Series 4 Examination 2007

MANAGEMENT ACCOUNTING

Level 3

Wednesday 28 November

Subject Code: 3723 S

Time allowed: **3 hours**

INSTRUCTIONS FOR CANDIDATES

- Answer **5** questions.
- All questions carry equal marks.
- Write your answers in blue or black ink/ballpoint. Pencil may be used only for graphs, charts, diagrams, etc.
- Begin your answer to each question on a new page.
- All workings must be shown.
- All answers must be correctly numbered but need not be in numerical order.
- You may use a calculator provided the calculator gives no printout, has no word display facilities, is silent and cordless. The provision of batteries and their condition is your responsibility.

QUESTION 1

(a) Describe the advantages of **decentralisation** and the objectives of **transfer pricing systems** for sales between divisions of decentralised companies.

(8 marks)

(b) Define, with examples, the term **semi- fixed cost** (also termed semi-variable cost or mixed cost) and state two ways in which the fixed and variable elements of such costs can be segregated.

(6 marks)

(c) Define, giving two examples, the term **service cost centre**. State why service cost centre costs in a factory need to be re-apportioned over production cost centres.

(6 marks)

(Total 20 marks)

QUESTION 2

A company produces and sells a single product.

The following variances have been calculated for a recent period:

	$
Selling price	21,600 Adverse
Material price	10,730 Adverse
Material usage	5,600 Favourable
Labour rate	4,680 Favourable
Labour efficiency	36,000 Favourable
Fixed overhead:	
Volume	45,000 Favourable
Expenditure	10,000 Favourable

The following information is also available for the period:

Actual sales value	$1,031,400
Standard material cost	$2 per kg of material
Standard labour cost (20 hours x $5 per hour)	$100 per unit of product
Actual material cost	$221,130

The production overhead is all fixed and was budgeted at $360,000, to produce 2,400 units in the period. The production overhead is absorbed on a rate per unit basis.

The company holds no stocks of raw material or finished goods.

REQUIRED

(a) Calculate the following:

(i) Actual sales in units (3 marks)
(ii) Standard selling price per unit (3 marks)
(iii) Standard material usage in kg, per unit of output (3 marks)
(iv) Actual labour cost (2 marks)
(v) Actual labour rate per hour (3 marks)
(vi) Actual fixed overhead cost (2 marks)

(b) Define the terms Ideal standard and Attainable standard.

(4 marks)

(Total 20 marks)

QUESTION 3

A company manufactures and sells a single product. The budgeted unit sales figures for the six months from January 2008 are:

January	700
February	600
March	700
April	800
May	900
June	700

The standard selling price and standard costs for each unit of the product for the period are:

Selling price $80
Material X 3 kg at $5 per kg
Material Y 2 kg at $6 per kg
Labour 2 hours at $12 per hour
Variable overhead $6 per labour hour

The following information is also available:

All sales are on credit
Debtors pay one month after sales
Closing stock of finished goods at each month end are equal to 10% of the next month's sales
Materials are purchased in the month before use, and are paid for two months after purchase
Labour and variable overhead are paid for in the month of production
Fixed production overhead is budgeted to be $4,000 per month (including depreciation of $1000)
Other fixed overhead is budgeted to be $3,000 per month (including depreciation of $800)
The cash balance at the beginning of March is expected to be $10,000 in hand.

REQUIRED

(a) Prepare for **March** only:

(i) The production budget **in units** only
(ii) The material purchase budget for **both** X and Y in **both** kg and $

(8 marks)

(b) Prepare the cash budget **for the months of March and April only**

(12 marks)

(Total 20 marks)

QUESTION 4

A company produces five products. The initial budget for 2008 is:

	Product				
$000	**V**	**W**	**X**	**Y**	**Z**
Sales	200	300	200	400	350
Variable costs:					
Direct material	50	90	70	80	80
Direct labour	60	50	50	100	90
Variable overhead	60	50	50	100	90
Fixed overhead	40	30	50	70	50
Profit/(Loss)	(10)	80	(20)	50	40

The above figures are based on 50% machine capacity usage.
Direct labour is currently fully utilised but additional labour is available if required.
The fixed costs represent a general apportionment. There are no fixed costs specific to any of the products.

Two separate proposals have been put forward with a view to maximising profit:

(i) That both products V and X be discontinued as they are loss-making
(ii) That products be treated with a protective material at an increase of 50% in unit material cost. Sales volume of treated products would be expected to double at the current selling price. The unit labour and variable overhead costs of the treatment would be negligible and should be disregarded. The fixed costs would remain unchanged

REQUIRED

(a) Recommend, with supporting figures, whether products V and X should be discontinued.

(3 marks)

(b) Recommend, with supporting figures, whether any of the products should be treated with the protective material.

(7 marks)

(c) Calculate the profit that will be earned from the optimum mix of treated and untreated products.

(2 marks)

(d) Calculate to the nearest $000 sales:

(i) The break-even point for the initial budget
(ii) The margin of safety for the optimum mix calculated in (c) above.

(8 marks)

(Total 20 marks)

QUESTION 5

A company produces two products A and B each of which pass through several activities, (cutting, shaping, drilling and inspection as well as material handling and machine set-up).

A system of Activity Based Costing is in use. The following details apply to the two products:

	Number of operations per unit of product	
Activities	**A**	**B**
Cutting	6	4
Shaping	4	3
Drilling	10	9
Inspection	1	2
Material handling	5	3
	Number of machine set- ups per batch	
Machine set-up	1	3

Budgeted production overhead costs per period for each activity, together with the cost drivers are:

	$	**Driver**
Cutting	3,500	Number of Operations
Shaping	2,450	Number of Operations
Drilling	3,800	Number of Operations
Inspection	1,050	Number of Operations
Material handling	1,200	Number of Operations
Set-up	720	Number of machine set-ups

One batch of each product is produced per period, each batch consisting of 100 units. There is a rejection rate after inspection of 20% for A and 10% for B. The scrap value of reject units is deducted from the direct material cost per good unit.

REQUIRED

(a) Calculate the cost driver rates for production overheads for each of the activities listed above.

(6 marks)

(b) Calculate the production overhead cost per good unit for each product.

(9 marks)

The following direct costs per good unit relate to products A and B:

	A	**B**
	$ per unit	$ per unit
Material (after deduction of scrap value)	54.25	56.00
Labour	41.00	40.00

REQUIRED

(c) If the company requires a gross profit margin of 20% on A and 25% on B, calculate the selling price for one unit of each product.

(5 marks)

(Total 20 marks)

QUESTION 6

A company is considering investing in a new machine in order to reduce operating costs over the forthcoming five years. The company has spent $80,000 in consultancy fees to assess the viability of two machines, A and B, the details of which are:

	Machine A	**Machine B**
	$	**$**
Initial cost	400,000	500,000
Residual value	80,000	50,000

The consultants have estimated the probability of annual cost savings as:

Machine A	**$**	
	100,000	Probability .3
	50,000	Probability .5
	20,000	Probability .2
Machine B	**$**	
	130,000	Probability .2
	80,000	Probability .5
	60,000	Probability .3

The above savings have been calculated after deduction of depreciation on a straight line basis over the five year life of each machine.

The company's cost of capital is 12% per annum. The relevant discount factors are:

Year 1	0.893
2	0.797
3	0.712
4	0.636
5	0.567

REQUIRED

(a) For each machine, calculate the expected value of the annual cash flows arising from the cost savings.

(4 marks)

(b) Evaluate each machine on the basis of the expected value of annual cash flows, using each of the following methods:

(i) Payback period
(ii) Net present value

(10 marks)

(c) Using information in the question, and your answers in b), advise the company, with reasons, whether to invest in new machinery and if so which machine to purchase.

(6 marks)

(Total 20 marks)

