

MANAGEMENT ACCOUNTING

Certificate stage examination

7 December 2006

MARKING SCHEME

Question 1

(a) Labour hour overhead absorption rate:

$$\frac{\pounds 980,000}{8,000} = \pounds 122.50 \text{ per labour hour}$$

1

Unit costs:

		X £	Y £	Z £
Direct labour	(15 x £12.50)	187.50	2,000.00	937.50
Direct materials		1,650.00	850.00	2,960.00
Overheads	(15 x £122.50)	<u>1,837.50</u>	<u>19,600.00</u>	<u>9,187.50</u>
Total		3,675.00	22,450.00	13,085.00
Number of units		510	9,800	3,600
Unit cost		7.21	2.29	3.63

1 ½

½

(3)

(b) Total costs of each activity:

Activity	Production Operation £000	Maintenance £000	Technical Operatives £000	Stores £000	Packing £000	Total £000
Checking Deliveries	57 (15%)	12 (15%)	18.5625	120		207.5625
Production run set ups	190 (50%)	40 (50%)	82.5 61.875			374.375
Inspections			68.75			68.75
Packing and dispatch	133 (35%)	28 (35%)	43.3125		125	329.3125
Total	380	80	275	120	125	980

Marks awarded: 1

1

2

½

½

to a maximum of 5

Technical operatives' salaries are split as follows:

		£000
Equipment maintenance	275 x 45% =	123.75
Production set ups	275 x 30% =	82.50
Inspections	275 x 25% =	<u>68.75</u>
		275.00

The equipment maintenance is then reapportioned as follows:

		£000
Stores	123.75 x 15%	18.5625
Production set ups	123.75 x 50%	61.8750
Packing and dispatch	123.75 x 35%	<u>43.3125</u>
		123.7500

Calculation of costs per activity:

		£
Receiving and checking deliveries	£207,562.5/2,940	= 70.60 per delivery
Production set ups	£374,375 / 2,550	= 146.81 per set up
Inspections of finished goods	£68,750 / 1,440	= 47.74 per inspection
Packing and dispatch	£329,312.50 / 9,600	= 34.30 per order

2

Application of rates to unit costs:

	X £	Y £	Z £
Direct labour (15 x £12.50)	187.50	2,000.00	937.50
Direct materials	1,650.00	850.00	2,960.00
Receiving deliveries	1,200.20	1,835.60	2,824.00
Production set ups	2,642.58	3,523.44	4,404.30
Inspections of finished goods	954.80	716.10	1,432.20
Packing and dispatch	<u>1,372.00</u>	<u>2,058.00</u>	<u>1,886.50</u>
Total	8,007.08	10,983.14	14,444.50
Number of units	510	9,800	3,600
Unit cost	15.70	1.12	4.01

3

(10)

(c) Possible areas to be included in the memorandum:

ABC systems compared with absorption costing.

Using ABC systems can avoid a disproportionate amount of overheads being charged to products that are high volume. It can be argued that, it can result in a more meaningful, fairer system of overhead charging. This can avoid products being under or over priced. ABC systems are more complex than traditional absorption costing.

2

Stages in the set up of an ABC system:

- Identification of the major activities of the organisation
- Assigning costs to cost pools
- Determination of cost drivers for each major activity based on a causal relationship.
- Assigning the cost of the activities to products according to the product's demand for the cost driver.

2

Advantages:

- It allows for resource allocation at different activity levels; this information can be used for planning and estimating future expenditure.
- It establishes a link between decision making and cost behaviour;
- It encourages a critical review of processes related to activities by exposing a true cost and facilitates cost cutting.
- It is likely to give a more accurate estimate of product costs. This is particularly relevant for Aztec Ltd as it has a range of products of varying complexity.

Disadvantages:

- It may be difficult to define activities and cost drivers.
- It is more difficult to monitor.
- It requires a costly review of costing and possibly managerial systems.
- It is more expensive than traditional methods of costing.
- It may lead to suboptimal decision making.

ABC has arisen from limitations that can be seen to exist in traditional absorption costing systems. The focus is on calculating the costs of the activities and processes of an organisation, with attention being centred on the causal factors for overheads being incurred (cost drivers).

½ marks to be awarded per relevant point made up to a maximum of 3

(7)

(20)

Question 2

(a) Calculation of Number of watches to be produced:

	Dec Units	Jan Units	Feb Units
Finished goods:			
Opening stock	3,000	3,300	3,600
Sales – retail	(24,000)	(26,000)	(30,000)
Sales – shop on site	(1,000)	(1,000)	(1,000)
Closing stock	(3,300)	(3,600)	(3,900)
Production	25,300	27,300	31,300

2

Calculation of raw materials purchases:

	Dec Units	Jan Units	Feb Units
Opening stock (62,500/6.25)	10,000	9,500	9,025
Production	25,300	27,300	31,300
Closing stock	(9,500)	(9,025)	(9,025)
Purchases	24,800	26,825	31,300
Unit price	£6.25	£6.25	£6.50
Purchase cost	£155,000	£167,656	£203,450

2

Trade Debtors:

Trade sales:

	Dec £	Jan £	Feb £
Sales price	7.40	7.40	7.40
Sales volume	24,000	26,000	30,000
Total sales revenue	177,600	192,400	222,000

1

Cash Receipts:

	Dec £	Jan £	Feb £
Opening debtors	50,000	26,000	
1 month (40%)		71,040	76,960
2 months (60%)			106,560
Total receipts	50,000	97,040	183,520

2

Wages:

Production units	25,300	27,300	31,300
10 watches can be produced per hour:			
Number of hours	2,530	2,730	3,130
Cost (x £8)	£20,240	£21,840	£25,040

2

Wacky Watch Company
Cash Flow budget for the period December 2006 to February 2007

	Dec £	Jan £	Feb £	
Receipts:				
Trade sales	50,000	97,040	183,520	
Shop sales (1,000 x £7.80)	7,800	7,800	7,800	
Total receipts	57,800	104,840	191,320	1
Payments:				
Trade suppliers	24,000	155,000	167,656	½
Wages	20,240	21,840	25,040	½
Production overheads	8,000	8,000	8,000	½
Shop running costs	2,200	2,200	2,200	½
Sales dept expenses	2,850	2,850	2,850	½
Admin expenses	1,500	1,530	1,530	½
Capital equipment		6,625		½
Overdraft interest	44	54	986	½
Total payments	58,834	198,099	208,262	
Net monthly cash flow	(1,034)	(93,259)	(16,942)	
Balance b/f	(4,400)	(5,434)	(98,693)	
Balance c/f	(5,434)	(98,693)	(115,635)	

Correct totalling and presentation 1

(15)

(b) The effect of changing the price from £7.40 to £7.80 for the retail trade customers:

Closing cash balance:		£	
Extra receipts from Dec sales	$£0.40 \times 24,000 \times 40\%$		3,840 (in Jan)
	$£0.40 \times 24,000 \times 60\%$		5,760 (in Feb)
Extra receipts from Jan sales	$£0.40 \times 26,000 \times 40\%$		<u>4,160</u> (in Feb)
			13,760
			1 ½
Reduction in overdraft interest	$£3,840 \times 0.1\%$		38
			1
Total effect			13,798
Revised cash balance	$(115,635) + 13,798 = (101,837)$		½

Effect of price change on closing debtors:

Closing debtors:			
	Units		
60% of Jan sales	15,600		
100% of Feb sales	<u>30,000</u>		
Total	45,600		
At £7.40		£337,440	
At £7.80		£355,680	
Increase		£18,240	2
			(5)
			(20)

Question 3

- (a) The present statement does not represent a true reflection of the performance of the Loan Equipment Service. The budget has been prepared based upon the assumption that the activity will be 2,600 service requisitions and will operate at a 90% efficiency level. The actual activity is considerably higher than this, although it has not been operating at 90% efficiency. It is not a fair comparison of like with like and as such cannot be used to make valid comparisons regarding performance.

(1)

(b) **Equipment Loan Service
Quarterly performance report**

	Flexed Budget	Actual	Variance
Number of service requisitions	3,150	3,150	
	£	£	£
Expenditure:			
Centre Manager (W1)	8,100	9,200	1,100
Team supervisor (W1)	6,000	6,000	-
Technical operatives (W2)	18,872	18,660	(212)
Drivers (W3)	18,125	19,640	1,515
Equipment cleaning officers (W3)	10,875	12,880	2,005
Consumables (W4)	16,616	18,810	2,194
Repairs and maintenance (W5)	13,613	15,920	2,307
Cleaning products (W6)	1,890	1,760	(130)
Diesel and vehicle costs (W7)	8,075	8,741	666
Telephone expenses (W6)	662	660	(2)
Stationery (W6)	3,969	4,256	287
Heating and lighting (W1)	1,750	1,790	40
Premises rental costs (W1)	2,050	2,700	650
Total Expenditure	110,597	121,017	10,420

Presentation and layout of statement, totals and correct calculation of variances 4

Workings:

W1: These are fixed costs and the budget will not change from original

1

W2: Technical operatives:

£16,100 fixed annually for 4 WTE (this equates to 1 WTE per quarter)

$£1.10 \times (3,150 \times 0.8) + £16,100 = £18,872$

1

W3: Drivers and equipment cleaning officers

$£14,500/4 = £3,625$ per quarter
 $£3,625 \times 5 \text{ WTE} = 18,125$ drivers
 $£3,625 \times 3 \text{ WTE} = 10,875$ cleaning officers

1

W4 Consumables

	£
$3,150 \times 20\% \times £3.00$	1,890.00
$3,150 \times 15\% \times £4.50$	2,126.25
$3,150 \times 35\% \times £5.00$	5,512.50
$3,150 \times 30\% \times £7.50$	<u>7,087.50</u>
	16,616.25

1

W5 Repairs and maintenance

$£7,200/4 = £1,800$ per quarter
 $£11,550 - £1,800/2,600 = £3.75$
 $£3.75 \times 3,150 = £11,812.50$
 Total $£1,800 + £11,812.50 = £13,612.50$

1

W6 Cleaning, stationary and telephones

Cleaning	$£1,560/2,600 = £0.60 \times 3,150 = £1,890$
Stationary	$£3,276/2,600 = £1.26 \times 3,150 = £3,969$
Telephones	$£546/2,600 = £0.21 \times 3,150 = £661.50$

1

W7: Diesel and vehicle costs

Using the high low method

$\frac{£8,450 - £7,430}{3,400 - 2,720} = \frac{£1,020}{680} = £1.50$ variable cost per requisition

$£1.50 \times 3,400 = £5,100$ total variable cost

Fixed cost $£8,450 - £5,100 = £3,350$

Flexed budget = $(£1.50 \times 3,150) + £3,350 = £8,075$

2

(12)

(c) Comments may include:

- Although the budget is not as overspent as the original budget, there is still cause for concern. There is an over spend of £10,420, which does not reflect the budgeted position. This is even more surprising because the service has not reached the budgeted efficiency level of 90%, instead managing only an 80% efficiency level.
- The variance on consumables is caused by the variation in the percentage split between the job requisitions. There were fewer low cost requisitions and more high cost requisitions than budgeted.
- The policy not to carry excess stock may have had an impact on the ability of the service to deliver on time and therefore hit the 90% efficiency target. This should be reviewed.
- Apart from the team supervisors and the technical operatives, the other staff costs are over budget. It may be that there has been a pay award that has not been taken into account in the original budget or the pay appeals have proved to be successful and have therefore resulted in a budget overspend as the arrears have been paid to employees.

1 mark to be awarded per relevant point to a maximum of (3)

(d) The flexible budget statement has been prepared based on the principles of cost behaviour. These principles make it possible to re-draft a budget according to the actual level of activity by deducing the way in which costs behave:

- Fixed costs – These costs do not vary with the level of activity and so the flexed budget will not change from the original budget.
- Variable costs – These costs vary directly according to the level of activity. The unit cost will be exactly the same for each additional unit.
- Semi fixed costs – These costs are partly fixed and partly variable. They can be broken down into these component parts using the 'high/low method'. This allows the variable element of the total cost to be determined by calculating the change in cost that has occurred due to the change in activity (the variable cost element), and then from this deducing the fixed cost element.

½ mark for each definition explained well up to a maximum of (2)

(e) Commitment accounting systems provide the facility to record purchase orders raised but not yet paid. This has the benefit of allowing outstanding purchase orders to be added to actual expenditure before being compared to budget. This provides a more accurate assessment of Budget V Actual and provides for the earlier identification of variances thereby improving financial control.

(2)

(20)

Question 4

(a) W1

Actual number of blank DVDs issued to production $\frac{\pounds 15,589}{\pounds 0.17} = 91,700$

W2

Standard labour hours produced $\frac{\text{Actual production}}{100} = \frac{72,000}{100 \text{ hrs}} = 720 \text{ hours}$

W3

Budgeted fixed overheads for division X

OAR = $\frac{\text{Total factory fixed overheads}}{\text{Total labour hours}}$

$\frac{\pounds 24,750}{990} = \pounds 25 \text{ per labour hour}$

W4

Standard cost of actual production:

$277.50 \times \frac{72,000}{600} = \pounds 33,300$

W5

Actual cost of production:

	£	
DVD discs	15,589	
Labour	5,439	
Overheads	<u>17,250</u>	(660/990 x 25,875)
	38,278	

Calculation of variances:

Materials price variance:

Standard cost of actual material	91,700 (W1) x £0.15	13,755	£
Actual cost of material		<u>15,589</u>	
		1,834A	

1

Material usage variance:

Standard usage for actual production	72,000
Actual usage	<u>91,700</u>
	19,700
x standard cost x £0.15	2,955A

1

Labour rate variance:

Standard cost of actual hours	735 x £6.25	4,593.75
Actual cost		<u>5,439.00</u>
		845.25A

1

Labour efficiency variance:

Standard hours for actual production

$$\frac{72,000}{600} \times 6 \quad (\text{W2}) \quad 720$$

Actual hours

$$\frac{735}{15}$$

x standard cost per hour x £6.25

$$93.75\text{A}$$

1

Fixed overhead expenditure variance:

$$\text{Budgeted overhead} \quad 24,750 \times \frac{660}{990} = 16,500$$

$$\text{Actual overhead} \quad 25,875 \times \frac{660}{990} = \frac{17,250}{750\text{A}}$$

1

Fixed overhead volume variance:

$$\begin{array}{r} \text{Standard labour hours produced (W2)} \quad 720 \\ \text{Budgeted labour hours} \quad \frac{660}{60} \end{array}$$

$$\text{at standard overhead absorption rate per hour} \quad \times \text{£25 (W3)} \quad 1,500 \text{ F}$$

1

Fixed overhead capacity variance:

$$\begin{array}{r} \text{Actual hours worked} \quad 735 \\ \text{Budgeted labour hours} \quad \frac{660}{75} \end{array}$$

at standard rate x £25 1,875F

1

Fixed overhead efficiency variance:

$$\begin{array}{r} \text{Standard labour hours produced} \quad 720 \\ \text{Actual hours worked} \quad \frac{735}{15} \end{array}$$

x standard rate x £25 375A

1

Reconciliation of Standard Absorption Cost of actual production to Actual Absorption Cost for the month of November 2006.

	£	£
Standard cost of production (W4)		33,300
Materials cost	1,834.00 A	
Materials usage	2,955.00 A	
Labour cost	845.25 A	
Labour efficiency	93.75 A	
Fixed overhead expenditure	750.00 A	
Fixed overhead capacity	1,875.00 F	
Fixed overhead efficiency	<u>375.00 A</u>	<u>4,978A</u>
Actual cost of production(W5)		38,278

3

(11)

- (b) 91,700 DVDs were issued to production, but only 72,000 DVDs were passed at inspection. Total wastage was 19,700. Of the total issued to production $6/100 = 5,502$ were expected to be waste but the remaining 14,198 were due to other factors.

Variance arising from faulty DVDs:

	£
5,502 x £0.15	825.30
Variance due to other factors	
14,198 x £0.15	<u>2,129.70</u>
Total usage variance	<u>2,955.00 A</u>

(3)

- (c) Ideal standards:

- Set on the basis of ideal working conditions.
- No allowance for wastage or idle time.
- Not useful if used for planning as the standard does not reflect reality.
- Will probably result in adverse variances which can be de-motivational.

2

Attainable standards:

- Allow for small amounts of normal wastage and inefficiency.
- Achievable but can only be met if operations are carried out efficiently and cost effectively.
- Variances will be mixture of favourable and adverse.
- Can be viewed as motivational.

2

Basic standards:

- Historical cost standards.
- Likely to be out of date as will not take account of inflation or new working conditions.
- Large variances may occur in either direction.
- Not often used in standard costing for these reasons.

½ to 1 mark per relevant point made up to a maximum of 2

(6)

(20)

Question 5

(a) The role of the financial accounts and the management accounts:

Management accounts:

- Management accounts are used to aid management in making decisions.
- The format and level of detail varies according to what is required by management.
- The users are internal to the business.
- The accounts are not regulated
- The accounts are orientated towards the future not the past.
- The scope of the information can be strategic, tactical and operational. They provide routine and also ad hoc information.
- Less precise in the level of accuracy.

½ mark per relevant point to a maximum of 2

Financial accounts:

- The records are a historic record for accounting purposes. They are prepared in accordance with the law and the accounting standards.
- The financial accounts are prepared for a mainly external audience.
- Regulated externally (companies act, SSAPs and IIASs, External audit, stock exchange regulations).
- The information is tactical and operational. It provides routine recording of transactions.
- Accounting must be accurate and precise.

½ mark per relevant point to a maximum of 2

(4)

(b) Data, information and management information systems:

- Data are the raw facts and figures that once processed become information. It is the input to the process. Information is processed data.
- The management information system (MIS) is a set of interrelated systems that filters and processes data from a variety of sources to provide usable information relating to the organisation's activities.

½

½

(1)

(c) Quantitative information:

- Information that can be expressed in a numerical form
- Qualitative information is not expressed numerically.

Management need both types of information.

(1)

(d) Strategic information:

- This is used by senior management to determine organisational objectives.
- Relates to the organisation as a whole.
- Medium to long term time horizon.
- Provided in the context of the wider environment in which the organisation operates.
- Can be derived from the organisational mission statement.
- The information can add form and substance to the mission and organisational objectives of the organisation.

½ mark per relevant point to a maximum of 2

Tactical information:

- Provides the conduit through which strategic objectives, plans and decisions are translated into action by middle management.
- Shorter time horizon than that of strategic information (one year)
- Greater precision of the information and the focus will be narrower.

½ mark per relevant point to a maximum of 2

Operational management:

- Used by lower managerial levels.
- Support the actions necessary to affect desired tactical outcomes.
- Plans the economic, efficient and effective use of resources to achieve the tactical plans.
- Very narrow focus.
- Short time frame.

½ mark per relevant point to a maximum of 2

(6)

(e) Qualities of good information:

- Relevance – Information must be relevant to the purpose that it is required for. This can differ according to whether the information is financial or is needed for management purposes. It also differs according to whether the information is historic or for decision making that affects the future. 1
- Understandability – The information should be able to be understood. This means that consideration of the user needs to be made. For example, providing different forms of information and limiting the use of technical jargon for non accountant users of the information. 1
- Timeliness – The information should be provided soon enough for it to be useful. Information has no value if it is provided too late. This is particularly important for tactical and operational information. There may be a conflict between the accuracy of information and its timeliness. 1
- Comparability – This allows us to compare like with like. Information should be prepared consistently, and where it is not, the reason should be given. 1

- Objectivity – Information should be free from subjective judgement wherever possible. This is not easy to achieve as much management information involves decision making, which involves some subjective judgement. Any assumptions should be stated. 1
 - Reliability – The information should be sufficiently accurate for the purpose it is needed for. It is difficult to achieve 100% reliability. Consideration should be given to the cost of reliability and any assumptions should be stated. 1
 - Completeness – There should be no material omission from the information. 1
 - Cost/benefit criterion – Explicit and implicit costs of the information should both be considered. 1
- (8)**
- (20)**

Question 6

(a) The objective function:

Contribution = Selling price - Variable cost

J150 (£70.00 - (2.8 × £7.50) + (2.1 × £8.00) + (2.1 × £10)
 K620 (£80.00 - (2.8 × £7.50) + (1.4 × £12.50) + (2.1 × £8.00) + (0.7 × £10)
 T550 (£90.00 - (2.8 × £12.50) + (1.4 × £8.00) + (2.8 × £10.00)

J150 = £70.00 - £58.80 = £11.20
 K620 = £80.00 - £62.30 = £17.70
 T550 = £90.00 - £74.20 = £15.80

C = 11.2 J150 + 17.7 K620 + 15.8 T550

2

Subject to constraints:

Material W: 2.8 J150 + 2.8 K620 ≤ 1,400 litres
 Material X: 1.4 K620 + 2.8 T550 ≤ 840 litres
 Material Y: 2.1 J150 + 2.1 K620 + 1.4 T550 ≤ 1,750 litres
 Material Z: 2.1 J150 + 0.7 K620 + 2.8 T550 ≤ 1,050 litres

2

Demand T550 ≤ 500
 J150, K620, T550 ≥ 0

½
 ½

(5)

(b) The technique that would be used to solve this scenario is the simplex linear programming technique. This technique allows for the calculation of an optimum production plan where there are more than two decision variables, as there are in this case. The technique assumes that costs and volumes are the only factors affecting the production decisions, and ignores qualitative factors. It assumes a profit maximising objective, and that the optimum production quantities can be sold.

1 mark per relevant point made to a maximum of (4)

- (c) (i) A sunk cost is one that has already been incurred. It is not relevant to a decision as it will not change as a result of it. These costs are never relevant to a decision. They may also be future costs which must be incurred as a result of different decisions to the one under consideration.
- (ii) An opportunity cost is the cost foregone from pursuing one alternative as opposed to the best alternative. These costs are always relevant to a decision.
- (iii) A relevant cost is one that will change as a result of a decision. It is a future cost or an incremental cost therefore. Only relevant costs should be included in short term decision making. They are future cash flows which differ between alternatives.

1
 1
 1

(iv) Contribution is defined as the sales income less variable cost. In the short term anything that makes a positive contribution to profit and fixed costs should proceed.

1

(4)

(d) General fixed overheads that have been apportioned to a department or cost centre are not relevant to a decision as they will not change as a result of that decision. They are a sunk cost.
Directly attributable fixed costs are relevant to a decision as they will change as a result. As such they should be included in any relevant cost calculation.

(2)

(e) Problems with relevant costing:

- Relevant costing can only be used in the short term. Some substantial costs may not be taken into account in the short term as they are not relevant. However, in the long term, all costs are relevant and need to be considered. Fixed overheads, for example, have to be covered in the long term and should they be ignored, this will lead to under pricing and eventually will not be profitable.
- A distinction needs to be made between the decisions that are 'one off' and those that are part of the normal business activity.
- It may be difficult to obtain financial data about alternative courses of action. Identifying and quantifying opportunity costs can be particularly problematic.
- There are non financial factors that need to be considered when making a decision. These also need to be taken into consideration.
- Persuading managers to accept the concept of 'relevance' can be difficult. This is partly because there may be a reluctance to pull out from projects that have already incurred expenditure. Alternatively, because it involves future costs, it is in contrast to the normal accounting convention that is based on historic data.

1 mark per relevant point to a maximum of (5)

(20)