CERTIFIED ACCOUNTING TECHNICIAN

STAGE 3 EXAMINATIONS

S3.2: MANAGEMENT ACCOUNTING

MARKING GUIDE AND MODEL ANSWERS

SECTION A

Marking Guide

QN	Answer	Marks
1	B	2
2	D	2
3	D	2
4	A	2
5	C	2
6	B	2
7	B	2
8	D	2
9	C	2
10	B	2

Model Answers

QUESTION ONE

The correct answer is B

The quantity of materials to be purchased = Materials required for production – opening inventory of materials + closing inventory of materials

Option A, C and D are not correct because they don't give the right formula.

QUESTION TWO

The correct answer is D

A is not correct as it explains qualitative data and also data that can be counted (discrete)

B is not correct because of discrete data

C is not correct because it defines qualitative

QUESTION THREE

The correct Answer is D which explains investment centre

i) Cost Centre: Explains centres where only costs are incurred
ii) Revenue Centre: Explains centres where only income is earned
iii) Profit Centre: Explains centres where cost are incurred and also income earned

QUESTION FOUR

The correct answer is A: Getting it right first time is a principle of TQM

B, C and D are not correct because they don't explain principles of TQM

QUESTION FIVE

The correct answer is C which explains efficiency

A Not correct because it explains Economy

B Not correct because it talks of minimization of output instead of maximization

D Not correct because it explains effectiveness

QUESTION SIX

The correct answer is B

Revenue = Capital employed * Asset Turnover = 350 million * 1.2 = 420 million

A is not correct because it divides = 350 million / 1.2 = 292 million

C is not correct as it multiplies current assets * turnover = 25 million * 1.2 = 30 million

D is not correct because it takes current assets / Turnover = 25 million / 1.2 = 21 million

QUESTION SEVEN

The correct answer is B: It correctly explains basic standards

A, C and D statements are correct yet the question asked statement that are not true.

QUESTION EIGHT

The correct answer is D: Preparation of sales budget is a function of sales department and not budget committee.

A, B and C are functions of a budget committee.

QUESTION NINE

The correct answer is C This is a detailed budget

Option A, B and D are contained in a budget manual

QUESTION 10

The correct answer is B
A is not correct because it explains time series analysis
C is not correct because it explains standard cost
D is not correct because it explains cost unit

SECTION B

QUESTION 11

Marking Guide

QN	Description	Marks
11, a	SWOT to analyse internal and external factors	
	Internal factors (strength & weaknesses)	2
	Award 1 mark for strengths and 1 for weakness analysed	
	External factors (opportunities & threats)	2
	Award 1 mark for opportunity and 1 for threats analysed	
11, b	Points to consider when analysing type of change	
	Award 2 marks for any clear point explained	6
	Total marks for question 11	**10**

Model Answers

a) Using SWOT model, analyse the internal and external factors that affect the performance of a business

Note: Any point clearly explained in each of the Strengths, Weakness, Opportunities & Threats attract 4 marks. For example:

Strengths

- Maintaining low turnover of staff,
- Maintaining a good staff morale,
- Willingness to develop and remain with the company

Weaknesses

- The staff are based solely in one area, so the sales force has to travel long distances to make sales in other regions of Rwanda or overseas.

Opportunities

- A neighboring country has recently seen an increase in sales due a local need for the items produced by our organization

Threats

- Increasing cheap imports from the Far East are beginning to reduce the market share of our company within Rwanda.

b) Explain any three points to be considered when analysing the type of change required for an organization

- The seriousness of the problem to be resolved: changing a system riddled with inherent weaknesses or subject to fraud is evidently a much bigger job than ensuring an upgrade of an existing off-the-shelf payroll package.
- The scope of the change: implementing a completely new accounting system is more of a challenge than revising the responsibilities of two members of staff.
- The context in which change takes place: changes needed to safeguard jobs may be easier to implement than those that staff perceive to be cosmetic in nature, or unnecessary.

QUESTION 12

Marking Guide

QN	Description	Marks
12, a	Difference between probability and non-probability sampling	
	Clear explanation of probability sampling	1
	Example of probability sampling	
	Clear explanation of non-probability sampling	1
	Example of non-probability sampling	
12, b	Regression analysis	
i	Variable cost per unit	
	Correct summation of X	0.5
	Correct summation of Y	0.5
	Correct summation of XY	0.5
	Correct summation of X2	0.5
	Correct formula of variable cost per unit (b)	0.5
	Correct application of the formula	1.0
	Correct answer	0.5
ii	Fixed cost per month	
	Correct formula of fixed cost (a)	0.5
	Correct application of the formula	1.0
	Correct answer	0.5
iii	Total cost function	
	Correct application of the equation	1.0
iv	Total cost of producing 960 units	
	Correct application of the formula	0.5
	Correct answer	0.5
	Maximum marks awarded for question 12	**10.0**

Model Answers

a) Explain with examples the difference between probability and non-probability sampling

Probability sampling method is a sampling method in which there is a known chance of each member of the population appearing in the sample. For example, random, stratified random, systematic, multistage and cluster sampling. Non-probability sampling method is a sampling method in which the chance of each member of the population appearing in the sample is not known, for example, quota sampling.

b) Regression analysis

i) Calculation of variable cost per unit

	X	**Y**	**XY**	**X2**
	1 200	12 800	15 360 000	1 440 000
	900	11 200	10 080 000	810 000
	1 000	12 100	12 100 000	1 000 000
	800	10 800	8 640 000	640 000
	1 400	13 700	19 180 000	1 960 000
	700	8 200	5 740 000	490 000
Total	6 000	68 800	71 100 000	6 340 000

b =	$\frac{n\sum XY - \sum X \sum Y}{n\sum X2 - (\sum X)2}$
	$\frac{(6*71,100,000) - (6,000 * 68,800)}{(6*6,340,000) - 6,000\text{^}2}$
	$\frac{426,600,000 - 412,800,000}{38,040,000 - 36,000,000}$
	$\frac{13,800,000}{2,040,000}$
	6.76

ii) Calculation of fixed cost per month

a =	$\sum Y/n - b\sum X/n$
	(68,800/6) - 6.76*6,000/6)
	11,466.67 - 6,764.71
	4,701.96

iii) Formulation of total cost equation

y =	mx + c
y =	6.76X + 4,701.96

iv) Estimation of total cost of producing 960 units

y =	(6.76*960) + 4,701.96
	6,494.12 + 4,701.96
	11,196.08

SECTION C

QUESTION 13

Marking Guide

QN	Description	Marks
13, a	Calculation of cost per unit	
i)	Cost per unit: Traditional method	
	Award 0.5 marks for prime cost for each product X, Y & Z	1.5
	Award 0.5 marks for overhead cost per unit of X, Y & Z	1.5
	Award 0.5 marks for calculation of total hours per product X, Y & Z	1.5
	Award 0.5 marks for cost per unit answer for X, Y & Z	1.5
ii)	Cost per unit: Activity Based Costing	
	Award 0.5 marks for prime cost for each product X, Y & Z	1.5
	Award 0.5 marks for apportionment of costs for each cost pool (0.5*4)	2.0
	Award 1 mark for each correct total overhead per product (1*3)	3.0
	Award 0.5 marks for cost per unit answer for X, Y & Z	1.5
b	Difficulties with introducing cost reduction programs	
	Award 2 marks for every explanation clearly made (2*3)	6.0
	Total marks awarded for question 13	**20.0**

Model Answers

a) Calculation of cost per unit

i) Calculation of cost per unit of each product using the traditional method of apportioning overheads using labour hours

		X		Y		Z
Direct materials	(16*800)	12,800	(12*800)	9,600	(10*800)	8,000
Direct labour	(4*2,000)	8,000	(3*2,000)	6,000	(2*2,000)	4,000
Direct / Prime cost		20,800		15,600		12,000
Overheads	W1	11,862.07		8,896.55		5,931.03
Cost per unit		32,662.07		24,496.55		17,931.03

Workings

W1) Overhead cost per unit: Traditional method

Overheads are apportioned using labour hours

Total overhead costs= FRW 860,000,000

Total labour hours

Details	X	Y	Z	Total
Hours per unit	4	3	2	
Production units	25 000	40 000	35 000	
Total hours	100 000	120 000	70 000	290 000

Details		Total overheads	Units	Overhead cost per unit
X	100,000/290,000 * 860 M	296 551 724	25 000	11 862
Y	120,000 * 290,000 * 860 M	355 862 069	40 000	8 897
Z	70,000/290,000* 860 M	207 586 207	35 000	5 931

ii) Calculation of cost per unit of each product using Activity Based Costing (ABC)

Details		X		Y		Z
Direct materials	(16*800)	12,800	(12*800)	9,600	(10*800)	8,000
Direct labour	(4*2,000)	8,000	(3*2,000)	6,000	(2*2,000)	4,000
Direct / Prime cost		20,800		15,600		12,000
Overheads	W2	9,821.75		7,930.03		8,493.00
Cost per unit		30,621.75		23,530.03		20,493.00

W2) Overhead cost per unit: Activity Based Costing

Cost Pool	Cost Driver		Amount	X	Y	Z
Delivery Costs	No of deliveries pa	10%*860M	86,000,000	39,560,000	20,640,000	25,800,000
Procurement Costs	No of purchase orders pa	20%*860M	172,000,000	86,000,000	55,900,000	30,100,000
Machine Setup Costs	No of set ups pa	30%*860M	258,000,000	64,500,000	107,500,000	86,000,000
Machine Running Costs	Machine hours pa	40%*860M	344,000,000	55,483,870	133,161,290	155,354,838
Total overhead cost			860,000,000	245,543,870	317,201,290	297,254,838
Production units				25,000	40,000	35,000
Overhead cost per unit				9,821.75	7,930.03	8,493.00

Cost Drivers	X	Y	Z	Total
Machine hours per annum	25 000	60 000	70 000	155 000
Number of set ups per annum	15	25	20	60
Number of deliveries per year	92	48	60	200
Number of purchase orders per annum	40	26	14	80

b) Explain three difficulties that are faced with organizations when introducing cost reduction programs

1. There may be resistance from employees to the pressure to reduce costs. They may feel threatened by the change. The purpose and scope of the campaign should be fully explained to employees to reduce uncertainty and (hopefully) resistance.
2. The programme may be limited to a small area of the business with the result that costs are reduced in one cost centre, only to reappear as an extra cost in another cost centre.
3. Cost reduction campaigns are often introduced as a rushed, desperate measure instead of a carefully organised, well thought out exercise.

QUESTION 14

Marking Guide

QN	Description	Marks
14, a	Make or buy decisions (buying in)	
	Award 1 mark for calculation of contribution per unit for make & buy	2.0
	Award 1 mark for clear identification of the best option	1.0
	Award 1 marks for calculation of savings on fixed cost	1.0
	Award 2 marks for clear explanation	2.0
b	Calculation and interpretation of variances	
i	Sales price variance	
	Award 0.5 marks for correct formula	0.5
	Award 0.5 marks for application of the formula	0.5
	Award 0.5 marks for correct answer	0.5
	Award 0.5 marks for correct interpretation of Favourable or Adverse	0.5
ii	Labour rate variance	
	Award 0.5 marks for correct formula	0.5
	Award 0.5 marks for application of the formula	0.5
	Award 0.5 marks for correct answer	0.5
	Award 0.5 marks for correct interpretation of Favourable or Adverse	0.5
iii	Labour efficiency variance	
	Award 0.5 marks for correct formula	0.5
	Award 0.5 marks for application of the formula	0.5
	Award 0.5 marks for correct answer	0.5
	Award 0.5 marks for correct interpretation of Favourable or Adverse	0.5
iv	Material usage variance	
	Award 0.5 marks for correct formula	0.5
	Award 0.5 marks for application of the formula	0.5
	Award 0.5 marks for correct answer	0.5
	Award 0.5 marks for correct interpretation of Favourable or Adverse	0.5
v	Material price variance	
	Award 0.5 marks for correct formula	0.5
	Award 0.5 marks for application of the formula	0.5

	Award 0.5 marks for correct answer	0.5
	Award 0.5 marks for correct interpretation of Favourable or Adverse	0.5
c	Types of standards	
i	Basic and current standard	
	Award 1 mark for clear explanation of each (1*2)	2.0
ii	Ideal and attainable	
	Award 1 mark for clear explanation of each (1*2)	2.0
	Total marks awarded for question 14	**20.0**

Model Answers

a) Should Mulindi Ltd produce the product Able inhouse or sub- contract the production of the product?

The first step is to calculate contribution per unit of each of the two scenarios

	In-house Production	**Sub-contract**
	FRW per unit	FRW per unit
Revenue	110,000	110,000
Less: Variable cost	(40,000)	(50,000)
Contribution per unit	70,000	60,000

On this analysis, if production is sub-contracted, contribution falls by FRW 10,000 per unit, or FRW10,000× 2,000 = FRW 20,000,000 per month. However, we are also told that FRW 6,000,000 of monthly overhead will be saved, so in total there would be a decrease of (FRW 20,000,000 – FRW 6,000,000) = FRW 14,000,000 of gross profit per month, or (FRW 14,000,000/2,000) = FRW7,000 per unit.

If production and sales were estimated to continue at current levels, the decision would be to continue to make Able in-house unless the capacity can be used to produce items with higher profitability.

But production and sales are estimated to fall in the future, which would make it harder for Masindi to recover the fixed costs of in-house production. As a result, although sub-contracting involves additional variable costs, it may become more attractive at lower levels of output because of the saving in fixed costs.

We need to identify the level of sales/production at which we would be indifferent between making the product in-house and sub-contracting.

This will be where the additional variable costs incurred by buying in equal the savings in fixed costs.

Cost estimates do not change at different levels of production, so the difference between our variable costs and the cost of buying in (FRW 50,000 – FRW 40,000) = FRW10,000 per unit.

As the monthly savings on fixed costs by sub-contracting production are FRW 6,000,000, if we produced and sold FRW 6,000,000/FRW 10,000 = 600 able we would be indifferent as to whether to

make or buy. At more than 600 units, we would want to continue making able; at less than 600 we would want to subcontract.

b) Calculation and Interpretation of Variances

i) Sales Price Variance

SPV = (Budgeted price/unit - Actual price/unit)*Actual quantity			
Budgeted price/unit =		2,800	
Actual price/unit =	84,600,000/28,200 =	3,000	
Actual Quantity =		28,200	
SPV = (2,800 - 3,000)*28,200 =		5,640,000	Favourable

ii) Labour Rate Variance

LRV = (Budgeted rate/hr - Actual rate/hr)*Actual hours			
Budgeted rate/hr =		1,600	
Actual rate/hr =	25,200,000/14,000 =	1,800	
Actual hours =		14,000	
LRV = (1,600 - 1,800)*14,000 =		2,800,000	Adverse

iii) Labour Efficiency Variance

LEV = (Budgeted hrs for actual production - Actual hours)*Budgeted rate/hr			
Budgeted hrs for Act Prod =	0.5hrs*28,200 =	14,100	
Actual hours =		14,000	
Budgeted rate/hr =		1,600	
LEV = (14,100 - 14,000)*1,600 =		160,000	Favourable

iv) Material Usage Variance

MUV = (Budgeted qnty for actual prod - Actual quantity)*Budgeted price/litre			
Budgeted qnty for act prod =	4litres*28,200 =	112,800	
Actual quantity =		126,900	
Budgeted price/litre =		300	
MUV = (112,800 - 126,900)*300 =		4,230,000	Adverse

v) Material Price Variance

MPV = (Budgeted price/litre - Actual price/litre)Actual quantity			
Budgeted price/litre =		300	
Actual price/litre =	28,000,000/126,900 =	221	
Actual quantity =		126,900	
MPV = (300 - 220.65)*126,900 =		10,070,000	Favourable

c) Explain the difference between the following types of standards

i. Basic and Current Standard

Basic Standards: These are kept unaltered over a long period of time, and may be out of date. They are used to show changes in efficiency or performance over a long period of time. Basic standards are perhaps the least useful and least common type of standard in use.

Current Standards: These are based on current working conditions (current wastage, current inefficiencies). The disadvantage of current standards is that they do not attempt to improve on current levels of efficiency.

ii. Ideal and Attainable Standards

Ideal Standards: These are based on perfect operating conditions: no wastage, no spoilage, no inefficiencies, no idle time, no breakdowns. Variances from ideal standards are useful for pinpointing areas where a close examination may result in large savings in order to maximise efficiency and minimise waste. However, ideal standards are likely to have an unfavourable motivational impact because reported variances will always be adverse. Employees will often feel that the goals are unattainable and not work so hard.

Attainable Standards: These are based on the hope that a standard amount of work will be carried out efficiently, machines properly operated or materials properly used. Some allowance is made for wastage and inefficiencies. If well set, they provide a useful psychological incentive by giving employees a realistic but challenging target of efficiency. The consent and co-operation of employees involved in improving the standard are required.

QUESTION 15

Marking Guide

QN	Description	Marks
15, a	Classification of costs by function	
	Award 2 marks for each clear explanation (2*4)	8.0
b	Preparation of control statement	
i	Fixed budget	
	Correct sales	1
	Correct material cost	1
	Correct labour cost	1
	Correct variable production overhead	1
	Correct total variable cost	1
	Correct profit	1
ii	Flexible budget	
	Correct sales	1

	Correct material cost	1
	Correct labour cost	1
	Correct variable production overhead	1
	Correct total variable cost	1
	Correct profit	1
	Total marks awarded for question 15	**20.0**

Model Answers

a) Explain four ways of classification of costs by their function

- **Production costs** are the costs which are incurred by the sequence of operations beginning with the supply of raw materials, and ending with the completion of the product ready for warehousing as a finished goods item. Packaging costs are production costs where they relate to 'primary' packing (boxes, wrappers and so on).
- **Administration costs** are the costs of managing an organization; that is, planning and controlling its operations, but only insofar as such administration costs are not related to the production, sales, distribution or research and development functions.
- **Selling costs**, sometimes known as marketing costs, are the costs of creating demand for products and securing firm orders from customers.
- **Distribution costs** are the costs of the sequence of operations with the receipt of finished goods from the production department and making them ready for dispatch and ending with the reconditioning for reuse of empty containers.
- **Research costs** are the costs of searching for new or improved products, whereas development costs are the costs incurred between the decision to produce a new or improved product and the commencement of full manufacture of the product.
- **Financing costs** are costs incurred to finance the business, such as loan interest

b) Preparation of control statement

i) Fixed Budget

Details		**Fixed Budget(FRW)**
Sales	(10,200 * 16,000)	163,200,000
Direct materials	(4,200 * 16,000)	67,200,000
Direct labour	(2,400 * 16,000)	38,400,000
Variable production overheads	(1,000 * 16,000)	16,000,000
Total variable costs		121,600,000
Fixed production cost		8,200,000
Total cost		129,800,000
Profit		33,400,000

ii) Flexible budget

Details		Flexed Budget(FRW)
Sales	(163,200,000*16,800/16000)	171,360,000
Direct materials	(67,200,000*16,800/16,000)	70,560,000
Direct labour	(38,400,000*16,800/16,000)	40,320,000
Variable production overheads	(16,000,000*16,800/16,000)	16,800,000
Total variable costs		127,680,000
Fixed production cost	Constant	8,200,000
Total cost		135,880,000
Profit		35,480,000

END OF MARKING GUIDE AND MODEL ANSWERS