Accounting Technicians Ireland

Management Accounting

2nd Year Examination

Autumn 2009

Paper & Suggested Solutions

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Accounting Technicians Ireland

(Formerly The Institute of Accounting Technicians in Ireland)

Foundation Examination: Autumn 2009

Paper: MANAGEMENT ACCOUNTING

Friday 21st August 2009 – 9.30 a.m. to 12.30 p.m.

INSTRUCTIONS TO CANDIDATES

In this examination paper the £ symbol may be understood and used by candidates in Northern Ireland to indicate the UK pound sterling and the € symbol may be understood by candidates in the Republic of Ireland to indicate the Euro.

Answer ANY FIVE of the six questions.

If more than the required number of questions are answered, then only the requisite number, in the order filed, will be corrected.

Candidates should allocate their time carefully.

All figures should be labelled, as appropriate, e.g. €/£'s, units etc.

Answers should be illustrated with examples, where appropriate.

Question 1 begins on Page 2 overleaf.

QUESTION 1

FINE FURNISHINGS is a small manufacturing business which produces a number of items of furniture. The following information has been prepared following discussions for the purposes of preparing a cash budget for the year ahead:-

Sales (units)..... 75,000
Sales (Price per unit)..... €/£85

Variable Costs
Materials..... €/£36
Labour..... €/£24

Overhead Costs

Heat, light & power	€/£78,000 per annum, paid quarterly in arrears.
Sales & Marketing Overheads	8% of gross sales. This is paid in the month incurred.
Premises Costs	€/£156,000 per annum, paid monthly in advance.
Supervisors' salaries.....	€/£60,000 per annum.
Administration expenses	€/£2,500 per month.

(i) Sales and production are projected to be incurred evenly over the year.
(ii) 40% of sales are received in cash and get a 5% discount. The remaining 60% are on credit terms of one month. 10% of all credit sales will become bad debt.
(iii) Materials costs are paid for two months in arrears.
(iv) Net labour and salary costs of 65% are paid in the month they are incurred, with the balance, employer costs, paid in the next month.
(v) Assume that there are no stock-holdings and that production is based on sales demand.
(vi) Opening Debtors of €/£175,250 were received in full in January of **Year 2.**
(vii) Opening Creditors were €/£225,000 – 75% of this amount is payable in January and the balance in February of **Year 2**.
(viii) Employer costs relating to salaries and wages of €/£54,250 is outstanding from the previous month.
(ix) The bank account balance at the start of the year was overdrawn by €/£44,600.

Requirement

(a) Prepare a cash budget (cashflow forecast/projection) for FINE FURNISHINGS, detailing projected cashflow's by month for the first three months of the year.
15 Marks

(b) Write a note to the Director explaining why there is a difference between his bank balance and profit for the first quarter.
5 Marks
Total 20 Marks

QUESTION 2

The Managing Director of your company has recently attended a management accounting course for managers from non-accounting backgrounds. Unfortunately, he was unable to attend the second day of the course due to an important Board meeting. As the first day's discussion sparked his interest, he has followed up by asking you to prepare a memorandum explaining and giving an applied example of the following terminology which was due to be covered in the second day:-

(a) Equivalent units

(b) Flexible budget

(c) Ideal Standard

(d) Under absorbed overhead

(e) Variance Analysis

5 Marks each
Total 20 Marks

QUESTION 3

RAIN Ltd. operates a standard costing system. The following information relates to the product Blockbuster for the first quarter of the year:-

	Standard	***Actual***
Sales (units).....	4,000	4,000
Sales price	€/£75	€/£80
Materials price (kg)	€/£15	€/£16
Materials used	5,000 kg	4,800 kg
Labour rate (per hour).....	€/£15	€/£16
Labour hours worked	4,500	4,400
Variable overhead	50% of direct labour	€/£33,800
Fixed Overhead.....	€/£60,000	€/£64,000

Requirement

(a) Prepare a statement of the budgeted profit and the actual profit for the first quarter of the year.

4 Marks

(b) Calculate the following variances:-
(i) Sales Price Variance
(ii) Materials Price Variance
(iii) Materials Usage Variance
(iv) Labour Rate Variance
(v) Labour Efficiency Variance
(vi) Variable Overhead Expenditure Variance
(vii) Variable Overhead Efficiency Variance
(viii) Fixed Overhead Expenditure Variance

16 Marks
Total 20 Marks

QUESTION 4

GH Productions is planning an event and wants you to carry out some calculations to advise in relation to certain financial decisions. They have provided the following information on event costs:-

	€/£
Hire of premises.....	2,500
Advertising & promotion.....	1,200
Ticket printing	300
Musicians Fees.....	1,000
Other Artist Fees.....	1,500
Administration	500
Security & attendants	2,000

GH Productions is considering charging either €/£15 or €/£20 per ticket. There are no other fixed or variable costs.

Requirement

(a) Calculate the breakeven point of ticket sales, required for each price. **4 Marks**

(b) GH Productions would like to make a profit of 25% of turnover, calculate the number of tickets which must be sold at each price to achieve each target.
4 Marks

(c) GH Productions may incur an additional variable marketing cost of €/£1.00 per ticket, in order to increase the audience to 700. Advise the company if they should incur this cost.
4 Marks

(d) GH Productions are looking at a number of alternative venues. If the venue is limited to an audience of 300, what price must be charged to ensure that the event achieves a breakeven position?
4 Marks

(e) Briefly discuss the issues that GH Productions should consider if the musicians indicate a willingness to take a percentage of turnover, rather than a fixed fee.
4 Marks
Total 20 Marks

QUESTION 5

LOVE Plc. operates activity based costing and activity based budgeting systems.

The following information has been provided in respect of three separate production departments:-

	Dept. 1	***Dept.2***	***Dept. 3***	***Dept. 4***
Budgeted production (units) ...	20,000	10,000	15,000	45,000
No. of repair hours	6,000	1,400	5,200	12,600
No. of orders issued	500	1,000	800	2,300
Machine hours	400,000	300,000	200,000	900,000

Production overheads by Cost pool

	€/£
Machining.....	1,755,000
Stores.....	632,500
Quality Assurance	405,000
Maintenance	378,000

Requirement

(a) Describe Activity Based Costing and Activity Based Budgeting.

6 Marks

(b) (i) Identify a suitable cost driver for each cost pool.

3 Marks

(ii) Calculate an activity based overhead absorption rate for each cost pool.

3 Marks

(c) Prepare a statement showing the total overhead cost:-

(i) for each production department and
(ii) per unit, within each department

8 Marks
Total 20 Marks

QUESTION 6

HANNA Ltd. normally uses marginal costing for internal management accounting, but is considering moving to total absorption costing. The following budgetary information has been provided:-

	Quarter 1	*Quarter 2*
Sales (units).....	5,000	7,000
Production (units)	6,000	5,000

	Per Unit
Sales Price	€/£100.00
Variable Cost:	
Direct material.....	2 kg @ €/£15/kg
Direct Labour.....	1 hour @ €/£16/hour

There is an opening stock of 1,000 units which has been valued (using marginal costing) at €/£54,000.

Production overhead is absorbed on the basis of 100% of direct labour, based on estimated annual production of 24,000 units.

50% of production overheads are variable and 50% are fixed.

Administration and general overheads are projected at €/£160,000 per annum.

Requirement

(a) Calculate the projected annual fixed production overhead for HANNA Ltd.

2 Marks

(b) Prepare a projected statement of stock valuation at end of Quarter 1 using
(i) marginal costing
(ii) absorption costing

4 Marks

(c) Prepare a projected profit statement for each quarter using
(i) marginal costing
(ii) absorption costing

12 Marks

(d) Prepare a reconciliation of the projected marginal and absorption costing profit figures.

2 Marks
Total 20 marks

2nd Year Examination: Autumn 2009

Management Accounting

Suggested Solutions

QUESTION 1

(a) FINE FURNITURE – CASH BUDGET FOR THE THREE MONTHS

	Month 1 £/€	Month 2 £/€	Month 3 £/€	TOTAL £/€
Inflows				
Cash sales	201,875	201,875	201,875	605,625
Credit sales	175,250	286,875	286,875	749,000
Total Inflows	**377,125**	**488,750**	**488,750**	**1,354,625**
Outflows				
Supplier (Materials)	168,750	56,250	225,000	450,000
Labour costs – net	97,500	97,500	97,500	292,500
Heat, Light & Power	-	-	19,500	19,500
Sales & Marketing	42,500	42,500	42,500	127,500
Premises costs	13,000	13,000	13,000	39,000
Supervisors' salaries – net	3,250	3,250	3,250	9,750
Employer salary On-costs	54,250	54,250	54,250	162,750
Administration Costs	2,500	2,500	2,500	7,500
Total Outflows	**381,750**	**269,250**	**457,500**	**1,108,500**
Net Inflow/(Outflow)	(4,625)	219,500	31,250	246,125
Opening Balance	(44,600)	(49,225)	170,275	(44,600)
Closing Balance	**(49,225)**	**170,275**	**201525**	**201,525**

Workings

1.

Sales per month	6,250	
Sales Price	£/€85	
	£/€531,250	
Cash Sales per month	40%	212,500
Less 5%		(10,625)
Net Cash Sales – per month		£/€201,875

Credit Sales – per month		60%	318,750
Less bad debt		10%	(31,875)
Net Debtor Receipts			£/€286,875
2. Materials		£/€36	
Production per month		6250	
			£/€225,000
3. Labour		£/€24	
Production per month		6250	
		£/€150,000	
65% - Net salary cost			£/€97,500
4. Sales & Marketing Overheads		£/€531,250 x 8%	£/€42,500
5. Premises Costs		£/€156,000 / 12	£/€13,000
6. Supervisors' salaries		£/€60,000/12	£/€5000
65%			£/€3250
7. Administration costs			£/€2,500
8. Employer On-costs			
Labour	35%	52,500	
Supervisors	35%	1,750	
			£/€54,250

(b)

To: Director
From: Student
Date: X/X/XX

The main reasons why there is a difference between bank balances and reported profits for the first quarter are:

- there are costs that do not involve expenditure of cash, for example, depreciation
- there are changes in the level of sales debtors and creditors for purchases, which affect cash balances but do not affect profits
- capital purchases have an immediate impact on cash balances, but are not charged against profits
- there are also differences between profit and cash at bank caused by changes in stock levels, depending on the basis of the stock valuation.

QUESTION 2

(a) Equivalent units

At the end of any given period of accounting, there are likely to be partly completed units in process. Clearly, some costs incurred during the period are attributable to these units as well as those which are fully complete. In order to spread cost equitably, the number of equivalent units is calculated. This is the equivalent number of fully complete units which the partly complete units represent.

Example:
Production of fully complete units during period 2000 units
Work in progress 500 units – 50% complete

*Total equivalent production 2000 + (500*50%) = 2250 units*
Cost would be spread over the total equivalent production of 2250 units

(b) Flexible budget

A flexible budget can be defined as 'a budget, which by recognising cost behaviour patterns, is designed to change as the volume of output changes' In order to be able to prepare flexible budgets it is necessary to distinguish between fixed and variable costs as each react differently to changes in the volume of output. Flexible budgeting allows us to analyse performance and carry out comparisons in a more meaningful way by flexing the budget to the actual volume of output achieved.

Example

Sales price	*£/€28 per unit*
Standard production costs	
Direct materials	*5kg @ £/€2/kg*
Direct labour	*2 hours @ £/€6/hr*
Variable overhead	*2 hours @ £/€2/hr*
Fixed overheads	*£/€50000 per month*

Using the standard costs, the flexible budget shows budgeted production costs at various levels of output:

	20000 units £/€	*25000 units £/€*	*30000 units £/€*
Sales revenue	*560000*	*700000*	*840000*
Variable costs			
Direct materials	*200000*	*250000*	*300000*
Direct Labour	*240000*	*300000*	*360000*
Variable Overhead	*80000*	*100000*	*120000*
Total Variable cost	*520000*	*650000*	*780000*
Gross Profit	*40000*	*50000*	*60000*
Fixed Overhead	*50000*	*50000*	*50000*
Budgeted Net Profit/(Loss)	*(10000)*	*0*	*100000*

(c) Ideal standard

An ideal standard is defined as ' a standard which can attained under the most favourable conditions with no allowance for normal losses, waste and machine breakdown. Also known as a potential standard'

An ideal standard is a target production cost which should be attained in the best possible operating conditions (ie: no wastage; no breakdowns; no downtime). Because in reality this is an unlikely situation, ideal standards are normally unattainable in practice, and therefore are rarely used except for development or research purposes. The ideal standard can be used to inform the normal attainable standard, which should be based upon technical, engineering and work studies.

Example:
A widget, produced in perfect working conditions has the following costs

		£/€
Direct Materials	*2 kg @ £/€5*	*10.00*
Direct Labour	*4 hours @ £/€10*	*40.00*
Production overhead	*4 hours @ £/€4*	*16.00*
		66.00

Due to normal losses and expected downtime, the standard cost of widget is

		£/€
Direct Materials	*2.5 kg @ £/€5*	*12.50*
Direct Labour	*5 hours @ £/€10*	*50.00*
Production overhead	*5 hours @ £/€4*	*20.00*
		82.50

(d) <u>Under-absorbed Overhead</u>

Overhead costs are normally absorbed into production costs using estimated pre-determined rates (related to labour, production, etc). This means that the absorbed overhead may be different from the actual overhead incurred. If the overhead absorbed is more that the actual overhead incurred, this is known as under absorbed overhead.
Under absorbed overhead should be charged directly to the profit and loss account for the period during which it was incurred.

Example:

Budgeted Overhead	*£/€50,000*
Projected labour hours	*5,000*
Overhead absorption rate	*£/€10 per direct labour hour*
Actual overhead	*£/€55,000*
Actual labour hours	*4,800*
Absorbed overhead	*£/€48,000*
Under absorbed Overhead	*£/€7,000*

(e) <u>Variance analysis</u>

Variance analysis is the process by which the total difference between standard and actual costs is sub-divided. It is the analysis of performance by means of variances, which can be used to prompt management action.
Variances arise from differences between standard and actual quantities and /or differences between standard and actual prices. Variances are either adverse (a negative variance were actual cost is greater that the projected standard) or favourable (a positive variance were actual cost is less than the projected standard).
Variance analysis is the process of investigating and examining the causes of variances so that the management of a company or organisation can react to the actual circumstances. The company may seek to correct an adverse variance or to encourage positive variances.

Example:
A company reported an adverse labour rate variance of £/€5000 and a favourable labour efficiency variance of £/€3000.

- The adverse varaince means that the labour used cost £/€5000 more than w budgeted. Further analysis indicates that this could be because a higher, more skilled grade of labour was used, or because of additional wage increases not budgeted.

- The favourable variance indicates that the labour used worked £/€3000 more efficiently than budgeted. Further analysis could tell us that this could be because of better working conditions (eg Materials or Equipment/Machinery) or because of more skilled labour working quicker.

QUESTION 3

(a) RAIN Ltd Statement of Budgeted and Actual Profits for the first quarter

	Budgeted £/€	**Actual £/€**
Sales	300,000	320,000
Cost of Sales		
Materials	75,000	76,800
Labour	67,500	70,400
Variable Overhead	33,750	33,800
Gross Profit	**123,750**	**139,000**
Fixed Overhead	60,000	64,000
Net Profit	**63,750**	**75,000**

(b)

(i) Sales Price Variance

(Actual Sales Quantity x Actual Price) – (Actual Sales Quantity x Standard Price)

(4,000 x 80.00) - (4,000 x 75.00)

320,000 - 300,000 = **£/€20,000 fav**

(ii) Material price variance

(Actual quantity of inputs x Actual price) – (Actual quantity of inputs x Standard Price)

(4,800 x 16.00) - (4,800 x 15.00)

76,800 - 72,000 = **£/€4,800 adv**

(iii) Materials usage variance

(Actual quantity of inputs x Standard price) – (Budgeted quantity x Standard price)

(4,800 x 15.00) - (5,000 x 15.00)

72,000 - 75,000 = **£/€3,000 fav**

(iv) Labour rate variance

(Actual Hours of input x Actual Rate) – (Actual Hours of input x Standard rate)

(4,400 x 16.00) - (4,400 x 15)

70,400 - 66,000 = **£/€4,400 adv**

(iv) Labour efficiency variance

(Actual Hours of input x Standard rate) – (Budgeted hours x Standard rate)

(4,400 x 15) - (4,500 x 15.00)

66,000 - 67,500 = **£/€1500 fav**

(vii) Variable overhead expenditure variance

Actual expenditure – (Actual Hours of input x Standard rate)

33,800 - (4,400 x 7.50) = **£/€800 adv**

(viii) Variable overhead efficiency variance

(Actual Hours of input x Standard rate) – (Budgeted hours x Standard rate)

(4,400 x 7.50)	-	(4,500 x 7.50)		
33,000	-	33,750	=	**£/€750 fav**

(viii)Fixed Overhead
Budgeted Overheads – Actual Overheads

60,000	-	64,000	=	**£/€4000 adv**

QUESTION 4

(a) **Breakeven point** = $\frac{\text{Fixed Costs}}{\text{Contribution per unit}}$

Breakeven @ £15/ticket	=	$\frac{9000}{15}$	=	**600 tickets**
Breakeven @ £20/ticket	=	$\frac{9000}{20}$	=	**450 tickets**

(b) **The level of activity which will yield a profit of 25% of turnover**

Calculation of Revised Contribution – on which to base calculations

Original Contribution	15.00	20.00
Profit requirement – 25%	3.75	5.00
Revised Contribution	11.25	15.00
(for calculation of target turnover)		

Revised breakeven calculation to achieve target profit calculation

$\frac{\text{Fixed Costs}}{\text{Revised Contribution}}$

@ £15/ticket	=	$\frac{9,000}{11.25}$	=	**800 tickets**	**=**	**£/€12,000**
@ £20/ticket	=	$\frac{9,000}{15.00}$	=	**600 tickets**	**=**	**£/€12,000**

(c) Additional variable cost - £1.00

Relevant calculations:

(i)	Original Contribution	15.00	20.00
	Less Variable Cost	1.00	1.00
	Revised Contribution	14.00	19.00
	Audience number	700	700
	Revised Contribution	£/€**9,800**	**£/€13,300**
(ii)	Breakeven calculations	9000	9000
	Revised contribution	14.00	19.00
	Breakeven – no of tickets	643 tickets	474 tickets

Additional cost is likely to be of benefit at the higher ticket price of £/€20 as it increases sales above the target 25% profit – while at £/€15 ticket price sales are only marginally above breakeven.
However, the margin of safety at both prices is reduced as the breakeven point has increased

(d) **Calculation of unit contribution (sales price)**

Breakeven Unit Contribution = $\frac{\text{Fixed Costs}}{\text{Unit Quantity}}$

= $\frac{9000}{300}$ = **£/€30 ticket price**

(e) The decision to agree a fixed fee or a variable fee will be influenced by the company's confidence about ticket sales. If the company is confident of good tickets sales then it will be likely to opt for the fixed artists fee. If there is less certainty, then the option of a variable fee would offer the company a greater degree of comfort and would spread some of the risk.

QUESTION 5

(a)
Activity Based Costing (ABC) is a cost management approach that links resource consumption to activities that a company performs and the assigns those activities and their associated costs to customers or product lines. ABC recognises that it is activities which drive costs and aims to control cost drivers by charging overheads to cost units on the basis of benefits received from the particular indirect activity e.g. ordering, planning etc. ABC seeks to attribute overheads to product costs on a realistic basis than simply production volume and also tries to show the relationship between overhead costs and the activities that cause them

Activity based budgeting (ABB) is a planning and control system which seeks to support the objective continuous improvement. It is a development of traditional budgeting systems based on activity analysis techniques. ABB reviews activities to ensure they are adding value and focuses on relevant performance measures, by linking strategic objectives of the organisation with the objectives of individual activities.

(b)

Cost Pool	**Cost Driver**	**Act. Based O.A.R.**
Machining	Machine hours	£/€1.95 per machine hour
Stores	No. of orders issued	£/€275 per order issued
Quality Assurance	Budgeted production – units	£/€9 per unit
Maintenance	No. repair hours	£/€30 per repair hour

(c)

	Dept 1 £/€	***Dept 2 £/€***	***Dept 3 £/€***	***Total £/€***
Machining	780,000	585,000	390,000	1,755,000
Stores	137,500	275,000	220,000	632,500
Quality Assurance	180,000	90,000	135,000	405,000
Maintenance	180,000	42,000	156,000	378,000
Total Overhead Cost	**1,277,500**	**992,000**	**901,000**	**3,170,500**
Budgeted production	20,000	10,000	15,000	45,000
Overhead Cost per unit	**£/€63.88**	**£/€99.20**	**£/€60.06**	

QUESTION 6

(a)

Estimated direct labour cost	24,000 units x 1 hour x £/€16	=	£/€384,000
Estimated Total Production Overhead		=	£/€384,000
Fixed Production Overhead	= 50%	**=**	**£/€192,000**

(b)

Projected Stockholding

	Quarter 1
Opening Stock	1,000
Production	6,000
Sales	(5,000)
Closing Stock (Units)	**2,000**

Projected Stock Valuation – Marginal costing

Stock – units		2,000
Cost per unit		
Direct materials	30	
Direct labour	16	
Variable Production Overhead	8	
	£/€54	**£/€108,000**

Projected Stock Valuation – Absorption costing

Stock – units		2,000
Cost per unit		
Direct materials	30	
Direct labour	16	
Total Production Overhead	16	
	£/€62	**124,000**

(c) HANNA Ltd

Projected Profit Statement – Marginal Statement

	Quarter 1 £/€	**Quarter 2 £/€**
Sales	500,000	700,000
Cost of Sales		
Opening Stock	54,000	108,000
Direct Materials	180,000	150,000
Direct Labour	96,000	80,000
Variable production overhead	48,000	40,000
Closing Stock	(108,000)	-
Gross Profit	**230,000**	**322,000**
Fixed Production Overhead	48,000	48,000
Administration & General Overhead	40,000	40,000
Net profit	**142,000**	**234,000**

Projected Profit Statement – Absorption Costing

	Quarter 1 £/€	Quarter 2 £/€
Sales	500,000	700,000
Cost of Sales		
Opening Stock	62,000	124,000
Direct Materials	180,000	150,000
Direct Labour	96,000	80,000
Production overhead	96,000	80,000
Closing Stock	(124,000)	-
Gross Profit	**190,000**	**266,000**
Administration & General Overhead	40,000	40,000
Under Absorption of Variable Overhead	-	8,000
Net profit	**150,000**	**218,000**

Workings

Fixed Production Overhead *Per Quarter* = £/€48,000

Administration & General Overhead *Per Quarter* = £/€40,000

Opening Stock restated using absorption costing value 1000 @ £/€62 £/€62,000

Calculation of under absorbed overhead

Variable	Production	5000 x 8	40,000
Fixed			48,000
Total	Quarter 2		88,000
Absorbed			80,000
Under absorbed variable overhead			8,000

(d) Reconciliation of Marginal and Absorption Profit Statements

Marginal Costing	Quarter 1	142,000	
	Quarter 2	234,000	
			376,000
Absorption Costing	Quarter 1	150,000	
	Quarter 2	218,000	
			368,000

Difference - *represented by difference in opening stock*

8,000