CERTIFIED PUBLIC ACCOUNTANT
FOUNDATION LEVEL 2 EXAMINATIONS
F2.1: MANAGEMENT ACCOUNTING
DATE: WEDNESDAY 29, NOVEMBER 2023
MARKING GUIDE AND MODEL ANSWERS

QUESTION ONE

Marking Guide

Criteria	Marks
a) Eight steps followed in the budget making process	
Step 1: Determine the long-term objectives of the organization	1
Step 2: Formation of a budget committee	1
Step 3: Preparation of a budget manual	1
Step 4: Identification of the principal budget factor (Limiting factor)	1
Step 5: Preparation of an initial budget that factors in sluck	1
Step 6: Review of Initial Budget	1
Step 7: Preparation of a master budget	1
Step 8: Continuous review of the budget making process	1
	8

b)

i) Revised operating statement using a flexible budget approach

Sales	1
Cost of Sales:	
Materials	1
Labour	1
Variable Overheads	1
Total of cost of sales	1
Administration Costs:	
Fixed	0.5
Variable	1
Distribution Costs:	
Fixed	0.5
Variable	1
Total of administration and distribution costs	1
Net Profit	1
	10
ii) 2 marks awarded for a clear explanation	2
Total marks awarded for question one	**20**

Model Answers

a) Eight steps followed in the budget making process

Step 1: Determine the long-term objectives of the organization

Step 2: Formation of a budget committee

Step 3: Preparation of a budget manual

Step 4: Identification of the principal budget factor (Limiting factor)

Step 5: Preparation of an initial budget that factors in sluck

Step 6: Review of Initial Budget

Step 7: Preparation of a master budget

Step 8: Continuous review of the budget making process

b)

i)   Revised operating statement using a flexible budget approach

	Working	Flexed Budget	Actual Performance	Variance	
Production Units		2,150,000	2,150,000	-	
		FRW	FRW	FRW	
Sales	8,120,000*2,150,000/1,820,000	9,592,308	8,568,000	1,024,308	Adverse
Cost of Sales:					
Materials	1,320,000*2,150,000/1,820,000	1,559,341	1,152,000	407,341	Favourable
Labour	1,920,000*2,150,000/1,820,000	2,268,132	2,304,000	35,868	Adverse
Variable Overheads	256,000*2,150,000/1,820,000	302,418	288,000	14,418	Favourable
		4,129,890	3,744,000	385,890	Favourable
Administration Costs:					
Fixed		1,408,000	1,472,000	64,000	Adverse
Variable	432,000*2,150,000/1,820,000	510,330	392,000	118,330	Favourable
Distribution Costs:					
Fixed		1,200,000	1,150,000	50,000	Favourable
Variable	520,000*2,150,000/1,820,000	614,286	584,000	30,286	Favourable
		3,732,615	3,598,000	134,615	Favourable
Net Profit		**1,729,802**	**1,226,000**	**503,802**	**Adverse**

ii) Main reason why a flexed budget is normally preferred to a fixed budget

A flexed budget is normally preferred to a fixed budget because a flexed budget is adjusted to reflect actual activity.

The actual performance of the business will therefore be compared to actual activity level which is a comparison of like with like.

QUESTION TWO
Marking Guide

Criteria	Marks
a) Role of management accounting	
Any four points explained (2 marks for every point)	8
b)	
Fixed overhead expenditure variance	3
Fixed overhead volume variance	3
Fixed overhead volume capacity variance	3
Fixed overhead volume efficiency variance	3
	12
Total marks awarded for question two	**20**

Model Answers

a)   **Explanation of the role of management accounting**

 1) **Accounting for costs**

This may be seen as a record keeping or store keeping role. Information must be gathered and analysed in a manner which will help in planning, control and decision making

2) Planning and Budgeting

Involves the quantification of plans for the future operations of the enterprise. Such plans may be for the long or short term, for the enterprise as a whole or for the individual aspects of the enterprise.

3) Control of operations of the enterprise

Control may be achieved by the comparison of actual cost with that information included in the plan. Any differences between planned and actual events can be investigated and corrective action implemented.

4) Decision making

Cost accounting information assists in the making of decisions about the future operations of the enterprise. Such decision making may be assisted by the information from cost techniques and cost-volume – profit

5) Resource allocation decisions

For example, product pricing in determining whether to accept or reject jobs: This is based on cost and revenue implications of the relevant decisions

6) Performance evaluation

Cost accounting information is used to measure and evaluate actual performance so as to make a decision of the degree of optimality or efficiency of resource utilization.

7) Motivation of employees

Motivation involves influencing human behaviour so that the participants identify with the objectives of the organisation. To be motivating however, targets should be challenging but also achievable

8) Communication

To communicate means to make known, impart or transmit the information.
The management accountant aids the communication process by installing and maintaining an effective communication system such as the Management Accounting Information System

b) Calculation of variances

i) Fixed overhead expenditure variance

Budgeted fixed overhead expenditure - Actual fixed overhead expenditure

Budgeted fixed overhead expenditure	2,500,000	
Actual fixed overhead expenditure	2,584,000	
(2,500,000 - 2,584,000) =	84,000	Adverse

ii) Fixed overhead volume variance

(Budgeted production units - Actual production units)* Budgeted fixed cost per unit

Budgeted production units		5,000	
Actual production units		4,980	
Budgeted fixed cost per unit	2,500,000/5,000=	500	
(5,000 - 4,980)*500=		10,000	Adverse

iii) Fixed overhead volume capacity variance

(Total Budgeted hours - Total actual hours)*Budgeted fixed cost per hour

Total Budgeted hours	5000*2 =	10,000	
Total actual hours		10,500	
Budgeted fixed cost per hour		250	
(10,000 - 10,500)*250 =		125,000	Favourable

iv) Fixed overhead volume efficiency variance

(Budgeted hours for actual production - Total actual hours)*Budgeted fixed cost per hour

Budgeted hours for actual production	2*4980 =	9,960	
Total actual hours worked		10,500	
Budgeted fixed cost per hour	2,500,000/(5000*2) =	250	
(9,960 - 10,500)*250 =		135,000	Adverse

QUESTION THREE

Marking Guide

Criteria	Marks
a) Preparation of a stock ledger card	
Receipts of goods (1 mark for each of the 3 sections)	3
Issue of goods (1 mark for each of the 3 sections)	3
Balance (1 mark for each of the 3 sections)	3
Closing inventory	1
	10
b) Value of cost of sales	
Opening inventory	1
Purchases	2
Closing stock	1
Cost of sale final answer	2
c) Gross profit	
2 marks for the correct answer	2
d) Advantages of JIT (1 mark for each advantage)	2
Total marks awareded for question three	**20**

Model Answers

a) Preparation of stock ledger card (LIFO Method)

Date	Details	Receipts			Issues			Balance	
		Quantity	Price/ unit	Total Amount	Qua ntity	Pric e/uni t	Total Amount	Quant ity	Total Amount
1st February	Opening stock							1,300	520,000
6th February	Produced	1,700	410	697,000				3,000	1,217,00 0
11th February	Produced	2,500	420	1,050,00 0				5,500	2,267,00 0
16th February	Sales				2,50 0	420	1,050,00 0	3,000	1,217,00 0
					1,70 0	410	697,000	1,300	520,000
					300	400	120,000	1,000	400,000

Date	Description	Received Qty	Received Rate	Received Value	Issued Qty	Issued Rate	Issued Value	Balance Qty	Balance Value
21st February	Purchased	3,600	430	1,548,000				4,600	1,948,000
26th February	Purchased	3,100	450	1,395,000				7,700	3,343,000
28th February	Sold				3,100	450	1,395,000	4,600	1,948,000
					3,600	430	1,548,000	1,000	400,000
					500	400	200,000	500	200,000

b) Value of cost of sales

Cost of Sales = Opening stock + Purchases - Closing Stock
Opening Stock   520,000
Purchases:

    697,000
    1,050,000
    1,548,000
    1,395,000   4,690,000
Closing Stock   200,000
Cost of Sales = 520,000 + 4,690,000 - 200,000 =   5,010,000

c) Gross profit

Gross profit = Sales - Cost of sales
Sales:

    4500 * 500 =   2,250,000
    7200* 600 =   4,320,000
    6,570,000
Less: Cost of sales   5,010,000
Gross profit   1,560,000

d) Two advantages of Just In Time (JIT)

Rather than producing goods and supplying customers from stock, JIT processes focus on producing exactly the amount you need at exactly the time your customers need it.

Just-in-time advantages and disadvantages

The **main advantages** of JIT are that it can improve production efficiency and competitiveness.

It does this by:

1) Preventing over-production: The business only produces what is needed at a time

2) Minimising waiting times and transport costs: Production only done at the time it is needed

3) Saving resources by streamlining your production systems

4) Reducing the capital, you have tied up in stock

5) Dispensing with the need for inventory operations

QUESTION FOUR
Marking Guide

Criteria	Marks
a) Total equivalent units calculation	
1 mark for output units	1
2 marks for completed closing work in progress	2
1 mark for abnormal loss units	1
2 marks for total equivalent units	2
	6
b) Cost per unit statement	
Total amount calculation	2
Equivalent units	1
Cost per unit	1
	4
c) Value of output	2
d) Value of closing WIP	2
e) Value of abnormal loss	2
f) Process account	
(1 mark each for Dr amount, normal loss, abnormal loss amount and balancing of dr and cr side)	4
Total marks awarded for question four	**20**

Model Answer
a) Total equivalent unit calculation (AVCO Method)

	Output Units	CWIP Comp Units	Abnormal Loss	Total Equivalent Units
Material	8,200	2,000	300	10,500
Added materials	8,200	1,200	300	9,700
Conversion	8,200	800	300	9,300

b) Cost per unit statement

	Total Amount	Total Equivalent Units	Cost per Unit
Material	670,500,000	10,500	63,857.14
Added materials	306,000,000	9,700	31,546.39
Conversion	384,000,000	9,300	41,290.32

Note: Under AVCO, Total Amount = Total Input Amount + Opening WIP Amount

c) Value of output

	Units	Cost per Unit	Total Amount
Material	8,200	63,857.14	523,628,571.43
Added materials	8,200	31,546.39	258,680,412.37
Conversion	8,200	41,290.32	338,580,645.16
			1,120,889,628.96

d) Value of closing work in progress

	Units	Cost per Unit	Total Amount
Material	2,000	63,857.14	127,714,285.71
Added materials	1,200	31,546.39	37,855,670.10
Conversion	800	41,290.32	33,032,258.06
			198,602,213.88

e) Value of abnormal loss

	Units	Cost per Unit	Total Amount
Material	300	63,857.14	19,157,142.86
Added materials	300	31,546.39	9,463,917.53
Conversion	300	41,290.32	12,387,096.77
			41,008,157.16

f) Process account

Dr			Process 2 a/c				Cr
Particulars	Units	P/U	Total Amount	Particulars	Units	P/U	Total Amount
Opening WIP	2,400		189,000,000	Normal Loss	900	15,000	13,500,000
Materials (Input)	9,000		543,000,000	Output	8,200		1,120,889,629

Added Materials			288,000,000	Closing WIP	2,000		198,602,214
Conversion			354,000,000				
	-		-	Abnormal Loss	300		41,008,157
	11,400		1,374,000,000		11,400		1,374,000,000

QUESTION FIVE
Marking Guide

Criteria	Marks
a)	
i) Break even point	
Correct formula for BEP units & revenue (0.5 marks each)	1
Calculation of selling price per unit	1
Calculation of fixed cost per unit	1
Calculation of variable cost per unit	1
Calculation of BEP in units	1
Calculation of BEP in value	1
	6
ii) Profit expected if company operated at full capacity	
Calculation of full capacity units	1
Application of marginal costing formula	1
Calculation of profit	2
	4
b) Profitability of each of the three possible options:	
Current option (based on original)	2
Option one	2
Option two	2
Option three	2
Choice of the best option	2
	10
Total marks awarded for question five	**20**

Model Answers

a)

i. Break-even point in units and value

BEP (Units) = $\dfrac{\text{Fixed Cost}}{\text{SP/Unit - VC/Unit}}$

BEP (Value) =   BEP (Units) * SP/Unit

Selling price /unit = 24,750,000 / 4,500 = 5,500

Fixed Cost =			
Production Overhead:	Fixed	60% * 6,000,000 =	3,600,000
	Variable	40% * 6,000,000 =	2,400,000
Administration	Fixed		2,800,000
	Variable	5600000 - 2800000 =	2,800,000
Total Fixed Cost =	3,600,000 + 2,800,000 =	6,400,000	
Total Variable Cost = 4,800,000 + 7,200,000 + 2,400,000 + 2,800,000 =			17,200,000
Variable Cost per Unit = 17,200,000 / 4,500 =	3,822		

BEP (Units) =	$\dfrac{\text{Fixed Cost}}{\text{SP/Unit - VC/Unit}}$	$\dfrac{6,400,000}{5,500 `- 3,822}$	3,815	Units
BEP (Value) =	BEP (Units) * SP/Unit	3,815 * 5,500 =	20,980,132	FRW

ii. Profit expected if the company operates at full capacity

Full capacity = 4,500 units * 100 / 75 = 6,000 Units

Profit = (Selling Price / Unit - Variable Cost / Unit)*Sales Units - Fixed Cost=

Profit = (5,500 - 3,822) * 6,000 - 6,400,000 = FRW 3,668,000

b) Profitability of each of the three possible options

1) Original Plan Profit = (5,500 - 3,822)*4,500 - 6,400,000 =   FRW 1,151,000

2) Option One

Selling Price /Unit reduced by 5% = 5,500 * 95% =   5,225

Sales Units = 4500*(90/75) =   5,400

Profit = (5,225 - 3,822)*5,400 - 6,400,000 =   FRW 1,176,200

3) Option Two

Selling Price / Unit reduced by 15% = 5,500 * 85% =	4,675	
Fixed Cost increased by FRW 500,000 =	6,900,000	
Sales Units at Full Capacity =	6,000	
Profit = (4,675 - 3,822)*6,000 - 6,900,000 =		FRW (1,782,000)

4) Option Three

Selling Price / Unit =	5,500	
Variable Cost / Unit =	3,822	
Fixed Cost = 6,400,000 + 2,200,000 =	8,600,000	
Profit =. (5,500 - 3,822) * 6,000 - 8,600,000 =		FRW 1,468,000

Conclusion

Option Three is the best option because it gives the highest profit of FRW 1,468,000

QUESTION SIX
Marking Guide

Criteria	Marks
a) Steps involved in finding the optimal production plan	
1 mark awarded for each correct step	
Step 1: Identification of a limiting factor	1
Step 2: Calculation of contribution	1
Step 3: Calculation of contribution per unit of limiting factor	1
Step 4: Ranking of the products	1
Step 5: Allocation of the scarce resources	1
Step 6: Finding of the optimal plan, contribution & profit	1
	6
b) Finding the optimal plan, contribution & profiit	
Step 1: Identification of limiting factor	2
Step 2: Calculation of contribution	1.5
Step 3: Calculation of contribution per unit of limiting factor	1.5
Step 4: Ranking of the products	1
Step 5: Allocation of the scarce resources	3
Step 6: Finding of the optimal plan, contribution & profit	
Optimal plan	1
Contribution	2
Profit	2
	14
Total marks awarded to Question six	**20**

Model Answers

a) Explanation of steps involved in finding the optimal production plan

Step 1: Identify the limiting factor

      Limiting factor exists when the resources needed are more than the resources available

Step 2: Calculate contribution per unit

      Contribution per unit = Selling price per unit - Variable cost per unit

Step 3: Calculate contribution per unit of limiting factor

      Contribution per unit / Limiting factor per unit

Step 4: Rank the products

      Ranked first is the product with highest contribution per unit of limiting factor

Step 5: Allocate the scarce resource

      Allocation starting with the product ranked first

Step 6: Find the optimal production plan and total contribution

b) Finding the optimal production plan, total contribution and profit

Step 1: Identify the Limiting factor				
Timber Available			80,000	Square metres
Timber needed:				
(18,000 / 2,000) * 4,500 =	40,500			
(15,600 / 2,000) * 3,800 =	29,640			
(18,000 / 2,000) * 2,700 =	24,300	94,440		
Materials is a limiting factor because we need 94,440 yet only 80,000 is available				

Step 2: Calculate contribution per Unit

	Tables	Chairs	Shelves
Selling price per unit	65,000	55,000	72,000
Less: Variable cost per Unit	36,200	33,200	48,200
Contribution per unit	28,800	21,800	23,800

Step 3: Calculate contribution per unit of limiting factors

	Tables	Chairs	Shelves
Contribution per unit	28,800	21,800	23,800
Limiting factor per unit	9	8	9
Contribution per unit of limiting factor	3,200	2,795	2,644

Step 4: Rank the products

	1st	2nd	3rd

Step 5: Allocate the scarce resources			
Materials available			80,000
Allocation of Materials:			
1st	Tables	40,500	
	Balance = 80,000 - 40,500 =		39,500
2nd	Chairs	29,640	
	Balance = 39,500 - 29,640 =		9,860
3rd	Only 9,860 metres is remaining and the quantity of shelves to be made must consume only 9,860		
	Therefore, the quantity of shelves will be calculated as follows:		
	If 2,700 units will consume 24,300 metres		
	How many units will be produced with only 9,860 metres?		
	(2700*9,860)/24,300 =		1,095.56
			1,095
	Note: If you make 1096 units it will need extra metres which are not available		

Step 6: Find the optimal production plan, total contribution and profit

Profit =. Contribution - Fixed Cost

	Units Produced (Optimal)	Contribution /unit	Total Contribution
Tables	4,500	28,800	129,600,000
Chairs	3,800	21,800	82,840,000
Shelves	1,095	23,800	26,061,000
Total Contribution			238,501,000
Less: Fixed Cost (Working)			133,900,000
Profit			104,601,000

Working on Fixed Cost

	Fixed cost per unit	Units	Total fixed cost
Tables	15,400	4,500	69,300,000
Chairs	11,600	3,800	44,080,000
Shelves	7,600	2,700	20,520,000
Total Fixed Cost			133,900,000

Conclusion

The optimal production plan is to produce 4,500 tables, 3,800 chairs and 1,095 shelves to give a total contribution
of FRW 238,501,000 and total profit of FRW 104,601,000.

QUESTION SEVEN

Marking Guide

Criteria	Marks
a) Explanation of each of the terms	
1 mark awarded for each explanation	4
1 mark awarded for classifying it to either relevant or irrelevant	4
	8
b) Cost estimation using regression analysis	
i) Variable cost per unit	
3 marks awarded for all the columns being correct (1 per column)	3
2 marks awarded for finding the variable cost per unit	2
ii) Fixed cost	
2 marks for application of formula	2
1 mark for the correct answer	1
iii) Formulation of total cost equation	2
iv) Estimation of total cost at 9,000 units	2
	12
Total marks awarded for question seven	**20**

Model Answers

a) Explain stating clearly whether the characteristic relate to relevant or non relevant cost

i) Opportunity cost

Opportunity cost refers to what you have to give up to buy what you want in terms of other goods or services.

The next best alternative that has been sacrificed when making your choice.

It is therefore a relevant cost.

ii) Committed cost

A committed cost is an investment that a business entity has already made and cannot recover by any means,

as well as obligations already made that the business cannot get out of.

It is irrelevant cost.

iii) Common cost

The cost that will be incurred, regardless of the option chosen.

The cost that appears in all the options

It is an irrelevant cost

iv) Sunk cost

The historical cost that has already been incurred.

It is an irrelevant cost

	x	y	xy	x2
September, 2022	8,500	4,475,000	38,037,500,000	72,250,000
October, 2022	5,000	3,150,000	15,750,000,000	25,000,000
November, 2022	6,500	3,850,000	25,025,000,000	42,250,000
December, 2022	7,500	3,750,000	28,125,000,000	56,250,000
January, 2023	9,500	4,825,000	45,837,500,000	90,250,000
February, 2023	5,500	3,260,000	17,930,000,000	30,250,000
March, 2023	6,000	3,540,000	21,240,000,000	36,000,000
	48,500	26,850,000	191,945,000,000	352,250,000

i) Variable cost per Unit

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum x2 - (\sum x)2}$$

$$b = \frac{7 * (191,945,000,000) - (48,500 * 26,850,000)}{(7 * 352,250,000) - (48,500)^2}$$

$$b = \frac{41,390,000,000}{113,500,000}$$

$$b = 365$$

ii) Fixed cost

$$a = \frac{\sum y}{n} - b\frac{\sum x}{n}$$

$$a = \frac{26,850,000}{7} - \frac{(365*48,500)}{7}$$

$$a = 1,309,075$$

iii) Total cost equation

$$y = a + bx$$

y = 1,309,075 + 365x

iv) Total cost of constructing 9,000 houses
y =   1,309,075 + (365 * 9,000)
y =   4,591,101
Total cost of 9,000 houses is FRW 4,591,101

END OF MARKING GUIDE AND MODEL ANSWERS