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# Answers

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1 (a) Quarterly Budgets

(i) Sales budget

Quarter	1	2	3	4
			<b>Units</b>	
Trend (units)	1,200	1,300	1,400	1,500
Seasonal variation	-150	+200	+300	-350
Forecast sales (units)	1,050	1,500	1,700	1,150
Forecast revenue (\$)	262,500	375,000	425,000	287,500

(ii) Production budget

Quarter	1	2	3	4
			<b>Units</b>	
Desired closing inventory (w1)	750	850	575	725 (w2)
Add sales	1,050	1,500	1,700	1,150
Less opening inventory (w3)	(525)	(750)	(850)	(575)
Production	1,275	1,600	1,425	1,300

Working 1: next quarter sales x 50% = 1,500 x 50% = 750 units etc.

Working 2: (1,600 – 150) x 50% = 725 units

Working 3: this quarter sales x 50% = 1,050 x 50% = 525 units etc.

(iii) Purchasing budget

Quarter	1	2	3	4
			<b>Kg</b>	
Desired closing inventory (w4)	5,120	4,560	4,160	5,360 (w5)
Used in production (w6)	5,100	6,400	5,700	5,200
Less opening inventory (w7)	(4,080)	(5,120)	(4,560)	(4,160)
Purchases (kg)	6,140	5,840	5,300	6,400
Costs (\$) (w8)	49,120	46,720	42,400	51,200

Working 4: next quarter production x 4 kg x 80% = 1,600 x 4 kg x 80% = 5,120 kg etc.

Working 5: production quarter 1, 2009 = ((1,700 + 200) x 50%) + 1,450 – 725 = 1675 units.

Closing inventory quarter 4 = 1675 units x 4 kg x 80% = 5,360 kg.

Working 6: production x 4 kg = 1,275 x 4 kg = 5,100 kg etc.

Working 7: this quarter production x 4 kg x 80% = 1,275 x 4 kg x 80% = 4,080 kg etc.

Working 8: Purchase kg x \$8.00 per kg = 6,140 kg x \$8.00 per kg = \$49,120 etc.

(iv) Labour budget

Quarter	1	2	3	4
Labour (hours) (w9)	7,650	9,600	8,550	7,800
Labour (\$) (w10)	114,750	144,000	128,250	117,000

Working 9: this quarter's production x 6 hours per unit = 1,275 units x 6 hours = 7,650 hours etc.

Working 10: 7,650 hours at \$15.00 per hour = \$114,750 etc.

(b) Approaches to budgeting.

(i) Rolling (or continuous) budgets

A rolling (or continuous) budget is one which is continually updated by adding a further accounting period (a month or a quarter) when the earlier accounting period has expired. Existing budgets may also be revised at the same time to reflect new circumstances.

Its advantages are:

- It forces managers to reassess budgets on a regular basis and results in budgets that are up to date and realistic in the light of current events.
- The budget becomes a better forecast of actual results.
- The arbitrary and artificial distinction between one accounting year and the next is removed, with the result that management always have access to a plan for the next twelve months.
- The workload of annual budget preparation is spread more evenly across the year.

**(ii) Flexible budgets**

A flexible budget is a budget, which, by recognising different cost behaviour patterns, is designed to change as volumes of output change.

Its advantages are:

- It recognises that different costs behave in different ways with respect to volume.
- It improves the quality of control information as it facilitates a comparison of like with like. Variances calculated against a flexed budget will give more meaningful control information than those against a fixed budget.
- It allows managers to forecast revenues, costs and profits at different activity levels and forces them to think about cost behaviour.

**(iii) Zero-based budgeting**

Zero-based budgeting (ZBB), as its name suggests, involves preparing a budget from a zero-base. Budget holders are told to assume that they had no budget allowance for particular activities and they would then be required to justify any expenditure in order for it to be included in the budget.

The advantages of ZBB are:

- Identification and elimination of unnecessary expenditure. Activities that do not contribute toward organisational objectives will be discontinued.
- Identification of wasteful expenditure. Overspending on activities will be identified and budgets will be reduced accordingly.
- It challenges the status quo and encourages a questioning approach to activities and expenditure. In this way it is the ideal antidote for incremental budgeting.
- The documentation that ZBB requires provides an in depth appraisal of an organisation's activities.
- It provides a plan to work to (in service departments) if more funds become available.

**Note: only two advantages of each method were required.**

**2 (a) Nicholson ratios and statistics.**

**Return on capital employed**

$$\frac{\text{Profit before interest and tax}}{\text{Capital employed}} \times 100\% = \frac{\$48\text{m}}{\$192\text{m}} = 25\%$$

**Return on sales**

$$\frac{\text{Profit before interest and tax}}{\text{Sales revenue}} \times 100\% = \frac{\$48\text{m}}{\$480\text{m}} = 10\%$$

**Asset turnover**

$$\frac{\text{Sales revenue}}{\text{Capital employed}} = \frac{\$480\text{m}}{\$192\text{m}} = 2.5 \text{ times}$$

**Annual number of complaints per 1,000 customers**

$$\frac{\text{Number of customer complaints}}{\text{Average number of customers (in thousands)}} = \frac{21,600}{1,960} = 11$$

**Percentage of customers lost per annum**

$$\frac{\text{Number of customers lost}}{\text{Average number of customers}} \times 100\% = \frac{117,600}{1,960,000} = 6\%$$

**Average time to resolve billing queries**

$$\frac{\text{Average number of bill queries unresolved at the end of each day}}{\text{Total bill queries}} \times 365 = \frac{118}{12,000} \times 365 = 3.6 \text{ days}$$

**Average wait for a telephone repair**

$$\frac{\text{Average number of telephones unrepaired at the end of each day}}{\text{Number of telephones returned for repair}} \times 365 = \frac{804}{10,000} \times 365 = 29.3 \text{ days}$$

**Percentage of sales attributable to new products**

$$\frac{\text{Sales turnover attributable to new products}}{\text{Total sales turnover}} = \frac{\$8\text{m}}{\$480\text{m}} = 1.7\%$$

**(b) Discussion of performance.**

**(i) Financial success**

Nicholson's return on capital employed at 25% is much higher than the industry average and this indicates that it is generating a good return on the money invested in it. This is largely explained by a return on sales of 10%, exactly double that of the industry average company. This could be due to higher prices, lower costs, or both. The only financial weakness apparent is that Nicholson does not enjoy as high a sales per \$ of capital employed as its competitors. Overall the company appears to have performed well financially.

**(ii) Customer satisfaction**

Nicholson does not perform as well as the industry average in this area. It is losing customers at twice the rate of the industry average company. It is often much easier to retain existing customers than to win new ones. The level of customer complaints is also much higher than average. These factors will result in lost sales. They should be seen as leading indicators of future financial problems.

**(iii) Process Efficiency**

The two processes that appear in the statistics are telephone repair and bill enquiries. On both counts Nicholson performs badly. Telephone repair appears to take an average of nearly 30 days (as compared to a two day industry average). This will prove annoying to customers and will probably result in lost sales (customers cannot make calls without telephones). Similarly delays in processing bill enquiries will eventually result in dissatisfied customers and poor financial results.

**(iv) Organisational learning and growth**

Less than 2% of Nicholson's income comes from new products, as compared to 20% for the industry average company. In a sector characterised by changing technology and product innovation this is very poor. Failing to innovate is a failing to compete. Eventually this will result in lost sales and profits.

In conclusion the company's financial results have been good in the past year, but the prospects for the future appear poor unless improvements are made to customer service, process efficiency and innovation.

**3 (a) High-low method**

**(i) Budgeted variable overhead per tonne**

Using the high-low technique,

$$\begin{aligned} \text{Budgeted variable overhead per tonne} &= \frac{\text{Change in total budgeted overhead}}{\text{Change in volume}} \\ &= \frac{(\$264,000 - \$200,000)}{(9,000 \text{ tonnes} - 5,000 \text{ tonnes})} \\ &= \$16 \text{ per tonne} \end{aligned}$$

**(ii) Budgeted fixed overhead for the period**

	\$
If total overhead at 9,000 tonnes =	264,000
Variable overhead = 9,000 tonnes x \$16 per tonne =	(144,000)
Budgeted fixed overheads	<u>\$120,000</u>

**(b) Variances**

**(i) Total overhead absorbed in period 9**

$$\begin{aligned} \text{Fixed overhead absorbed} &= 6,500 \text{ actual tonnes} \times \$24 \text{ per tonne} \\ &= \$156,000 \end{aligned}$$

**(ii) and (iii) Fixed overhead expenditure and volume variances**

Actual fixed overhead expenditure	\$125,000
Expenditure variance	> \$5,000 adverse
Budgeted fixed overhead expenditure	\$120,000
Volume variance	> \$36,000 favourable
Absorbed fixed overhead	
6,500 tonnes x \$24 per tonne	\$156,000

(c) Two possible operational causes for each of the two variances.

(i) Adverse Expenditure Variance

Potential causes of an adverse expenditure variance are

- An increase in the cost of services used.
- Wasteful expenditure.
- A change in the type of services used.

(ii) Favourable Volume Variance

Potential causes of a favourable volume variance are

- Seasonal demand leading to higher than average production levels.
- Favourable labour efficiency leading to increased production.
- Increased factory capacity due to the removal of a bottleneck.

(only two causes of each were requested)

(d) Attainable and ideal standards

An attainable standard is one which can be attained if a standard unit of work is carried out efficiently, a machine properly operated or material properly used. Allowances are made for normal losses, waste and machine downtime. They represent what should be achieved with a reasonable level of effort under normal operating conditions.

Ideal standards are those which can be achieved under the most favourable conditions with no allowance for normal losses, waste or machine downtime. They are set on the assumption of maximum efficiency and a perfect and ideal operating environment.

Operational performance standards are best based upon attainable standards. An ideal standard will normally prove to be impossible to attain and result in large adverse variances, which will give inappropriate signals to management and possibly damage motivation. An attainable standard is not necessarily 'easy', and can include a target element to encourage better performance, whilst at the same time resulting in variances that are useful in controlling costs and revenues.

4 (a) Profit statement

	January	February	March
Rooms rented (W1)	961	504	520
	\$	\$	\$
Sales:			
room rentals	115,320	60,480	62,400
restaurant (W2)	80,724	42,336	43,680
total sales	<u>196,044</u>	<u>102,816</u>	<u>106,080</u>
Contribution			
room rentals (W3)	98,022	51,408	53,040
restaurant (W4)	32,290	16,934	17,472
total contribution	<u>130,312</u>	<u>68,342</u>	<u>70,512</u>
Fixed costs	<u>(84,400)</u>	<u>(84,400)</u>	<u>(84,400)</u>
Profit	<u>45,912</u>	<u>(16,058)</u>	<u>(13,888)</u>

Working 1. January room nights = \$115,320 ÷ \$120 per night = 961 room nights etc.

Working 2. January restaurant sales = 961 room nights x 1.5 guests per room x \$56 per guest = \$80,724 etc.

Working 3. January room rental contribution = room nights x contribution per room night = 961 x (\$120 - \$18) = \$98,022 etc.

Working 4. January restaurant contribution = restaurant sales x contribution sales ratio = \$80,724 x 40% = \$32,290 etc.

(b) Break-even point

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{Contribution per room night (W5)}} = \frac{\$84,400}{\$135.60} = 622.4 \text{ room nights}$$

Working 5. Contribution per room night = total contribution ÷ number of room nights.

Using January figures \$130,312 ÷ 961 = \$135.60 per room night.

(c) Memorandum

To General manager, Overlook hotel

From An accounting technician

Subject: Hotel closure

Date: Today

I note your proposal to close the hotel for February and March 2008.

**Basis of the decision.**

The decision to close the hotel should be made on a relevant cost basis. That is, it should only be closed if the incremental costs of remaining open exceed the incremental revenues we could earn.

**Information required.**

To calculate the incremental costs and revenues we will need the following information.

- Budgeted prices, volumes and costs for 2008. There is no guarantee that 2008 demand conditions will be exactly the same as 2007.
- The behaviour of fixed costs during the closure period. It is unwise to assume that all fixed costs can be avoided during the temporary closure. Although the bulk of service costs can probably be avoided, insurance, repairs and depreciation costs may well continue to be incurred.
- A detailed analysis of budgeted service costs over the year. They are likely to vary seasonally.
- The behaviour of variable costs during the closure period. Closure will not necessarily lead to a saving of all variable costs. For example we may need to pay staff wages during closure in order that we retain staff for when we reopen.
- Will any incremental closure or reopening costs be incurred? For example will heating systems have to be decommissioned, will we need to pay for security guards during the closure period, will extra cleaning be required before reopening.
- The effect of closure on demand. Temporary closure would cause difficulties for any permanent residents we may have. If they move to other hotels we may lose more than two months sales. Closure for two months may have an impact on demand at other times of year, for example travel agents may stop recommending us if we don't provide an all year service.

I hope you find this useful. Please contact me if you wish to discuss the matter further.

(Only three items of information were required)

<b>1 (a)</b>	Budget construction			
	<b>(i)</b>	Sales units	2	
		Sales revenue	<u>1</u>	
				3
	<b>(ii)</b>	Closing stock	4	
		Opening stock	2	
		Production	<u>2</u>	
				8
	<b>(iii)</b>	Closing stock	4	
		Opening stock	2	
		Purchases kg	2	
		Purchase cost	<u>2</u>	
				10
	<b>(iv)</b>	Labour hours	2	
		Labour cost	<u>2</u>	
				4
				<u>25</u>
<b>(b)</b>	Budgeting approaches			
		Meaning 3 x 2	6	
		Advantages 6 x 1.5	9	
				<u>15</u>
				<u>40</u>
<b>2 (a)</b>	1 <sup>1</sup> / <sub>2</sub> marks per ratio/statistic			12
<b>(b)</b>	Financial, evidence 2 conclusion 1, max	3		
	Other, 2 marks per area, evidence 1, conclusion 1, max	<u>6</u>		
	Max for part b			<u>8</u>
				<u>20</u>

Note in parts ii, iii and iv. Look for method. Penalise errors only once.

<b>3</b>	<b>(a) (i)</b>	method	1			
		variable cost	<u>1</u>			
					2	
	<b>(ii)</b>	Substitution approach	1			
		Fixed overhead	<u>1</u>			
					2	
	<b>(b) (i)</b>	actual tonnes	1			
		absorbed overheads	<u>1</u>			
					2	
		<b>(ii) and (iii)</b>				
	2 per variance			4		
<b>(c)</b>	1 mark per cause, max			4		
<b>(d)</b>	attainable defined			2		
	ideal defined			2		
	discussion			<u>2</u>		
					<u>20</u>	

<b>4</b>	<b>(a)</b>	room nights	1.5			
		restaurant sales	1.5			
		rooms contribution	2			
		restaurant contribution	2			
		Profit	<u>1</u>			
					8	
	<b>(b)</b>	Contribution per room night	2			
		Break even point	<u>1</u>			
					3	
	<b>(c)</b>	Memorandum heading	1			
Relevant cost basis		2				
2 per sensible piece of information, max		<u>6</u>				
				<u>9</u>		
					<u>20</u>	