MANAGEMENT ACCOUNTING

Certificate stage
June 2005

MARKING SCHEME

Question 1

(a) **(i)** Sales Budget for the year 2005/06.

Product	Quantity	Price per bed	Total sales
		£	£
Downbed	1,056	850	897,600
Dreamcast	1,176	755	887,880
			1,785,480

(2)

(ii) Production Budget for the year 2005/06.

	Downbed	Dreamcast	
Sales	1,056	1,176	*½*
Less opening stock	(75)	(64)	*1*
Add closing stock (1,056/12 = 88 x 55%)	49	54 (1,176/12 = 98 x 55%)	*1 ½*
Production	1,030	1,166	

(3)

(iii) Material usage budget

	Wood Kg	Plastic Kg	Nylon m	
Downbed	(15kg x 1,030)	(6kg x 1,030)	(17m x 1,030)	
	15,450	6,180	17,510	*1*
Dreamcast	(21kg x 1,166)	(3.5kg x 1,166)	(19m x 1,166)	
	24,486	4,081	22,154	*1*
Total	39,936	10,261	39,664	
Wastage	609	157	1,227	*1*
Requirement	40,545	10,418	40,891	

(3)

(iv) Materials purchases budget

	Wood Kg	Plastic Kg	Nylon m	
Requirement	40,545	10,418	40,891	*1*
Less opening stock	(196)	(72)	(62)	*1*
Add closing stock				
(40,545/12) x 25%	845			
(10,418/12) x 25%		218		
(40,891/12) x 25%			852	
				2
Purchase requirement	41,194	10,564	41,681	
Price per unit (£)				
June – July	4.60	5.50	21.00	
August – May (x 1.02)	4.692	5.61	21.42	
				1
Purchase cost (£)				
June – July	31,582	9,684	145,883	
August – May	161,069	49,387	744,006	
				1
(Assumes even monthly purchase)				*(6)*

(v) Labour cost budget

	Skilled £	Semi-skilled £	
Downbed			
5hrs x £14 x 1,030	72,100		
4hrs x £6.50 x 1,030		26,780	*1*
Dreamcast			
6hrs x £14 x 1,166	97,944		
4.5hrs x £6.50 x 1,166		34,106	*1*
Total	170,044	60,886	
			(2)
			16

(b) Candidates should describe the features of public sector models and indicate how the approach used is different to the private sector model.

- Incremental budgets are based on the previous budget. This is then adjusted for expected changes in the next budget period. In (a) the whole budget is driven by the limiting factor, which in this case is the sales volume.

- Rolling budgets are continuously being updated in relation to new information. The above budget will not be adjusted according to circumstances but monitored using variance analysis.

2 marks for each method only, 1 for description 1 for how it is different
Marks should be awarded for other relevant methods of budgeting
(4)

(20)

Question 2

(a)

	Roseby £	Troonsdale £	
Direct costs:			
Direct materials	262,500	180,000	
Direct labour	292,500	148,500	
Total direct costs	555,000	328,500	*1*
Mark up	277,500	164,250	*1*
Contract price	832,500	492,750	

(2)

(b) Calculation of cost per unit of cost driver:

Activity	Cost pool £	Cost driver units	Cost per unit of cost driver £
Site management	1,125,000	450,000 hours	2.50 per hour
Design offices	1,012,500	37,500 hours	27.00 per hour
Site supervisors	555,000	277,500 miles	2.00 per mile
Post installation inspections	120,000	30,000 items	4.00 per item
Purchasing department	157,500	22,500 items	7.00 per item
Payroll department	112,500	450,000 hours	0.25 per hour

1 mark per line, up to a maximum of 6

Activity based overheads:

Roseby Trust Contract

Activity	Cost per unit of cost driver £	Cost driver units	ABC cost £
Site management	2.50	15,000	37,500
Design offices	27.00	1,920	51,840
Site supervisors	2.00	7,200 (W1)	14,400
Post installation inspections	4.00	975	3,900
Purchasing department	7.00	975	6,825
Payroll department	0.25	15,000	3,750
Total overhead			**118,215**

W1 = 45 visits x 80 miles x 2

3 marks (½ mark per line)

Troonsdale NHS Trust

Activity	Cost per unit of cost driver	Cost driver units	ABC costs
	£		£
Site management	2.50	9,000	22,500
Design offices	27.00	930	25,110
Site supervisors	2.00	1,350 (W2)	2,700
Post installation inspections	4.00	615	2,460
Purchasing department	7.00	615	4,305
Payroll department	0.25	9,000	2,250
Total overhead			**59,325**

W2 = 15 visits x 45 miles x 2

½ mark per line, up to a maximum of 3

(12)

(c) Statement of Profitability

	Roseby £	Troonsdale £	
Direct costs:			
Direct materials	262,500	180,000	
Direct labour	292,500	148,500	
Total direct cost	555,000	328,500	*1*
Activity based overhead	118,215	59,325	*1*
Total cost	673,215	387,825	*1*
Price (673,215/80 x 100)	841,519	484,781	*1*

The Roseby contract results in a higher contract price than would be charged using the current method of pricing. This is because it is a more complex process and the distance that the Trust is from the factory and offices result in more overheads being absorbed into the price.

The Troonsdale contract results in a lower contract price and is therefore more competitive for bidding purposes. This is a less complex process and therefore absorbs less overheads using ABC. *2*

(6)

(20)

Question 3

(a) Statement to show the relevant costs relating to each contract:

	Munchester £	Bloomshire £	
Material A in stock (£32,400 x 0.90)	29,160		½
Material B in stock (£37,200 x 2)		74,400	½
Material A on order (£45,600 x 0.90)	41,040		½
Material A not yet ordered	90,000		½
Material C not yet ordered		106,800	½
Direct labour	129,000	165,000	½
Plant on site Bloomshire		Nil	½
Plant on site Munchester	(9,000)		½
Site foremen	Nil	Nil	½
Temporary accommodation for foremen	10,200	8,400	½
Interest	Nil	Nil	½
Central overheads	Nil	Nil	½
Penalty payment		42,000	½
Total relevant costs	290,400	396,600	
Contract price	432,000	528,000	
Net benefit	141,600	131,400	½

(7)

(b) Memorandum

To: Contracts Manager
From: Assistant Accountant
Subject: Munchester and Bloomshire Contracts

The above statement shows the net benefit that 'Pro Part' could obtain from contracts undertaken in either Munchester or Bloomshire. The statements have been prepared using the principles of relevant costs. This means that to be included, the costs should be incremental, future costs that will change as a result of the decision made. The costs that will remain the same regardless of the decision or those that are sunk costs are not relevant and therefore have been omitted. It can be seen that it would be more beneficial to 'Pro Part' if they undertake the Munchester contract as this has the highest net benefit in relevant cost terms. *2*

The relevant cost of material A, which is in stock, is not the historic cost. It is the opportunity cost of the saving that would be made if it had been used as a substitute for another material. The original cost of the material, and the cost of the committed orders are both sunk costs. *1*

The company could sell material B and buy it in January. However, this would not be worthwhile as the cost of disposal (12%) is more then the cost of financing it for the intervening period (8%). The relevant cost would be the replacement cost of buying more material B for the contracts that it would be used on next year. *1*

The relevant cost of the materials not yet purchased is the current cost. This is a future cost yet to be incurred if the contract is undertaken. *1*

Labour is not in short supply, therefore the relevant cost of both contracts is the incremental cost shown in the statement. The salary of the foreman is a fixed cost as it will not change as a result of deciding to undertake either one of the contracts. As such it can be ignored in the evaluation. *1*

Depreciation is not a cash flow. It is an accounting adjustment made to spread the impact of a cost that has been incurred in the past. There is no indication that the value of the plant will be affected by using it on either contract, therefore it should be ignored. The rental value of £9,000 is however, a relevant inflow if the North West contract is undertaken. *1*

The temporary accommodation for the foreman is an incremental cost and as such should be included. *1*

The need to finance working capital would be lessened by the progress payments being made by the customer. The interest is a notional charge and not an actual cash flow and can be ignored for both contracts. *1*

Central overhead costs can be ignored as this cost will be incurred by the company regardless of the decision. The impact of not taking either contract would be to apportion the overheads over a smaller amount of contracts. *1*

Marks should be awarded for other relevant points up to a maximum of 10 marks

(c)

- The decision whether to include fixed overheads in a relevant costing scenario depends on whether they will change as a result of the decision or course of action.

- Overheads that are directly attributable to the course of action and therefore change as a result of it are relevant. The incremental cost should be included.

- Overheads that are apportioned to a department or a project can be ignored because they will not have an incremental effect. If they remain the same to the organisation as a whole, they are not relevant. If they change they become directly attributable and should be included.

(3)

(20)

Question 4

(a) Calculation of variances:

Material price	£	
Standard cost of untreated wood used 29,450kgs x £9.50	279,775	
Actual cost of untreated wood used	262,105	
Variance	17,670F	*1*
Material usage		
Standard quantity for actual production 3,100 packs x 9kg	27,900	
Actual quantity used	29,450	
	1,550	
At standard cost per unit x £9.50	14,725 A	*1*
Labour rate		
Standard cost of labour used 12,175 hours x £8.70	105,922.5	
Actual cost of labour used	112,500	
Variance	6,577.5A	*1*
Labour efficiency		
Standard hours for actual production 3,100 packs x 4	12,400	
Actual number of hours used	12,175	
	225	
At standard cost per unit x £8.70	1,957.5F	*1*
Fixed overhead expenditure variance		
Budgeted fixed overhead (3,500 x 4 x £7.60)	106,400	
Actual fixed overhead	105,800	
	600F	*1*
Fixed overhead capacity variance		
Actual hours of input	12,175	
Budgeted hours of input (3,500 x 4)	14,000	
	1,825	
At standard rate per hour x £7.60	13,870A	*1*
Fixed overhead efficiency variance		
Standard hours to produce actual output	12,400	
Actual hours to produce output	12,175	
	225	
At standard rate per hour x £7.60	1,710F	*1*

Statement to reconcile the standard cost of production to actual cost of production for the period ended 31 May 2005.

		£	
Standard cost of production		467,170	*1*
Material variances:			
Materials price	17,670F		
Materials usage	14,725A		
Labour variances:			
Labour rate	6,577.5A		
Labour efficiency	1,957.5F		
Overhead variances			
Overhead expenditure	600F		
Overhead capacity	13,870A		
Overhead efficiency	1,710F		
Actual cost of production		480,405	*1*

2 marks for detailing variances and layout

Explanation of variances:

- The materials were purchased for less than the standard cost, however, more were required. This may indicate that they were of an inferior quality or that they could be obtained for a discounted price that was not available when the standard was set.

- The labour cost more than standard indicating that maybe more skilled labour was employed. Alternatively, it may have been necessary to pay the workers bonuses or overtime. The work was completed in a faster time than the standard time. This may be a reflection of the labour rate variance.

- The overheads were less than budgeted shown by the expenditure variance. In addition, less were absorbed because the production was not as high as budgeted. However, this was partly disguised by the fact that the labour force was more efficient.

1 mark for each relevant point to a maximum 3

(14)

(b) The potential weaknesses that may be encountered are:

- It is difficult in some cases to decide on the original standard to be used to measure performance against. If the process or product is new then this will be more difficult than if similar products exist already.
- Increased probability of dysfunctional behaviour by managers.
- Where costs are changing the standards set will soon become inappropriate.
- In calculating labour efficiency variances, no account is taken of the learning curve effect.

- Variances could misdirect managerial attention in a context of total quality management.
- Where variances are interdependent, investigation is more problematical.
- Assessment of random factors can be problematical.

1 mark per valid point to a maximum of 6

(20)

Question 5

(a)

		£	
Fixed costs:	Lease	220,000	
	Manager	30,000	
	Assistant manager	18,000	
	Health professionals	81,000	(6 x 13,500)
	Maintenance costs	28,000	
	Utilities	29,000	
	Advertising	6,500	
	Domestic	7,500	
		420,000	

1

Variable cost per guest per night:

	£
Meals (3.30 + 4.75 + 6.30)	14.35
Room cleaning (7.50/3)	2.50
Robes	3.45
Treatments (10.60 x 2)	21.20
	41.50

1

Revenue per guest per night:

Price	110.00
Treatment income	40.00
	150.00

1

Contribution per guest per night = £150.00 – £41.50 = £108.50 *1*

Breakeven point = $\frac{420{,}000}{108.50}$ = 3,871 guest nights. *1*

(5)

(b) Margin of safety

Expected occupancy = 20 guests x 365 days x 65% = 4,745 guest nights. *1*

The margin of safety is therefore 4,745 – 3,871 = 874 guest nights.

$\frac{874}{4{,}745}$ x 100 = 18.42% *1*

(2)

(c) Maximum price that could be charged:

Required contribution per guest night = $\frac{420{,}000 + 70{,}000}{4{,}745} = \frac{490{,}000}{4{,}745}$

= £103.27 *1*

Price charged: 103.27 + 41.50 = £144.77 or £145.00 per night. *1*

(2)

(d)

- All other variables remain constant.
- A single product or constant sales mix.
- Fixed costs do not change.
- Profits are calculated on a variable costing basis.
- Total cost and total revenue are linear functions of output.
- The analysis applies to the relevant range only.
- Costs can be divided into their fixed and variable cost elements.
- The analysis only applies to the short-term time horizon.

1 mark per assumption to a maximum of 4 marks

(e) Profit statement at varying occupancy levels

	60% £	65% £	70% £	
Guest days per annum	4,380	4,745	5,110	*1*
Income				
Income guest fee (x110)	481,800	521,950	562,100	
Treatments (x40.00)	175,200	189,800	204,400	
Total income	657,000	711,750	766,500	*1*
Expenditure				
Cost of meals (x 14.35)	62,853	68,091	73,329	*½*
Cost of cleaning (x 2.50)	10,950	11,863	12,775	*½*
Cost of robes (x 3.45)	15,111	16,370	17,630	*½*
Treatments (x10.60 x 2)	92,856	100,594	108,332	*½*
Lease	220,000	220,000	220,000	
Manager	30,000	30,000	30,000	
Assistant manager	18,000	18,000	18,000	
Health professionals	81,000	81,000	81,000	
Maintenance costs	28,000	28,000	28,000	
Utilities	29,000	29,000	29,000	
Advertising	6,500	6,500	6,500	
Domestic	7,500	7,500	7,500	*2*
Total expenditure	601,770	616,918	632,066	
Profit	55,230	94,832	134,434	*1*

(7)

(20)

Question 6

(a) World class Manufacturing (WCM)

- Is a philosophy that consists of a number of interrelated techniques rather than describing a single method or technique.
- It is a response to the competitive pressure of a 'global marketplace'.
- The areas that should be addressed in order to be successful in a global market are:

  Quality – Essential to improve or maintain market position.

  Lead time – Time taken between receiving orders and delivering them is crucial to market standing.

  Adaptability – The need for a product or service to be adaptable to customer requirements is essential.

  Cost – Delivery of high quality at a lower cost than competitors.

- WCM places importance on holding minimum stocks; high quality human resources; high quality training; effective design and cooperation with suppliers.
- Shift in emphasis from internally focused and cost driven management accounting information to quality driven and market orientated.
- More elevated importance given to strategic information.

1 mark per relevant point to a maximum of 6 marks.

(b) Total Quality Management (TQM)

- Emphasis on the idea that quality is all embracing.
- Quality covers outputs and inputs such as labour and materials.
- 'Get it right first time, all of the time' is the philosophy.
- Based upon the idea that to get something right the first time will cost less than rectifying faults found later in the process.
- Costs can be classified as:

  Prevention costs – *C*osts of design and training.

  Appraisal costs – Costs incurred to ensure achievement of the specified level of quality, such as inspection.

  Internal failure costs – Costs incurred as a result of quality failure before output is delivered to the customer, such as reworks and scrap.

  External failure costs – Costs incurred as a result of quality failure after output reaches the customer, such as replacement of goods.

- Important role for information systems to report quality. This would include quantitative and qualitative measures.

1 mark per relevant point to a maximum of 6 marks

(c) Value added and non-value added activities.

- Costs can be reduced by reducing the non-value added activities.
- Value added activities are those that increase the perceived worth of a product or service in the eyes of the consumer.
- This concept can be extended into a 'value chain' which places value-adding activities in a sequence to incorporate design, supply, production and marketing.
- Each stage of the value chain is treated as its predecessor's client.
- Non-value adding activities are highlighted and eliminated.

1 mark per relevant point to a maximum of 4 marks

(d) Just in time management (JIT).

- JIT is a philosophy of management aimed at elimination of waste. It involves a continuous commitment to improvement. It aims to produce the required items at the required quality and in the required quantities, at the precise time they are required.
- JIT is where output is produced as close to the time of sale as possible.
- An extension of the JIT purchasing concept, whereby delivery of materials immediately precedes their use.
- Concept attempts to eliminate stockholding that is not necessary. These costs may be explicit (storage, insurance and security) or implicit (costs of tying up capital).
- Transfers the emphasis of stockholding from purchaser to provider, therefore cooperation between the two parties is essential.
- JIT methods are appropriate in a repetitive manufacturing environment. JIT requires the manufacturing environment to be re-engineered to meet continuous repetitive production requirements rather than job or batch costing production methods.

1 mark per relevant point to a maximum of 4 marks

(20)