the products it manufactures. The figures given above in the cost per unit table for material cost per unit are **net** of any discount Stay Clean already qualifies for.

5. The space in the factory currently used for the TD will be sublet for 12 months on a short-term lease contract if production of TD stops now. The income from that contract will be $12,000.

6. The supervisor (currently classed as an overhead) supervises the production of all three products spending approximately 20% of his time on the TD production. He would continue to be fully employed if the TD ceases to be produced now.

Required:

(a) Calculate whether or not it is worthwhile ceasing to produce the TD now rather than waiting 12 months (ignore any adjustment to allow for the time value of money). (13 marks)

(b) Explain two pricing strategies that could be used to improve the financial position of the business in the next 12 months assuming that the TD continues to be made in that period. (4 marks)

(c) Briefly describe three issues that Stay Clean should consider if it decides to outsource the manufacture of one of its future products. (3 marks)

(20 marks)

Formulae Sheet

Learning curve

$Y = ax^b$

Where y = average cost per batch
a = cost of first batch
x = total number of batches produced
b = learning factor (log LR/log 2)
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

$P = a - bQ$

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

a = price when Q = 0

End of Question Paper