



CERTIFIED PUBLIC ACCOUNTANT
ADVANCED LEVEL 2 EXAMINATION
A2.2: STRATEGIC PERFORMANCE MANAGEMENT
DATE: THURSDAY 27, FEBRUARY 2025
MARKING AND ANSWER GUIDE

SECTION A

MARKING SCHEME

QUESTION ONE

Question	Sub Question	Mark per point	Total
1	a (i)	Award 1 mark for a well explained benefit of adopting a rolling budget by URL	1
		<i>Maximum Marks</i>	4
	a (ii)	Award a mark for calculating the correct budgeted sales volume to a maximum of 2 marks for the first 2 quarters.	2
		Award a mark for calculating the correct budgeted sales volume to a maximum of 2 marks for the following 2 quarters	2
		<i>Maximum Marks</i>	4
	b (i)	Award a mark for the calculation of the Mix variance on each product. i.e., Ochur, Remo oil and Alovera sap and 1 mark for the correct total mix variance.	4
		Award a mark for the calculation of the Yield variance on each product. i.e., Ochur, Remo oil and Alovera sap and 1 mark for the correct total Yield variance	4
		<i>Maximum Marks</i>	8
	b (ii)	Award 2 marks for a well-explained adverse material Mix variance	2
		Award 2 marks for a well-explained favourable material Yield variance	2
		<i>Maximum Marks</i>	4
	b (iii)	Award 1.5 marks each for an explanation of mix and yield and sales volume effects on sales to a maximum of 3 marks.	3
		Award a mark for mentioning other factors that could have led to an adverse sales volume variance such as increase in soap prices.	1
		<i>Maximum Marks</i>	4
	c (i)	Award 1.5 marks on each correct calculation of M and F up to a maximum of 3 marks.	3
		Award a mark for the correct contribution that could be on each ingredient to a maximum of 2 marks	2
		<i>Maximum Marks</i>	5
	c (ii)	Award 1 mark for the correct calculation of TXL's maximum extra amount up to a maximum of 3 marks	3
		Award 1 mark for the correct calculation of QRC's maximum extra amount up to a maximum of 3 marks	3
		<i>Maximum Marks</i>	6
	(d)	1 mark for shadow price explanation (maximum premium)	1
		1 mark for mentioning the internal opportunity cost	1
		1 mark for mentioning that it can be obtained at a normal variable cost	1
	1 mark for mentioning the overtime premium (benefit)	1	
	1 mark for mentioning premium on small orders of raw materials	1	
	A mark for any other valid point	1	
	<i>Maximum Marks</i>	5	
e (i)	Award 1 mark for the calculation of each equivalent industrial ratio up to a maximum of 4 marks	4	

e (ii)	Award 1.5 marks each for a discussion of ROCE, Gross and Net Profit Margin, and other components of ROCE up to a maximum of 6 marks	6
	<i>Maximum Marks</i>	<i>10</i>
	Total Marks	50

QUESTION 1 (a)

a. i. Explain two benefits of adopting a rolling budget by URL

A rolling budget is a financial planning approach where the budget is continuously updated by adding a new budget period (e.g., month, quarter) as the current period expires. Instead of creating a new budget from scratch each year or fiscal period, a rolling budget extends the planning horizon by always including an additional period at the end of the current budget period.

Rolling budgets offer several advantages compared to traditional static budgets:

- **Flexibility and Adaptability:** Rolling budgets are continuously updated, typically on a monthly or quarterly basis, which allows organizations to adjust their financial plans more frequently. This flexibility will allow URL to respond promptly to changes in the business environment, such as shifts in market conditions, customer preferences, or unexpected expenses.
- **Improved Forecasting Accuracy:** By updating forecasts regularly, rolling budgets provide a more accurate prediction of future financial performance. This will help URL to better plan for resources, manage cash flows, and make informed strategic decisions.
- **Encourages Continuous Planning:** Rolling budgets promote a culture of ongoing planning and evaluation within an organization. This continuous process will encourage URL departments and managers to stay engaged with financial goals and performance metrics throughout the year, rather than just during annual budget cycles.
- **Enhanced Control and Accountability:** With more frequent updates and reviews, rolling budgets enhance financial control and accountability. URL managers will more likely monitor their spending and performance against budgeted targets regularly, which can lead to better cost management and resource allocation.
- **Supports Long-term Planning:** While rolling budgets focus on short-term periods (e.g., 12 months), they can also facilitate long-term planning. By accumulating historical data and trends over time, URL will be able to develop a more robust long-term strategy.
- **Adaptable to Change:** Rolling budgets are particularly useful in volatile or rapidly changing industries where business conditions can shift quickly. This will allow URL to adjust its

financial plans in response to emerging trends, competitive pressures, or regulatory changes without waiting for the next annual budget cycle.

- **Improved Communication and Coordination:** Regular budget updates foster better communication and coordination across different departments and levels of management. This alignment will help URL by ensuring that everyone is working towards common financial goals and objectives.

In summary, rolling budgets provide greater agility, accuracy, and responsiveness compared to traditional static budgets, making them a valuable tool for modern businesses facing dynamic and uncertain operating environments.

- a. ii. Using the accountant formula, estimate budgeted sales for the final two quarters of this year and the first two quarters of the following year

Quarter	Budgeted Amounts	Constant	Quarter = Q (x+1)	Seasonal Variation	Actual /budgeted
2 current year			2		10,200
3 (current year)	10,200	1,000	3	1.15	15,180
4 (current year)	15,180	1,000	4	0.90	17,262
1 (next year)	17,262	1,000	5	0.85	18,923
2 (next year)	18,923	1,000	6	1.10	27,415

x is increment in quarters, therefore Q3 = x2+1 and quarter 4 = x3+1 etc.

Note that when preparing a rolling budget for the following period/quarters, the revised budget for the immediate quarter's starting point is calculated by using the actual level of activity for the period/quarter just ended. Therefore, the starting quantity is actual units for Quarter 2 which is 10,200 units.

- b. i. Calculate the total material mix variance and the total material yield variance for May.

Material mix variance

Material	per unit	Actual quantity in standard mix	Actual quantity in actual mix	Variance (kgs)	Standard price per Kg	Variance
		Quantity	Quantity	Quantity	FRW	FRW
Ochur	0.5	124,618	142,800	(18,182)	10	(181,824)
Remo oil	0.9	224,312	197,482	26,830	19	509,765
Alovera sap	0.7	174,465	183,112	(8,647)	28	(242,125)
	2.1	523,394	523,394			85,815

Material Mix Variance = \sum (Revised Standard Quantity – Actual Quantity) * Standard

Where:

Revised Standard Quantity = (Total Actual Material Used) * (Standard Proportion of each material)

Actual Quantity = The actual material used for each ingredient

Standard Cost Per Unit = The standard cost of each material

The standard material per unit is therefore calculated as follows:

Total standard material input per unit: $0.5+0.9+0.7 = 2.1$

The proportion of each material: Ochur – $(0.5/2.1*523,394 = 124,618$; Remo oil $(0.9/2.1*523,394 = 224,312)$ and Alovera sap – $(0.7/2.1*523,394 = 174,465)$.

Material yield variance

Material	per unit	standard quantity in standard mix	actual quantity in standard mix	Variance (kgs)	Standard price per Kg	Variance (Frw)
Ochur	0.5	122,400	124,618	(2,218)	10	(22,176)
Remo oil	0.9	220,320	224,312	(3,992)	19	(75,843)
Alovera sap	0.7	171,360	174,465	(3,105)	28	(86,931)
	2.1	514,080	523,394			(184,949)

Yield Variance = (Actual Total Output – Standard Total Output) * Standard Cost Per Unit

Where:

Standard Total Output = Budgeted production units * Standard Input per unit

Actual Total Output = Actual Production units

Standard Cost per Unit of Output = (Total standard cost of all materials)/ (Total standard material input)

Budgeted production units = 238,500; Standard material input per unit: Ochur, Remo oil and Alovera sap given as: 0.5, 0.9, and 0.7 respectively.

Total standard material input per unit: $0.5+0.9+0.7 = 2.1$

Total standard input required for budgeted output: $2.1 * 238,500 = 501,900$ units

Calculating Standard Material Input for Actual Output would be:

Actual production = 244,800; Standard Input required for actual production: $244,800 \times 2.1 = 514,080$ unit. Calculation for each of the material produces: Ochur – $(0.5/2.1 \times 514,080 = 122,400)$; Remo oil $(0.9/2.1 \times 514,080 = 220,320)$ and Alovera sap – $(0.7/2.1 \times 514,080 = 171,360)$.

Calculating Actual Input with Standard Mix:

Ochur – $(0.5/2.1 \times 523,394 = 124,618)$; Remo oil $(0.9/2.1 \times 523,394 = 224,312)$ and Alovera sap – $(0.7/2.1 \times 523,394 = 174,464)$.

b. ii. Briefly explain what the adverse materials mix and favorable materials yield variances indicate about production at Huye.

Materials mix variance will occur when the actual mix of materials used in production is different from the standard mix. So, it is the inputs that are being considered. Since the total mix variance is adverse, this means that the actual mix used in June was more expensive than the standard mix.

A material yield variance arises because the output that was achieved is different from the output that would have been expected from the inputs. Whereas the mix variance focuses on inputs, the yield variance focuses on outputs. In June, the yield variance was favorable, meaning that the inputs produced a higher output than expected.

b.iii. Discuss whether the material mix and material yield variance may have led to an adverse sales volume variance.

Whilst the mix and yield variances provide a certain level of information, they do not necessarily explain any quality issues that arise because of the change in mix. The consequences of the change may well have an impact on sales volumes.

In this case, the sales volume variance is adverse, meaning that sales volumes have fallen. It is not known whether they also fell in May but it would be usual for the effects on sales of the change in mix to be slightly delayed, in this case by one month.

There may also be other reasons for an adverse sales volume variance that may not be related to sales mix variance such as an increase in price. These need to be investigated.

c.

i. Production mix and related contribution

The optimal production mix can be found by solving the two equations given for M and F.

$$1.5M + 2F = 600$$

$$0.75M + 0.5F = 210$$

Multiplying the second equation by 4 produces:

$$1.5M + 2F = 600$$

$$3M + 2F = 840$$

$$1.5M = 240$$

$$M = 160$$

Substituting $M = 160$ in the second equation produces:

$$0.75 \times 160 + 0.5F = 210$$

$$0.5F = 90$$

$$F = 180$$

The Optimal solution is when 160 male soaps are produced and 180 female soaps are produced. The contribution gained is FRW 266,400.

$$C = 720M + 840F$$

$$C = (720 \times 160) + (840 \times 180)$$

$$C = \text{FRW } 266,400$$

ii. Calculate the shadow prices of Material QRC and TXL.

The shadow prices can be found by adding one unit to each constraint in turn.

Shadow price of TXL

$$1.5M + 2F = 601$$

$$0.75M + 0.5F = 210$$

Multiplying the second equation by 4 produces:

$$1.5M + 2F = 601$$

$$3M + 2F = 840$$

$$1.5M = 239$$

$$M = 159.3$$

Rounded off to 159

Substituting $M=159$ into the second equation

$$0.75 \times 159 + 0.5F = 210$$

$$119.25 + 0.5F = 210$$

$$0.5F = 210 - 119.25$$

$$F = 181.5$$

Rounded off to 182

The contribution earned at this point would be $= (720 \times 159) + (840 \times 182) = 267,360 - 266,400$ which is an increase of FRW 960. Hence the shadow price of TXL is FRW 960 per kilogram which is the maximum extra amount that would be paid on this ingredient.

Shadow price of QRC

$$1.5M + 2F = 600$$

$$0.75M + 0.5F = 211$$

Again, multiplying the second equation by 4 produces

$$1.5M + 2F = 600$$

$$3M + 2F = 844$$

$$1.5M = 244$$

$$M = 163$$

Substituting $M = 163$ in the first equation produces:

$$(1.5 \times 163) + 2F = 600$$

$$2F = 355.5$$

$$F = 178$$

The contribution earned at this point would be $= (720 \times 163) + (840 \times 178) = 266,880 - 266,400$ which is an increase of FRW 480. Hence the shadow price of QRC is FRW 480 per litre which is the maximum extra amount that would be paid on this ingredient.

d. Assuming you are URL's management accountant, explain to James what a shadow price is; its applicability, and the benefits URL may experience in its use.

- A shadow price represents the maximum premium above the normal rate URL should be willing to pay for more of a scarce resource. It is equal to the increased contribution that can be gained from gaining that extra resource.
- The shadow price of a resource is its internal opportunity cost. This is the marginal contribution towards fixed costs and profit that can be earned for each unit of the limiting factor that is available.
- A shadow price only applies when the extra unit of resource can be obtained at its normal variable cost. The shadow price also indicates the amount by which contribution could fall if an organization is deprived of one unit of the resource.
- A shadow price may enable URL management to make informed decisions about overtime premium payments for their staff.
- A shadow price may also be used to determine the amount of premiums that can be paid on small orders of soap raw materials to enhance the URL's performance.

(e) (i) Calculate the ratios for Bini Limited and compare them with the sector performance.

(1) Calculation of specified ratios:

Bini	Bini Limited	Sector average
Return on capital employed (255+30 loan interest/755)	37.7%	25,30%
Net assets turnover (3,330/755)	4.4 times	2.2 times
Gross profit margin (740/3,330 x 100)	22%	35%
Net profit (excluding abnormal loss) margin (525/3,330) x 100%	15.8%	-
Net profit (before tax) margin (255/3,330 x 100)	7.7%	15.5%

(ii) Analysis of Bini Limited’s profitability performance compared to the sector average for the year to 30 June 2024:

ROCE and Net Profit Margin

With a return on capital utilized more than 37% greater than the industry average, Bini has an outstanding ROCE. The asset turnover and profit margins are the elements that make up the return on capital employed. Although Bini's asset turnover in these regions is twice as high as the industry average, the net profit margin following abnormal loss is significantly lower. Nonetheless, Bini's margins are quite comparable to the industry average if the anomalous losses are eliminated and handled as a one-off expense.

Asset turnover

This brief analysis suggests that Bini's efficient asset turnover, that is, the fact that Bini is utilizing its assets twice as efficiently as its rivals, is the only reason for its greater return on capital employed. The high asset turnover above may not be real as the remark in the statement of financial statements makes it clear how old Bini's non-current assets are. Merely 10% of their initial cost remains as their net book value. The effect of this is that their low net book value translates into a high asset turnover rate. They will soon need to be replaced if and when that happens, the turnover ratio will be much lower than what it is currently unless Bini had overestimated the life of its assets in its depreciation projections. It may also be possible that Bini is using assets that are not on its statement of financial position to generate sales.

Gross margin

A further concern is the comparison of the two computed margins with the sector average, taking into account or disregarding the impact of average losses. Bini's gross profit margin is significantly less than the industry average. Bini's gross margin would be significantly lower if the abnormal losses were recorded at the trading account level, as they should be given the outdated inventory. Given that Bini's net margin is comparable to the industry average, it seems that Bini has more control over its operational expenses.

SECTION B

QUESTION TWO

Marking Guide

Question	Sub question	Description	Marks
2	(a)	Critically assess the financial viability of investing in the new technological equipment	
		Award 1 mark for the calculation of expected values	1
		Award 1 mark for initial investment and residual value	1
		Award 1 mark for the correct incremental production costs	1
		Award 0.5 marks for each well-calculated Tax savings up to a maximum of 2 marks	2
		Award 0.5 marks for a well-calculated tax allowable depreciation up to a maximum of 2 marks	2
		Award 0.5 marks for a well-calculated present value up to a maximum of 2 marks	2
		Award 1 mark for calculation of NPV	1
		Award 1 mark for the comment on the financial ground	1
		Award 2 marks for the comment on non-financial ground	1
		<i>Maximum Marks</i>	<i>12</i>
	b (i)	Advise the Chief Executive Officer on the total costs attributable to the production of 10,000 units and estimate the output that can be produced using FRW 60 million	
		Award 2 marks for determination of linear equation (1 Mark for A, 1 Mark for B)	2
		Award 1 mark for estimating total costs of producing 10,000,000 units	1
		Award 1 mark for estimating total units to be produced using FRW 60 million	1
		<i>Maximum Marks</i>	<i>4</i>
	(ii)	Discuss how the concept of the learning curve can be used in the performance management of Harambe Ltd.	
		Award 1 mark for a well-explained definition of the learning curve	1
		Award 1 mark for each well-explained way where the learning curve can be used as a strategic management tool to a maximum of 4 marks	4
		<i>Maximum Marks</i>	<i>5</i>
	(iii)	Briefly explain how the negotiated transfer pricing method can be used at Harambe Ltd to ensure goal congruence	
		Award 1 mark for the definition of a negotiated transfer price	1
		Award 0.5 marks for each explained process in which negotiated transfer can be used to achieve goal congruence up to a maximum of 3 marks	3
		<i>Maximum Marks</i>	<i>4</i>
		Total	25

Model Answer

a. Critical assessment of the financial viability of investing in the new technological equipment

This assessment will involve using the investment appraisal of the technological equipment to be acquired using the Net present value calculation of incremental cost and benefits of the equipment. This NPV will then be compared with the expected value of fines.

Expected value of fines

Amount-FRW	Probabilities %	Expected Values
12,500,000	30	3,750,000
19,800,000	40	7,920,000
22,480,000	30	6,744,000
Total expected value		18,414,000

Net Present Value of Acquiring a Technological Equipment

Years	0	1	2	3	4	5
	FRW'000	FRW'000	FRW'000	FRW'000	FRW'000	FRW'000
Initial investment	(40,000)					
Incremental production cost-W1		(500)	(680)	(560)	(660)	
Tax savings-W2			140.0	190.4	156.8	184.8
Tax allowable Depreciation			2,800	2,100	1,575	3,325
Residual value					5,000	
Total net cash flows	(40,000)	(500)	2,260	1,730	6,072	3,510
Discount factor @10%	1.0000	0.9091	0.8264	0.7513	0.6830	0.6209
Present Values	(40,000)	(455)	1,868	1,300	4,147	2,179
Net Present Value	(30,960)					

Conclusion: As the expected value of fines of FRW 18,414,000 is less than the Net present value of acquiring the technological equipment of FRW 30,960,000, based on financial grounds, the company should not go with the acquisition of the equipment, rather continue its existing production method and pay the fines of FRW 18,414,000.

On the other hand, the proposed investment can be assessed on a non-financial ground

Based on non-financial grounds, Harambe Ltd should go with the proposed investment even if it will incur many costs compared to the payment of fines. The company should not deliberately accept to pay fines as it can attract much compliance, social costs, and political risks derived from

deteriorating the environment. Therefore, it would not be ethical to willingly deteriorate the environment.

Working 1: Incremental production costs

Years	Year 1	Year 2	Year 3	Year 4
	FRW'000	FRW'000	FRW'000	FRW'000
Sales	25,000	34,000	28,000	33,000
2% Incremental cost	500	680	560	660

Working 2: Tax savings from incremental production costs

Years	Year 1	Year 2	Year 3	Year 4
	FRW'000	FRW'000	FRW'000	FRW'000
2% Incremental cost	500	680	560	660
Tax saving	140.00	190.40	156.80	184.80

Working 3: Tax allowable depreciation

	NBV	Depreciation	Tax rate %	Tax allowable depreciation	Timing
	FRW'000	FRW'000	FRW'000	FRW'000	
Year 1	40,000	10,000	28	2,800	2
Year 2	30,000	7,500	28	2,100	3
Year 3	22,500	5,625	28	1,575	4
Year 4	11,875	11,875	28	3,325	5

(i) Advise the Chief Executive Officer on the total costs attributable to the production of 10,000,000 units and estimate the output that can be produced using FRW 60 million

The estimate can be calculated using the High-Low or the least square method. The High-Low method would be estimated using the following linear equation: $Y=A+Bx$. Where A is total fixed costs, Y is the intercept/coefficient while X stands for the level of activity.

B will be given by: $(\text{Total cost@ high activity level} - \text{Total cost@ low activity level}) / (\text{High activity level} - \text{low activity level})$ while

A will be given by replacing the value of B in the equation above using either low or high-activity level data.

	Quantity	Total cost	
	Units (000)	FRW'000	B
Low Activity Level	5,000	25,000	
High activity level	18,000	45,300	1.562

Considering the above data, the production linear equation would be: $Y = A + 1.562X$

Replacing the equation to get the Value of A:

$$45,300,000 = A + 1.562(18,000,000) \text{ or } 25,000 = A + 1.562(5,000,000)$$

$$45,300,000 = (A + 1.562(18,000,000))$$

$$45,300,000 = A + 28,107,692$$

$A = 17,192,308$ (The small difference is due to rounding). Therefore, the equation would become $Y = 17,192,308 + 1.562X$

The total costs attributable to the production of 10,000,000 units would be given by:

$$Y = 17,192,308 + 1.562(10,000,000 \text{ units}), \text{ The total cost of producing the 10m units would be: FRW } 32,807,692$$

The output that can be produced using FRW 60 million will be given by

$$60,000,000 = 17,192,308 + 1.562X$$

$$X = 27,413,793 \text{ Units}$$

(ii) Briefly explain how the concept of the learning curve can be used in the performance management of Harambe Ltd.

The learning curve shows the relationship between the cumulative learning or experience gained and the improvement in performance or productivity. As more experience is accumulated, less time or effort is typically required to complete a task.

In the context of performance management at Harambe Ltd, the concept of a learning curve can be a valuable tool in several ways as explained below:

- **Training and Development:** Understanding the learning curve helps in designing effective training programs. It allows managers to anticipate how quickly employees acquire new skills or knowledge. By aligning training timelines with the learning curve, Harambe Ltd will ensure employees reach optimal performance levels efficiently.
- **Performance Evaluation:** The learning curve concept can aid in evaluating employee performance over time. It provides a framework for assessing whether an employee's rate of learning matches expectations. This evaluation helps in identifying high performers who quickly adapt and learn, as well as those who may need additional support or coaching.
- **Resource Planning:** Knowledge of the learning curve assists resource allocation and capacity planning. It helps managers estimate the time and resources required for employees to achieve proficiency in their roles. This can optimize staffing levels and project timelines, ensuring efficient operations at Harambe Ltd.

- **Setting Realistic Goals:** Managers can use the learning curve to set realistic performance goals for employees. By understanding the typical trajectory of skill acquisition, they can establish milestones that challenge employees without overwhelming them. This approach fosters motivation and engagement among the workforce.
- **Continuous Improvement:** The learning curve is not static; it evolves as processes improve and employees gain experience. By regularly monitoring the learning curve metrics, Harambe Ltd can identify opportunities for continuous improvement in training methods, job design, and overall performance management strategies.

Overall, incorporating the learning curve concept into performance management at Harambe Ltd helps align employee development with organizational goals, enhances productivity, and promotes a culture of continuous learning and improvement.

(iii) Discuss how a negotiated transfer pricing method can be used at Harambe Ltd to ensure goal congruence.

Transfer pricing refers to the prices of goods and services that are exchanged between companies under common control. A transfer price based on opportunity cost is often difficult to identify, due to a lack of suitable information about costs and revenues in individual divisions. In this case, transfer prices will likely be set using negotiation. The agreed price may be finalised from a mixture of accounting arithmetic, politics, and compromise.

A negotiating system that might enable goal-congruent plans to be agreed upon between profit centres is as follows:

- Profit centres submit plans for output and sales to the head office, as a preliminary step in preparing the annual budget.
- The Head office reviews these plans, together with any other information it may have obtained, and conducts amendments to divisional plans that may be discussed with the divisional managers.
- Once divisional plans are acceptable to the head office and consistent with each other, the head office might let the divisional managers arrange budgeted transfers and transfer prices.
- Where divisional plans are inconsistent, the head office might try to establish a plan that would maximise the profits of the company as a whole. Divisional managers would then be asked to negotiate budgeted transfers and transfer prices on this basis.
- If divisional managers fail to agree on a transfer price between themselves, a head office 'arbitration' manager or team would be referred to for an opinion or a decision.
- Divisions finalise their budgets within the framework of agreed transfer prices and resource constraints.
- The Head office monitors the profit performance of each division.

QUESTION THREE

Marking Guide

Qn	Sub-qn	Mark per point	Total
3	(a)	Award 1 mark for the definition of TQM	1
		Award 1 mark for each TQM feature and benefit discussed contrary to standard costing up to a maximum of 5 marks	5
		<i>Maximum Marks</i>	6
	b (i)	Award 1 mark for an explanation of standard cost	1
		Award a mark for each identified use of standard cost up to a maximum of 3 marks.	3
		<i>Maximum Marks</i>	4
	b (ii)	Award 1 mark for calculation of market size	1
		Award 1 mark for calculation of market share	1
		Award 1 mark for a valid explanation of the significance of the calculated variances	1
		<i>Maximum Marks</i>	3
	c (i)	Award 1 mark for mission statement not meeting objective	1
		Award 1 mark for mentioning that the mission of XYZ has changed	1
		Award a mark for mentioning that the mission statement needs to be updated	1
		<i>Maximum Marks</i>	3
	c (ii)	Award 2 marks for each critical success factor mentioned along with its key performance indicator highlighted	6
		NB: Just mentioning a CSF without a KPI should only attract 1 mark	
	<i>Maximum Marks</i>	6	
c (iii)	Award a mark for each quantitative non-financial performance measure identified, and explained to a maximum of 3 marks.	3	
	<i>Maximum Marks</i>	3	
	Total		25

(a) Discuss the view that there is no longer a place for standard costing if TQM is introduced.

Total quality management (TQM) is the process of applying a zero defects philosophy to the management of all resources and relationships within an organisation as a means of developing and sustaining a culture of continuous improvement that focuses on meeting customers' expectations.

TQM and standard costing

- TQM relies on a culture of continuous improvement within an organization. For this to succeed, the focus must be on quality, not quantity. The cost of failing to achieve the desired level of quality must be measured in terms of internal and external failure costs.

- Traditional variance analysis focuses on quantity rather than quality. This could mean that, lower-grade labour reduces costs, to cite an example. This would be totally at odds with a TQM culture, which is the basis of the problem of the two systems running side by side.
- A traditional standard system allocates responsibility for variances to the different departmental managers. When a TQM system is adopted, all employees' roles in ensuring quality are highlighted and everyone is seen as equally important in the quality assurance process. This difference would make it difficult for the two systems to co-exist.
- Traditional standard costing systems usually make allowances for waste. This would be contrary to the TQM philosophy, which aims to eliminate all waste.
- Continuous improvement makes the standard cost system less relevant due to regular small changes to the process. It would seem to be the case that the two systems would struggle in any company.

(b) (i) Discuss ways standard costs may be useful in management accounting decision-making.

Standard costs refer to estimated costs for a production process that a company uses to plan its budget. Standard cost systems may be viewed as less relevant in modern business systems. The achievement of effective decision-making may benefit from reference to some standard or base and measurement through a time of the achievement of progress towards or variation from such a standard or base. Examples of such uses are:

- The evaluation of the costs of proposed new products and their profitability. Existing standards may be used as the starting point for formulating components of an estimated cost for a proposed new product. For example, the time taken to perform a specific task that is already performed as part of the manufacturing cycle for another product may be used as a component in preparing an initial estimate for the proposed new product.
- In a target costing situation where the product price, market size, and required return have been identified, target costs may be estimated. The target cost may then be compared with a current standard to establish the size of any cost gap that exists. This gap may then be investigated with a view to its reduction or elimination through the application of techniques such as value engineering.
- Decisions about the need for actions for improvement and change may be aided through the monitoring of variance trends over time. Trends may be monitored to identify situations in

which lack of improvement may be investigated to improve and change product design, production methods, etc.

b (ii) Calculate market share and market size variances

Market Planning and operational variance

Planning variance

Market size

Original budgeted volume/units 250,000

Revised units (250,000 x 85%) 212,500

Variance in units 37,500

Valued at contribution @ FRW 86 = FRW 3,225,000 Adverse

Operational Variance

Market share variance

Revised volume/units 212,500

Actual volume 231,000

Variance in units 18,500

Valued contribution @FRW 86 = FRW 1,591,000 Favorable.

Management cannot control the fall in market size, which results in planning variance, while a fall in market share is controllable and forms part of the operational variance. In this case, the operational variance is Favorable, indicating the market potential of the company's products.

c (i) Advise the directors of Catty Services regarding the appropriateness of its mission statement.

Till now it would appear that the mission statement of XYZ Ltd was relevant to its central mission '... thereby providing very high value for money to all our clients'.

However, the proposed opening of the Cat Sanctuary might be considered to have changed the mission of XYZ Ltd. The Cat Sanctuary is a good example of the concern of the directors of XYZ Ltd for Corporate Social Responsibility. The concern is obviously not one solely based on profitability or continued 'value for money' for its customers.

Therefore, one might conclude that the mission statement no longer communicates to the business world what XYZ Ltd is all about and that a change in mission can necessitate a revised mission statement.

(ii) Explain the term 'critical success factor' and discuss THREE critical success factors for Catty Services highlighting a key performance indicator for each critical success factor.

Critical success factors (CSFs) are performance requirements that must be achieved if an organization is to be successful and outperform its competition. In the context of XYZ Ltd, CSFs should be regarded as service features that are particularly valued by cat owners.

Three critical success factors are as follows:

Health – All Cat owners wish their pets to be healthy and therefore staff at XYZ Ltd must take all necessary steps to ensure that the premises are disease-free. A key performance indicator in this regard would be the number of cats that become ill during their stay at XYZ Ltd's premises.

Safety – Cat owners are entrusting their pets to XYZ Ltd who are responsible for their safety. A key performance indicator in this regard would be the number of accidents reported during a given period.

Cleanliness – XYZ Ltd must achieve the highest possible level of cleanliness throughout its entire premises. An example of a key performance indicator of cleanliness would be the time taken to clean the cat kennels.

(iii) Excluding the number of complaints by clients, identify and briefly explain THREE quantitative non-financial performance measures that could be used to assess the 'quality of service' provided by Catty Services. (3 Marks)

To assess the quality of service provided by the XYZ Ltd the following performance measures might be used:

- The percentage of repeat bookings by cat owners which is evidence of customer satisfaction and perhaps ultimately customer loyalty.
- The percentage of cat owners who were able to book a cat stay at their preferred date and time is an indication of the availability or non-availability of the services provided by XYZ Ltd.
- The percentage of cats collected and delivered on time from and to the homes of cat owners.

QUESTION FOUR

Marking Guide

Question	Sub question	Description	Marks	
4	(a)	Using relevant calculations, compute and discuss the percentage change required to each variable in the report to turn the tender unattractive (loss).		
		Award 1 mark for a well-calculated and explained selling price sensitivity	1	
		Award 1 mark for well-calculated and explained material cost sensitivity	1	
		Award 1 mark for well-calculated and explained labour cost sensitivity	1	
		Award 1 mark for well-calculated and explained variable overhead sensitivity	1	
		Award 1 mark for well-calculated and explained contribution sensitivity	1	
		Award 1 mark for well-calculated and explained fixed overhead sensitivity	1	
			Award a mark for identifying the most sensitive variable and the rationale	1
			<i>Maximum Marks</i>	7
	(b)		Briefly explain other FIVE ways in which risk and uncertainty can be incorporated into planning and forecasting.	
			Award 1 mark for a well-explained way of incorporating risk and uncertainty up to a maximum of 5 marks	5
			<i>Maximum Marks</i>	5
	(c)		As Betty & Sisters Manufacturing Consultant, write a memo to the Chief Executive Officer responding to his concern	
			Award a mark for a well-explained definition of the ABC system	1
			Award a mark for the proper layout of a memo	1
			Award 1 mark for each well-explained ABC stage up to a maximum of 3 marks and 3 marks for the benefits of the ABC system.	6
			<i>Maximum Marks</i>	8
	(d)		Briefly explain the rationale behind the popularity of a full cost-plus pricing strategy over other pricing methods	
			Award 1 mark for the definition of full cost-plus pricing	1
			Award 1 mark for each reason for the popularity of the full cost-plus pricing method to a maximum of 4 marks.	4
		<i>Maximum Marks</i>	5	
		Total	25	

Model Answer

a) Using relevant calculations, compute and discuss the percentage change required to each variable in the report that may turn the tender unattractive (loss).

	Unit cost/price	200,000 bottles	
		FRW'000	Sensitivity
Sales	1,000	200,000,000	6%

Variable costs			
Material cost	400	80,000,000	15%
Labour costs	250	50,000,000	24%
Overheads	150	30,000,000	40%
	800	160,000,000	
Contribution	200	40,000,000	30%
Fixed overheads	140	28,000,000	43%
Profit	60	12,000,000	

The benchmark is profit. Divide each element with profit.

Sales sensitivity: The sensitivity of sales is 6%, this is the most sensitive variable among others. This means that the management of Betty & Sisters Manufacturing Co. should put much attention to this variable. It means that the selling price is very sensitive, if it is reduced by 6% the profit would fall to zero. A reduction of more than 6% of the selling price would result in a loss.

Contribution sensitivity: The sensitivity of the contribution of 30% is a bit big compared to that of the selling price, material cost and labour costs. This sensitivity also stands for selling quantity and variable cost per unit. This means that it would need variable cost per unit to increase or total selling quantity to reduce by 30% for this tender to fall to a loss.

Material cost sensitivity: The material cost sensitivity is at 15%. This means that it would need material costs to increase by 15% for the tender to experience a loss.

Labour cost sensitivity: The labour cost sensitivity is at 24%. This means that it would need labour cost to increase by 24% for the tender to experience a loss.

Variable and fixed overhead sensitivity: Their variable and fixed overhead sensitivity is at 40% and 43% respectively. This means that it will require an increase of 40% and 43% increase in variable and fixed overhead respectively for this tender to result in a loss.

Based on the above calculations, the selling price is the most sensitive variable that the management should put much emphasis. This is because it would require just a small percentage of 6% for the tender to result in a loss.

b) Briefly explain other FIVE ways in which risk and uncertainty can be incorporated into planning and forecasting.

The risks and uncertainties can be incorporated into forecasting in any of the following ways:

- **Expected values:** This involves assigning different probabilities to different scenarios. The average from the expected values is then used as it is considered to be more accurate than the individual estimate
- **Sensitivity analysis:** This involves calculating the impact of a given single variable on the result of the project.
- **Simulation:** It is like the sensitivity analysis, the only difference is that the sensitivity analysis analyses the impact of a single variable on the result of the company/project while the simulation model, uses computer software packages and analyses the impact of many variables to the result of the project/company.
- **Risk-adjusted cost of capital:** This involves adjusting the discount rates that are to be used in discounting cash flows. The upward adjustment decreases the present values while the downward adjustment of the discount rate increases the present values. So, it depends on what the adjustment the user wants.
- **Discounted payback period:** This involves discounting the cash flows before being used in payback period calculations.

c) As Betty & Sisters Manufacturing Co, Consultant, write a memo to the Chief Executive Officer responding to his concern

From: Consultant

To: Chief Executive Officer

Date and Place: Kigali, the 01 January 2024

Subject: The stages and benefits of Activity-Based Costing (ABC) system

The Activity Based costing (ABC) system involves the allocation of overheads to their respective activities called cost drivers while in the traditional method, the overheads are allocated using direct labour or machine hours.

The following are the stages of the ABC system:

- (i) Identifying major activities that take place in an organization
- (ii) Assigning costs to activity cost centers: This involves assigning costs to cost pools or cost centers for each activity.
- (iii) Selecting the appropriate cost drivers: This involves identifying the factors that influence the costs of particular activities

(iv) Assigning the cost of activities to products: This involves assigning such costs according to each product's demand for activities.

In brief, the following are the benefits of using the ABC system

- (i) ABC helps in the reduction of costs as it provides information that is meaningful to management which helps to make the right decision.
- (ii) ABC helps to allocate the non-manufacturing costs such as the cost of ordering, marketing, advertising, etc.
- (iii) ABC provides accurate and reliable cost information.
- (iv) ABC helps in formulating the fact-based policy in cost management.
- (v) When the cost of each activity is determined using the ABC system, it allows a precise calculation of product or service profit margins.

Conclusion: The ABC system provides more accurate and meaningful data than allocating the total overhead in a very arbitrary way as the conventional method does. The adoption of ABC will facilitate the company to ensure all costs are properly allocated to each activity in a very meaningful way.

d) Briefly explain the rationale behind the popularity of full cost-plus pricing strategy over other pricing methods.

Full cost-plus pricing is a method of determining the sales price by calculating the full cost of the product and adding a percentage markup for profit. In practice, cost is one of the most important influences on price. Many firms base prices on simple cost-plus rules (costs are estimated and then a markup is added in order to set the price).

The following are the reasons behind this method's popularity:

- Planning and use of scarce capital resources are easier.
- Assessment of divisional performance is easier.
- It emulates the practice of successful large companies.
- Organisations fear government action against 'excessive' profits.
- There is a tradition of production rather than of marketing in many organisations.
- There is sometimes tacit collusion in industry to avoid competition.
- Adequate profits for shareholders are already made, giving no incentive to maximize profits by seeking an 'optimum' selling price.
- Cost-based pricing strategies based on internal data are easier to administer.
- Over time, cost-based pricing produces stability in pricing, production, and employment.

End of Marking and Answer Guide