ACCA FINAL ASSESSMENT

Performance Management

December 2011

Paper F5

Time allowed

Reading and planning: 15 minutes
Writing: 3 hours

All FIVE questions are compulsory and MUST be attempted.

The formulae are on page 3.

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.

Kaplan Publishing/Kaplan Financial

KAPLAN

PUBLISHING

FORMULAE

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

ALL FIVE questions are compulsory and MUST be attempted

1 SCRUM

Scrum Ltd produces two products, the Webb and the Ellis. Budgeted data relating to these products on a unit basis for August 2010 are as follows

	Webb	*Ellis*
Selling price	$150	$100
Materials	$80	$30
Salesmen's commission	$30	$20

Each unit of product incurs costs of machining and assembly. The total capacity available in August 2010 is budgeted to be 700 hours of machining and 1,000 hours of assembly, the cost of this capacity being fixed at $7,000 and $10,000 respectively for the month, whatever the level of usage made of it. The number of hours required in each of these departments to complete one unit of output is as follows :

	Webb	*Ellis*
Machining	1 hour	2 hours
Assembly	2.5 hours	2 hours

In the market Scrum operates in, selling prices are fixed by European Union directives. The permitted output of either product in August is 400 units (i.e. Brass Ltd may produce a maximum of 800 units of product). At the present controlled selling prices, the demand for the products exceeds this considerably.

Required:

(a) **Calculate Scrum's optimal production plan for August 2010, and the profit earned.** **(10 marks)**

(b) **Calculate the shadow price of an extra hour of machining, and the shadow price of an extra hour of assembly. In each case, assume that the capacity of the other department is not altered and the output maxima continue to apply.** **(6 marks)**

An external contractor has offered to supply an extra 100 machine hours provided that they are paid double the normal rate of $10 per machine hour, at $20 per hour.

Required:

(c) **Briefly discuss whether Scrum should accept the offer of additional machine hours at double the normal rate.** **(4 marks)**

(Total: 20 marks)

2   MOC

MOC makes and sells an executive game for two distinct markets in which it currently has a monopoly. The fixed costs of production per month are $20,000, and variable costs per unit produced, and sold, are $40. The monthly sales can be thought of as X, where X = X1 + X2, with X1 and X2 denoting monthly sales in their respective markets. Detailed market research has revealed the demand functions in the markets to be as follows, with prices shown as P1 and P2:

Market 1:   P1 =   55 – 0.05X1

Market 2:   P2 = 200 – 0.2X2

The management accountant believes there should be price discrimination; the price is currently $50 per game in either market.

Required:

Analyse the information for the executive game AND, given the management accountant's belief:

(a)   Calculate the price to charge in EACH market, and the quantity to produce (and sell) each month, to maximise profit.   (5 marks)

(b)   Calculate the Total Monthly Contribution for EACH market at the price and quantities calculated in part (a) and the maximum monthly profit in TOTAL.   (4 marks)

**(c)   Explain the reservations you may have about the above calculations
                                                                                                              (3 marks)**

(d)   Write a report to the management accountant to explain how this pricing strategy would change if new competitors entered the market and suggest other pricing strategies which the business may have to consider, as well as pricing strategies that a new competitor may use.   (8 marks)

(Total: 20 marks)

3   SOLID

Solid Ltd has been asked to provide a quotation for an engineering project that will take one year to complete. An analysis of the project has already been completed and the following resource requirements have been identified:

(1)   A specialised machine will be required for a total of 10 weeks. It can be hired in from a reputable supplier, who would guarantee its availability when it is required, for $2,500 per week.

(2)   The machinery has a running cost of $720 per week. This cost is incurred by the user of the machine.

(3)   It is company policy to depreciate non-current assets by 25% per year on a reducing balance basis.

(4)   Skilled labour would be required for a total of 9,000 hours during the year. The labour required could be recruited at an hourly rate of $12. Alternatively some of the employees currently working on other projects within the company could be transferred to this project. Their hourly rate is $10 per hour. If these existing employees were to be transferred to this project then they would need to be replaced on their existing project work. Replacements for their existing project work would cost $11 per hour.

(5)   Unskilled labour would be required for a total of 12,000 hours during the year. These employees would need to be recruited on a one year contract at a cost of $8 per hour.

(6)   The project would need to be supervised and it is estimated that there would be a total of 500 hours of supervision required during the year. One of the existing supervisors could undertake this work, but if he did so he would have to work a total of 300 hours overtime during the year to carry out the supervision on this project as well as his existing duties. The supervisor earns a salary of $50,000 per year for working 2,000 hours and is not paid for overtime work. If this project goes ahead the supervisor will be paid a bonus of $500, which would not be paid if the project is not undertaken.

(7)   The direct materials required for the project are Materials A and B. With regards to Material A, the total amount required for the project would have to be purchased at a cost of $15,000.

(8)   The total amount of Material B required would be 10,000 square metres. The company purchased 25,000 square metres of this material for a project two years ago at a total cost of $100,000. The earlier project used 20,000 square metres of the material and the remainder is currently held in inventory. The company does not foresee any other use for this material in the future and could sell it for $2 per square metre. The current purchase price of the material is $5 per square metre.

(9)   The company has already incurred expenditure of $25,000 in analysing the resource requirements of the project.

(10)   It is company policy to attribute overhead costs to projects using an absorption rate of 40% of prime costs.

(11)   It is company policy to add a 25% profit mark-up to total costs when setting its prices.

Required:

(a)   Prepare a statement that shows the relevant cost of the project. For <u>each</u> of the resources indicated in notes (1) to (10) <u>you must clearly explain</u> the reason for the cost value that you have used.   (15 marks)

Solid used your calculations as the basis of the quotation and then added $125,000 for profit. All costs incurred were the same as forecast.

Required:

(b)   Explain why the financial profit reports at the end of the year would not show a profit of $125,000 for the engineering project.   (5 marks)

(Total: 20 marks)

4 BWEALTH

BWealth Ltd provides a fee-based, high quality financial planning and personalised investment service to 'high net worth' retired individuals, as well as to trusts, charities and small businesses.

BWealth employees work to enhance the income of the business' long-term investors. The industry BWealth operates in is becoming more and more competitive. The Managing Partner feels that promotion of new investment products to BWealth's clients would be likely to upset their generally conservative nature and, as a result, the business has been managed with similar products for the last couple of years.

The last two years of financial results are shown below:

	2010	2009
Turnover ($000)	1,001	950
Net profit ($000)	198	190
Average debtor / trade receivables days (industry average 20 days)	19 days	21 days
Average cash balances ($000)	20	19

BWealth operates in a country where the average rate of inflation is around 3% per annum.

Required:

(a) Assess the financial performance of BWealth using the information given above. (7 marks)

During the early part of 2009, BWealth employed a newly qualified management accountant. He quickly became concerned about the potential performance of the business, 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:

Internal Business Processes

	2010	2009
Error rates in jobs done	15%	9%
Average job completion time	7 weeks	9 weeks

Customer Knowledge

	2010	2009
Number of customers	1,210	1,432
Average fee levels ($)	549	450
Market Share	12%	19%

Learning and Growth

	2010	2009
Percentage of revenue from non-core work	4%	5%
Industry average of the proportion of revenue from non-core work in similar practices	30%	25%
Employee retention rate.	60%	80%

Notes

1   Error rates measure the number of jobs with mistakes made by staff as a proportion of the number of clients serviced.

2   Core work is defined as being investment management. Non-core work is defined primarily as estate planning and retail banking. Non-core work is traditionally high margin work.

Required:

(b)   Briefly explain why non financial information is likely to give a better indication of the likely future success of the business than the financial information given in a).   (3 marks)

(c)   Assess the performance of the business with comments on all non-financial aspects separately, as well as a concluding comment on the overall performance of the business.   (10 marks)

(Total: 20 marks)

5   JAY MANUFACTURING

JAY Manufacturing budgets to make and sells 10,000 units of a single product every period.

The standard cost and revenue per unit are as follows:

		$
Selling price		400
Direct material A	5 kg at $25 per kg	125
Direct material B	3 kg at $22 per kg	66
Direct labour	3 hours at $10 per hour	30
Variable overheads	3 hours at $7 per hour	21
Standard contribution		158

The mix of materials can be varied and therefore the material usage variance can be sub-divided into mix and yield variances.

For the period under review, the actual results were as follows:

Production and sales		9,000 units

		$
Sales revenue		4,455,000
Material cost	A – 35,000 kg	910,000
	B – 50,000 kg	1,050,000
Labour cost	30,000 hours	385,000
Variable overhead		230,000

The general market prices at the time of purchase for material A and material B were $21 per kg and $19 per kg respectively. There were no opening or closing inventories during the period.

Required:

Prepare a statement detailing the variances (including planning and operational, and mix and yield variances) which reconciles the budgeted contribution and the actual contribution.

(20 marks)