

Fundamentals Level – Skills Module

# Performance Management

Monday 8 June 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 10**

**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

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Paper

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The question paper begins on page 3.**

**ALL FIVE questions are compulsory and MUST be attempted**

1 Yam Co is involved in the processing of sheet metal into products A, B and C using three processes, pressing, stretching and rolling. Like many businesses Yam faces tough price competition in what is a mature world market.

The factory has 50 production lines each of which contain the three processes: Raw material for the sheet metal is first pressed then stretched and finally rolled. The processing capacity varies for each process and the factory manager has provided the following data:

	Processing time per metre in hours		
	Product A	Product B	Product C
Pressing	0.50	0.50	0.40
Stretching	0.25	0.40	0.25
Rolling	0.40	0.25	0.25

The factory operates for 18 hours each day for five days per week. It is closed for only two weeks of the year for holidays when maintenance is carried out. On average one hour of labour is needed for each of the 225,000 hours of factory time. Labour is paid \$10 per hour.

The raw materials cost per metre is \$3.00 for product A, \$2.50 for product B and \$1.80 for product C. Other factory costs (excluding labour and raw materials) are \$18,000,000 per year. Selling prices per metre are \$70 for product A, \$60 for product B and \$27 for product C.

Yam carries very little inventory.

**Required:**

- (a) **Identify the bottleneck process and briefly explain why this process is described as a 'bottleneck'.** (3 marks)
- (b) **Calculate the throughput accounting ratio (TPAR) for each product assuming that the bottleneck process is fully utilised.** (8 marks)
- (c) **Assuming that the TPAR of product C is less than 1:**
  - (i) **Explain how Yam could improve the TPAR of product C.** (4 marks)
  - (ii) **Briefly discuss whether this supports the suggestion to cease the production of product C and briefly outline three other factors that Yam should consider before a cessation decision is taken.** (5 marks)

**(20 marks)**

2 Oliver is the owner and manager of Oliver's Salon which is a quality hairdresser that experiences high levels of competition. The salon traditionally provided a range of hair services to female clients only, including cuts, colouring and straightening

A year ago, at the start of his 2009 financial year, Oliver decided to expand his operations to include the hairdressing needs of male clients. Male hairdressing prices are lower, the work simpler (mainly hair cuts only) and so the time taken per male client is much less.

The prices for the female clients were not increased during the whole of 2008 and 2009 and the mix of services provided for female clients in the two years was the same.

The latest financial results are as follows:

	2008		2009	
	\$	\$	\$	\$
Sales		200,000		238,500
<i>Less cost of sales:</i>				
Hairdressing staff costs	65,000		91,000	
Hair products – female	29,000		27,000	
Hair products – male			8,000	
		<u>94,000</u>		<u>126,000</u>
Gross profit		106,000		112,500
<i>Less expenses:</i>				
Rent	10,000		10,000	
Administration salaries	9,000		9,500	
Electricity	7,000		8,000	
Advertising	2,000		5,000	
Total expenses		<u>28,000</u>		<u>32,500</u>
Profit		<u>78,000</u>		<u>80,000</u>

Oliver is disappointed with his financial results. He thinks the salon is much busier than a year ago and was expecting more profit. He has noted the following extra information:

1. Some female clients complained about the change in atmosphere following the introduction of male services, which created tension in the salon.
2. Two new staff were recruited at the start of 2009. The first was a junior hairdresser to support the specialist hairdressers for the female clients. She was appointed on a salary of \$9,000 per annum. The second new staff member was a specialist hairdresser for the male clients. There were no increases in pay for existing staff at the start of 2009 after a big rise at the start of 2008 which was designed to cover two years' worth of increases.

Oliver introduced some non-financial measures of success two years ago.

	2008	2009
Number of complaints	12	46
Number of male client visits	0	3,425
Number of female client visits	8,000	6,800
Number of specialist hairdressers for female clients	4	5
Number of specialist hairdressers for male clients	0	1

**Required:**

- (a) Calculate the average price for hair services per male and female client for each of the years 2008 and 2009. (3 marks)
- (b) Assess the *financial* performance of the Salon using the data above. (11 marks)
- (c) Analyse and comment on the non-financial performance of Oliver's business, under the headings of *quality* and *resource utilisation*. (6 marks)

**(20 marks)**

**3** Crumbly Cakes make cakes, which are sold directly to the public. The new production manager (a celebrity chef) has argued that the business should use only organic ingredients in its cake production. Organic ingredients are more expensive but should produce a product with an improved flavour and give health benefits for the customers. It was hoped that this would stimulate demand and enable an immediate price increase for the cakes.

Crumbly Cakes operates a responsibility based standard costing system which allocates variances to specific individuals. The individual managers are paid a bonus only when net **favourable** variances are allocated to them.

The new organic cake production approach was adopted at the start of March 2009, following a decision by the new production manager. No change was made at that time to the standard costs card. The variance reports for February and March are shown below (Fav = Favourable and Adv = Adverse)

Manager responsible	Allocated variances	February Variance \$	March Variance \$
Production manager	Material price (total for all ingredients)	25 Fav	2,100 Adv
	Material mix	0	600 Adv
	Material yield	20 Fav	400 Fav
Sales manager	Sales price	40 Adv	7,000 Fav
	Sales contribution volume	35 Adv	3,000 Fav

The production manager is upset that he seems to have lost all hope of a bonus under the new system. The sales manager thinks the new organic cakes are excellent and is very pleased with the progress made.

Crumbly Cakes operate a JIT stock system and holds virtually no inventory.

**Required:**

**(a) Assess the performance of the production manager and the sales manager and indicate whether the current bonus scheme is fair to those concerned.** (7 marks)

In April 2009 the following data applied:

Standard cost card for one cake (not adjusted for the organic ingredient change)

Ingredients	Kg	\$
Flour	0.10	0.12 per kg
Eggs	0.10	0.70 per kg
Butter	0.10	1.70 per kg
Sugar	0.10	0.50 per kg
Total input	0.40	
Normal loss (10%)	(0.04)	
Standard weight of a cake	0.36	
Standard sales price of a cake		0.85
Standard contribution per cake after all variable costs		0.35

The budget for production and sales in April was 50,000 cakes. Actual production and sales was 60,000 cakes in the month, during which the following occurred:

<b>Ingredients used</b>	<b>Kg</b>	<b>\$</b>
Flour	5,700	\$741
Eggs	6,600	\$5,610
Butter	6,600	\$11,880
Sugar	4,578	\$2,747
Total input	23,478	\$20,978
Actual loss	(1,878)	
Actual output of cake mixture	21,600	
Actual sales price of a cake		\$0.99

All cakes produced must weigh 0.36 kg as this is what is advertised.

**Required:**

**(b) Calculate the material price, mix and yield variances and the sales price and sales contribution volume variances for April. You are not required to make any comment on the performance of the managers.**

(13 marks)

**(20 marks)**

4 Bits and Pieces (B&P) operates a retail store selling spares and accessories for the car market. The store has previously only opened for six days per week for the 50 working weeks in the year, but B&P is now considering also opening on Sundays.

The sales of the business on Monday through to Saturday averages at \$10,000 per day with average gross profit of 70% earned.

B&P expects that the gross profit % earned on a Sunday will be 20 percentage points lower than the average earned on the other days in the week. This is because they plan to offer substantial discounts and promotions on a Sunday to attract customers. Given the price reduction, Sunday sales revenues are expected to be 60% *more than* the average daily sales revenues for the other days. These Sunday sales estimates are for new customers only, with no allowance being made for those customers that may transfer from other days.

B&P buys all its goods from one supplier. This supplier gives a 5% discount on *all* purchases *if* annual spend exceeds \$1,000,000.

It has been agreed to pay time and a half to sales assistants that work on Sundays. The normal hourly rate is \$20 per hour. In total five sales assistants will be needed for the six hours that the store will be open on a Sunday. They will also be able to take a half-day off (four hours) during the week. Staffing levels will be allowed to reduce slightly during the week to avoid extra costs being incurred.

The staff will have to be supervised by a manager, currently employed by the company and paid an annual salary of \$80,000. If he works on a Sunday he will take the equivalent time off during the week when the assistant manager is available to cover for him at no extra cost to B&P. He will also be paid a bonus of 1% of the extra sales generated on the Sunday project.

The store will have to be lit at a cost of \$30 per hour and heated at a cost of \$45 per hour. The heating will come on two hours before the store opens in the 25 'winter' weeks to make sure it is warm enough for customers to come in at opening time. The store is not heated in the other weeks

The rent of the store amounts to \$420,000 per annum.

**Required:**

- (a) **Calculate whether the Sunday opening incremental revenue exceeds the incremental costs over a year (ignore inventory movements) and on this basis reach a conclusion as to whether Sunday opening is financially justifiable.** (12 marks)
- (b) **Discuss whether the manager's pay deal (time off and bonus) is likely to motivate him.** (4 marks)
- (c) **Briefly discuss whether offering substantial price discounts and promotions on Sunday is a good suggestion.** (4 marks)

**(20 marks)**



- 5 Northland's major towns and cities are maintained by local government organisations (LGO), which are funded by central government. The LGOs submit a budget each year which forms the basis of the funds received.

You are provided with the following information as part of the 2010 budget preparation.

### Overheads

Overhead costs are budgeted on an incremental basis, taking the previous year's actual expenditure and adding a set % to allow for inflation. Adjustments are also made for known changes. The details for these are:

Overhead cost category	2009 cost (\$)	Known changes	Inflation adjustment between 2009 and 2010
Property cost	120,000	None	+5%
Central wages	150,000	Note 1 below	+3%
Stationery	25,000	Note 2 below	0%

Note 1: One new staff member will be added to the overhead team; this will cost \$12,000 in 2010

Note 2: A move towards the paperless office is expected to reduce stationery costs by 40% on the 2009 spend

### Road repairs

In 2010 it is expected that 2,000 metres of road will need repairing but a contingency of an extra 10% has been agreed.

In 2009 the average cost of a road repair was \$15,000 per metre repaired, but this excluded any cost effects of extreme weather conditions. The following probability estimates have been made in respect of 2010:

Weather type predicted	Probability	Increase in repair cost
Good	0.7	0
Poor	0.1	+10%
Bad	0.2	+25%

Inflation on road repairing costs is expected to be 5% between 2009 and 2010.

### New roads

New roads are budgeted on a zero base basis and will have to compete for funds along with other capital projects such as hospitals and schools.

### Required:

- (a) Calculate the overheads budget for 2010. (3 marks)
- (b) Calculate the budgets for road repairs for 2010. (6 marks)
- (c) Explain the problems associated with using expected values in budgeting by an LGO and explain why a contingency for road repairs might be needed. (8 marks)
- (d) Explain the process involved for zero based budgeting. (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

$$P = a - bQ$$

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

$$a = \text{price when } Q = 0$$

**End of Question Paper**