CERTIFIED PUBLIC ACCOUNTANT

FOUNDATION LEVEL TWO EXAMINATIONS

F2.1: MANAGEMENT ACCOUNTING

DATE: 30 NOVEMBER 2022

MARKING GUIDE AND MODEL ANSWERS

QUESTION ONE

Marking Guide

		Marks	
a	Production of AGUKA overhead absorption		
	Spare parts	1	
	Machine maintenance	1	
	Stores	1	
	Administration	1	
	Total overhead absorbed	1	
	Cost Per unit	1	
	Working for ABC overhead rate		
	Award 1 mark for each overhead absorption rate identified in working or in answer	4	
	Sub-total		**10**
B	Advantages of Activity Based Costing (ABC) method utilization in allocating costs to products. Award 2 marks for well identified and brief explanation of advantage of ABC.		10
Total			**20**

Model Answers

a) Production of AGUKA overhead absorption

The cost pool	**Workings**	**Frw**
Total spare parts used	400*40	16,000
Machine maintenance	200hours*30	6,000
Stores	10*500	5,000
Administration	20*50	1,000
Total overhead absorbed		**28,000**
Per unit	28,000/1,400	20

Workings

	Spare parts	**Maintenance**	**Stores**	**Administration**
Overhead costs	**20,000**	18,000	**10,000**	**2,000**
Cost driver	Total number of Spare parts	Machine maintenance hours	Number of requisitions	No of employees
Activity level	500	600	20	40

	Spare parts	Maintenance	Stores	Administration
ABC overhead rate	Frw 40 per spare parts	Frw 30 per machine maintenance hour	Frw 500 per requisition	Frw 50 per employee

b)

Activity based costing is a method used for allocating overheads costs by assigning them to activities. Once costs are assigned to activities, the costs can then be assigned to the costs objects that use those activities. An activity is defined as an event, task, or unit of work with a specified purpose, for example, operating machines, designing products, setting up machines etc. An activity can also be defined as a process or procedure that causes work.

Advantages of Activity-Based Costing (ABC)

a) Better basis for cost apportionment: ABC serves as a better tool to apportion overheads to products because the indirect costs are allocated based on the activity which generates or which led related costs
b) Overheads are traced to the product, the costs of product under ABC costing are more reliable for decision making
c) ABC brings attention to cost behaviour and helps in the reduction of costs. Decision can be taken to lower costs using costs drivers
d) ABC provides a useful means of getting financial and non-financial data.
e) Force's managers to consider the drivers of cost in their business.
f) The system is simple to interpret and understand is it is available, useable and specifically implement capable across all norms of business set-ups.
g) This procedure consumes unitary cost, or marginal cost as the calculation base in comparison to the conventional cost accounting techniques which employ total cost

QUESTION TWO

Marking Guide

		Marks	
a	Award 2 mark for any two-points provided justifying interrelationship between labor and material variance		**4**
b	**Variances**		
	i)Material usage variance Well obtained cost of materials used award 1 mark Well obtained unity of materials used award 1 mark Well computed standard materials award 1 Award 1 mark for material usage variance	**4**	
	ii)Labour rate variance.	2	

		Marks	
	iii)Labour efficiency variance.	2	
	iv)Variable overhead expenditure variance:	2	
	v)Variable overhead efficiency variance.	2	
	Award 0.5 mark for each comment outlining possible causes of variance obtained in (i) to (ii). (Maximum 1 mark for each variance)	4	
	Maximum		**16**
	Total marks for the question		**20**

Model Answers

a) i) Labour and material variances are interdepended as explained below.

In case the company is using cheapest and low-quality raw materials, they may get a favorable material price variance. However, the company may use more of those low-quality materials due to possible breakages, the possible waste and the possible spoilage during the manufacturing process. This could lead to the adverse material usage variance and may cause a greater time to be taken due to waste and rejection and therefore result in adverse labour efficiency.

Using the number of unskilled labour may cause a favorable labor rate variance whilst resulting in the job taking longer due to lack of high learning curve, lack of the competence and the experience. At the same time, lack of the skills and the knowledge may also result in the poor quality of work resulting in the waste of materials and there being more rejections because they don't know how to process low materials within due time and deliver expected quality. This could lead to the adverse material usage variance due to using many inputs.

b)

i)Material usage Variance = Standard Price (Standard Quantity – Actual Quantity)

Actual Quantity of Raw Material used is computed as follows:

	Cost (Frw)	**Unit cost**	**Units**
Opening Stock:	12,000	1.50 (i)	8,000
Purchases	42,000	3.50	12,000
	54,000		**20,000**
Less closing stock	(6,000)	2.50 (ii)	(2,400)
Raw material used	**48,000**		**17,600**

Standard Quantity = Quantity expected to be used for the actual output.

Quantity produced is computed as follows:

	Value (Frw)	Unit cost	Units
Opening Stock:	36,000	10	3,600
Cost of unit sold	100,000	10	10,000
	136,000		136,000
Less closing stock	(42,500)	10	(4,250)
Production	93,500		9,350

NB: Unit sold Quantity of goods sold $= \frac{\text{FRW } 200{,}000}{20} = 10{,}000$

Units Cost at Standard = Frw 6 + Frw 3 + Frw 1 = Frw 10

Materials required (budgeted) to produce 9,350 units: 2 kg per unit*9,350 = 18,700 kgs of the raw materials are required

(i) Material usage Variance = SP(SQ-AQ) = 3 (18,700 – 17,600)
= Frw 3,300 (Favorable)

Possible causes of this variance

- ✓ Good /Better quality of the labour
- ✓ High quality of the material
- ✓ Optimum utilization of the materials with little or no wastage

(ii) Labour rate variance = Actual Hours (Standard Rate – Actual Hours)
= 8,000 (4 – 3.75)
= Frw 2,000 (Favorable)

Possible causes of favorable labour rate variance

- ✓ Employment of the lower cost labour
- ✓ Overestimated labour rate
- ✓ Reducing prices of the labour in the market

(iii) Labour efficiency variance = Standard Rate (Standard Hours – Actual Hours)
= 4 ((9,350*0.75) – 8,000)
= Frw 3,950 (Adverse)

Adverse labour efficiency variance is caused by:

- ✓ Unexperienced labour
- ✓ Unmotivated labour force

(iv) Variable Overhead Expenditure Variance =Actual Variable overhead costs – (Actual hours*V.O.S. R)

Standard rate for variable overheads $= \frac{\text{FRW } 1}{0{,}75 \text{ hours}} = \text{FRW } 1.3334 \text{ per hour}$

= 12,000 – (8,000*1.3334) = Frw 1,3334 (Adverse)

Adverse variable overhead expenditure is caused by:

- ✓ Underestimated overheads absorption rate
- ✓ Lower output level than the expected
- ✓ Increase in the overheads during the period

(v) Variable Overheads Efficiency Variance

= V.O.A.R (Actual labour hours – Standard labour hours

= 1.3334 (8,000 – 9,350*0.75) = Frw 1,317 (Adverse)

Adverse variable overhead efficiency variance is caused by

- ✓ Many hours taken to produce the units
- ✓ Decreased efficiency in the output process

QUESTION THREE

Marking Guide

	Marks
a) Cash budget	
Opening cash balance: 0.5 mark for each figure for each month-exclude opening balance of January 2022	1.5
Cash sales: 0.5 mark for each figure for each month	2
Debtor's receipt: 0.5 mark for each figure for each month	2
Cash purchase: 0.5 mark for each figure for each month	2
Creditor's payment: 0.5 mark for each figure for each month	2
General and selling expense: 0.5 mark for each figure for each month	2
Interest payment: 0.5 mark for each figure for each month	2
Dividend payment:	0.5
Capital investment	0.5
Income tax	0.5
Subtotal	**15**
b) (i) production budget of UMUTI product **Award 1 mark for each correct figure shown including total**	**3**
(ii) Award 1 mark for material usage	**1**
Award 1 mark for conclusion reached showing that material usage budget will be the same as material purchase budget due to lack of stock of materials	**1**

Total	**20**

Model Answer

a) Cash Budget for Tumusime Ltd

	Jan-22	Feb-22	Mar-22	Apr-22
	FRW"000"	FRW"000"	FRW"000"	FRW"000"
Opening cash balance	40,000	102,500	159,000	207,500
Cash sales 40% of sales	72,000	60,000	80,000	100,000
Debtor's receipt 60% of previous sales	102,000	108,000	90,000	120,000
Total cash available	**214,000**	**270,500**	**329,000**	**427,500**
Budgeted payment				
Cash purchase	50,000	50,000	50,000	50,000
Creditor's payment	50,000	50,000	50,000	50,000
General and selling expense	1,500	1,500	1,500	1,500
Interest	10,000	10,000	10,000	10,000
Dividend			10,000	
Capital investment				20,000
Income tax	-			1,500
Total payment	**111,500**	**111,500**	**121,500**	**133,000**
Cash balance	**102,500**	**159,000**	**207,500**	**294,500**

Working number 1: Interest payment: 200,000,000 * 0.05 = 10,000

b)

(i) Total Production Budget will be:

	Liters
Estimated Sales	1,000
Add: Closing stock	200
Less: Opening stock	(300)
Production	900

(ii) Raw materials usage budget: = Production Units * Quantity per Unit. 900 liters*0.5= 450 liters

Materials Purchase Budget = Materials Usage Budget + Closing Inventory of Raw Materials – Opening Inventory of Raw Materials.

In this Question there are no opening or closing raw materials and therefore Materials Usage Budget is the same as Materials Purchase Budget

QUESTION FOUR

Marking Guide

a) i) Equivalent cost unit under FIFO

Item	**Marks**
Calculation of opening WIP in equivalent unit	3
Addition units in the equivalent units	1
Closing stock in equivalent unit	3
Well computed normal loss	1
Computed abnormal loss and shown in the equivalent unit	2
Well computed total costs mark for each	1.5
Well computed cost per unit	1.5
Sub-total (a)	**13**
Award 0.5 for each figure shown in the process accounting for each unit and related value	7
Sub-total (	
Total	20

Model Answer

a) EQUIVALENT COST UNIT UNDER FIFO

		Equivalent units	
PARTICULARS	**Physical units**	**Material**	**Conversion costs**
	Kgs		
Inputs			
Opening WIP (notes 3&4)	1,600	(1,600)	(800)
Addition inputs	10,000		
Total inputs	**11,600**		
Outputs			
Completed	10,220	10,220	10,220
Normal loss 5% of 10,000 inputs)	500	-	-
Closing WIP (Note 3)	780	780	468
Abnormal loss (note 1) (Balancing figure)	100	100	100
Total expected output (B)	**11,600**	**11,100**	**10,788**
Costs (Note 5)			
Opening stock		2,160	400
Current costs (given) (A)		**13,680**	**5,992**

PARTICULARS	Physical units	Equivalent units	
		Material	Conversion costs
	Kgs		
Total costs	**22,232**	**15,840**	**6,392**
Costs per equivalent unit (a)/(b)	1.92	1.43	0.6
	1.916552	**1.427027**	**0.59251**
Allocated	**Total**		
	FRW	FRW	FRW
Closing WIP (notes 3) @ 780@468 for conversion	1,495	1,113	277
Abnormal loss	191.655	142.703	59.251
Normal loss	958.276		
Opening WIP (given) @ 1,600 kg	3,066	2,283	948
Units started and completed i.e 10,220-1,600) *1.92,1.43 and 0.6	16,521	12,301	5,107
Total	22,232	15,840	6,392

b) Process costs account

Process Cost Account					
	Kgs	**FRW**		**Kgs**	**FRW**
Opening WIP	1,600	2,560	Completed	10,220	19,587
Inputs - Materials	10,000	13,680	Normal Loss	500	958.276
-Conversion costs		5,992	Abnormal Loss	100	191.655
			Closing WIP	780	1,495
	11,600	**22,232**		**11,600**	**22,232**

Workings:

1. Abnormal loss is the figure that balances the inputs to the production process with the outputs from the process.
2. Closing WIP (780 kgs): Materials=780 kgs completed product and for conversion costs 468 (60% *780 kgs) equivalent kgs of completed product.
3. Opening WIP (1,600 kgs): Within the opeinging WIP, Materials =1,600 kgs completed 100% and conversion costs 800 (50%*1,600 kgs) equivalent kgs of completed product. These opening WIP completed/equivalent units are subtracted from the outputs to give the current period equivalent units over which current period costs are to be spread. Closing WIP: Materials are 100% complete but conversion is 60% complete hence, 60%*780 = 468
4. In calculating the cost per equivalent unit FIFO only includes current period costs.

5. FIFO assumes that opening WIP is completed first and when assigning costs to output opening WIP is allocated costs to complete the units. In this case, opening WIP is complete as regards materials but requires to 50% *1,600 kgs =800 kgs of additional (equivalent unit) conversion costs.
6. To allocate costs to completed production FIFO subtracts opening WIP units from the total units completed to obtain the units that were started and completed during the period. For both materials and conversion costs this is 8,620kgs (10,220 –1,600).

QUESTION FIVE

Marking Guide

		Marks
A	Computation of the fixed production costs absorbed by CASSAVA FLOOR in the first quarter 2021 if absorption costing is used • **Award 0.5 mark for computed absorption rate** • **Award 0.5 mark for computed overhead absorption of the quarter** • **2 marks are allocated to the computation of the Over absorption of overhead**	3
B	Computation of the profit using absorption costing **Award 1 mark for each correct line shown excluding sub-totals and totals**	7
C	Computation of the profit using marginal costing • **Award 1 mark for each line shown in the marginal costing with the following exceptions** • **Don Not Award marks on Sub-totals and Totals**	7
D	Explanation about the difference and reconciliation Award 1 mark for well stated difference and two marks for reconciliation shown between marginal profit and absorption profit	3
	Total marks for the question	**20**

Model Answer

a) The fixed production costs absorbed by CASSAVA FLOOR in the first quarter (with absorption costing) are:

$$\frac{\text{Budgeted fxed products costs}}{\text{Budgeted output(Normal level of activity)}} = \frac{\text{Frw 1,600}}{\text{800 Kgs}} = \text{FRW 2 per kg}$$

Absorption rate = Frw 2 per kg produced.

During the quarter, the fixed production overhead absorbed was 220 kgs*FRW 2 = FRW440.

The under/over recovery of overheads for the quarter would be,

	FRW
Accrual fixed production overhead (1/4 of FRW1,600	400
Absorbed fixed production overhead	440
Over absorption of overhead	40

b) Profit for the quarter, absorption costing,

	FRW	**FRW**
Sales (160*FRW 20)		3,200
Production costs		
Variable (220*FRW 8)	1,760	
Fixed (absorbed overhead (220*FRW 2)	440	
Closing stock (220-160) *FRW 10: FWR 10 is FRW8 + FRW2	(600)	
		(1,600)
Gross profit		**1,600**
Adjustment for over-absorbed overhead		40
Adjusted gross profit		**1,640**
Less: Sales and distribution costs		
Variable (160*FRW 4)	640	
Fixed (¼ of FRW 2,400)	600	
		(1,240)
Net profit		**400**

c) Profit for the quarter, marginal costing

	Frw.	**Frw.**
Sales		3,200
Variable production costs	1,760	
Less closing stocks (60*FRW 8)	(480)	
Variable production cost of sales		(1,280)
Variable sales and distribution costs 160*FRW 4		(640)

Total contribution		**1,280**
Less:		
Fixed production costs incurred FRW 1,600/4	400	
Fixed sales and distribution costs FRW 2,400/4	600	
		(1,000)
Net profit		**280**

d) The difference in profit is subjected to the different valuations of closing stock. In absorption costing the 60 kgs of closing stock include absorbed fixed overheads of FRW120 (60*FRW 2), which are therefore costs carried over to the next quarter and not charged against the profit of the current quarter. In marginal costing, all fixed costs incurred in the period are charged against the profit.

	Frw.
Absorption costing profit	400
Fixed production costs carried forward in stock values	(120)
Marginal costing profit	280

QUESTION SIX

Marking Guide

Item	**Marks**
a)	
i) Award 1 Mark for clear definition break-even point and 1 mark for margin of safety	2
ii) Award 1 Mark for defined opportunity cost and 1 mark for sunk cost	2
iii) Award 2 Marks for candidate who has clearly explained CVP	2
Sub-total	**6**
b)	
Award 1Mark for well computed sales price per ticket	1
Award 1 for calculated variable cost	1
Award 1 Mark for calculated contribution per unit	1
Award 1 Marks for calculated break-even point	2
Award 1 Mark for candidate who has calculated sales value	1
Sub-total	**6**
c) Calculation of margin of safety in unity and in percentage	2
d) Award 1 Mark's candidate who calculated target sales	2
e) Award 1March each correct limitation of CVP outlined by candidate's maxim 5	4
Sub-Total	**8**
Total	**20**

Model Answer

Q6) a)

i) Break-even point is the point at which total cost and total revenue are equal, i.e. "even". There is no net loss or gain, and one has "broken even", though opportunity costs have been paid and capital has received the risk-adjusted, expected return

-Margin of safety is the area between the break-even point and the maximum sales. This is the area that the company can operate in and be certain of making a profit. It is usually classed as the amount of sales that a company can afford to lose before it gets into a loss making situation.

ii) -Opportunity cost is regarded as the benefit foregone by choosing one alternative in preference to the next best alternative.

-sunk cost is a cost that has already been incurred and that cannot be recovered. In management decision-making, sunk costs are treated as bygone and are not taken into consideration when deciding whether to continue an investment project.

iii)Cost Volume Profit analysis: This involves an understanding of the relationship between the level of activity, costs and revenues. CVP analysis is a technique which uses cost behavior to identify the level of activity at which we have no profit or loss (break-even point). It can also be used to predict the profits or losses to be earned at varying activity levels (using the assumed linearity of costs and revenues).

b) Break-even point =FC/Contribution per unit

Selling price per unit = 20,000 *1.25 = 25,000
Contribution = Selling price per unit – Variable cost per unit
Variable cost = 20,000 + 1,000 = FRW 21,000
Contribution = 25,000 - 21,000 = FRW 4,000 per ticket
BEP Then is FRW 5,000,000/4,000 = 1,250 tickets

Sales value at break-even: 1,250*25,000 = FRW 31,250,000

c) Margin of safety in unit = 1,450 - 1,250 = 200 tickets while margin of safety in percentage is 200/1,250*100 = 16%

d) **Target sales** = (FC + target profit)/contribution per unit

Target sales = (5,000,000 + 4,000,000)/4,000 = 2,250 tickets

e) Limitations of CVP analysis

- Once costs and revenues have been determined, it is usually assumed that they will have a linear relationship.
- Fixed costs will be constant over the relevant range
- Variable costs will vary in direct proportion to volume

- Selling price will remain unchanged
- The efficiency and productivity of the workforce remain constant.
- Break-even charts only hold good for a limited time-span
- The income line may not be straight. A straight line implies that the manufacturer can sell any volume he likes at the same price.

QUESTION SEVEN

Marking Guide

Item	**Marks**
a) Award 1 mark for each correct causes of labour turnover explained up to a maximum of 5	5
b) Award 0.5 Mark for each correct solution suggested up to maxim 6 point for 3 marks	3
c)	
Time allowed	1
Time saved	1
Basic pay	1
Bonus	1
Gross pay	1
d)	
Calculation of gross pay for each employee (0.5Mark*3)	1.5
Calculation of tax deduction (0.5Mark*3)	1.5
Calculation of pension deduction (0.5Mark*3)	1.5
Deduction of Salary advance (0.5Mark*2)	1
Calculation of net pay for each employee (0.5Mark*3)	1.5
Total	**20**

Model Answer

a) Some employees will leave their job and go to work for another company or organization. Sometimes the reasons are unavoidable.

- Illness or accidents: When staff suffered an accident, which results into inability to work, he/she will automatically leave the company leaving vacant position
- A family move away from the locality: Geographical mobility results into job turnover as the staff prefer to work near home to cater for their families
- Marriage, pregnancy or difficulties with child care provision: Some women prefer to leave work to take care of their new baby
- Retirement or death: When a staff attain retirement age, he/her job position became vacant

Other causes of labor turnover are to some extent controllable.

- Paying a lower wage rate than is available elsewhere. Like in this era where the price is changing frequently, the staff sear for high paid jobs and leave lower paid job
- Requiring employees to work in unsafe or highly stressful conditions.
- -Requiring employees to work uncongenial hours.
- Poor relationships between management and staff.
- Lack of opportunity for career enhancement.
- Requiring employees to work in inaccessible places (eg no public transport).
- Discharging employees for misconduct, bad timekeeping or unsuitability.

b) The prevention of high labour turnover

Labour turnover will be reduced by the following actions:

- Paying satisfactory wages
- Offering satisfactory hours and conditions of work
- Creating a good informal relationship between members of the workforce
- Offering good training schemes and a well-understood career or promotion ladder
- Improving the content of jobs to create job satisfaction
- Proper planning so as to avoid redundancies
- Investigating the cause of an apparently high labour turnover

c) Gross pay = basic pay + bonus

Time Allowed = 300 units * 3 minutes = 900 minutes/60 = 15 hours

Time Taken = 8 hours

Time Saved = 15 hours – 8 hours = 7 hours

Basic pay = 8*FRW 3,000 = FRW 24,000

Bonus = ½ (Time saved*Wage rate) = (7*FRW 3,000) *1/2 = FRW 10,500

Gross pay = FRW 24,000 + 10,500 = FRW 34,500 see basic pay calculated

d)

Name Of Employees	**Basic pay**	**Overtime pays**	**Gross pay**	**Tax 30%**	**RSSB 3%**	**Salary advance**	**Net pay**
	FRW	**FRW**	**FRW**	**FRW**	**FRW**	**FRW**	**FRW**
Gimmy Kalisa	270,000	0	270,000	81,000	8,100	-	180,900
Emmy Mugisha	270,000	45,000	315,000	94,500	9,450	30,000	181,050
Tukunde Elise	225,000	0	225,000	67,500	6,750	10,000	140,750

Note: Emmy worked 20 extra hours above 180 hours. Overtime pays for Emmy = 200 hours – 180 hours*1500*1.5=RWF 45,000

END OF MARKING GUIDE AND MODEL ANSWERS