CERTIFIED PUBLIC ACCOUNTANT

STAGE 3 EXAMINATIONS

S3.2: MANAGEMENT ACCOUNTING

DATE: THURSDAY 30, NOVEMBER 2023

MARKING GUIDE AND MODEL ANSWERS

SECTION A

Question	Answer Grid
1	B
2	A
3	C
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5	A
6	C
7	B
8	B
9	D
10	A

Marking Guide	**Marks**
Marks for each correct answer	2
Total marks for this section	**20**

Model Answers

QUESTION ONE

The correct answer is **B**
There is no legal requirement to produce management accounting
It can be presented in whichever format management prefers
Only financial accounting information is legally required in a specific

QUESTION TWO

The correct answer is **A**

Internal benchmarking: Comparison between different departments or functions within an organization.
Competitive benchmarking: Comparisons with competitors in the business sector through techniques e.g. reverse engineering
Functional benchmarking: Internal functions are compared with those of the best external practitioners of those functions, regardless of the industry they are in.
Strategic benchmarking: A type of competitive benchmarking aimed at strategic action and organizational change.

QUESTION THREE

The correct answer is **C**

Return on Investment (ROI) = (Controllable profits / Controllable investments) * 100
Residual income = Controllable profit – imputed interest
Controllable profits = Residual income + imputed interest = 60,000,000 + 30,000,000 = 90,000,000
ROI = (90,000,000 / 300,000,000) * 100 = 30%

A is wrong because it uses residual income divided by capital employed
B is wrong because it uses imputed interest divided by residual interest
D is wrong because it uses imputed interest divided by capital employed

QUESTION FOUR

The correct answer is **D**
Labour Efficiency Variance (LEV) = (Budgeted hours for actual production – Actual Hours) * Budgeted rate per hour.
LEV = ({4*2,195} – 9,200) * 1250 = FRW 525,000 Adverse.
Adverse because actual hours are more than budgeted hours
A is wrong because it calculates labour rate variance
C is wrong because of the favorable variance

QUESTION FIVE

The correct answer is **A**
Labour Rate Variance (LRV) = (Budgeted rate per hour – Actual rate hour) * Actual hours
LRV = (1,250 – {11,075,000/9,200}) * 9,200 = FRW 425,000 Favorable.
B, C & D are wrong because of the explanations given in question four

QUESTION SIX

The correct answer is **C**
Systematic sampling is a sampling method which works by selecting every n^{th} item after a random start.
Multistage sampling you draw a sample from a population using smaller and smaller groups at each stage.
Random sampling Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen.
Stratified sampling involves the division of a population into smaller subgroups known as strata.

QUESTION SEVEN

The correct answer is **B**

IRR = a% + NPAa/(NPAa – NPVb) * (b% - a%)

IRR = 5 + {100,000 / (100,000 – 50,000)} * (7 – 5) = 9%

A is wrong because in the denominator NPVa is added to NPVb

C is wrong because a% has been taken as 7% instead of 5% and denominator added instead of deducting

D is wrong because a% has been taken as 7% instead of 5%

QUESTION EIGHT

The correct answer is **B** which is learning and growth perspective.

A target of providing at least 40 hours of training every year to improve skills and productivity has a learning and growth perspective.

QUESTION NINE

The correct answer is **D**

Capacity Utilization Ratio = Total Actual Hours / Total Budgeted Hours

Production Volume Ratio = Budgeted Hours for Actual Production / Total Budgeted Hours

Capacity Utilization ratio = 120,000/100,000 * 100 = 120%

Production Volume ratio = (4*27,000)/100,000 * 100 = 108%

QUESTION 10

The correct answer is **A**

The correct answers are: Training in quality control and maintenance of inspection equipment.

Performance testing is an appraisal cost.

Costs of repairs under warranty are external failure costs.

SECTION B

QUESTION 11
Marking Guide

	Marks
a) Definition of terms as used in time series	
i) Trend (1 mark for example and 1mark for definition)	2
ii) Seasonal variation (1 mark for example and 1mark for definition)	2
	4
b)	
For both i and ii	
Total movings (0.5 marks for every correct point)	2
Moving average (Trend) (0.5 marks for every correct point)	2
Seasonal variation (0.5 marks for every correct point)	2
	6
Total marks awarded	**10**

Model Answer

a) Definition and examples

i) **Trend** is the long-term movement in forecast sales. Examples: The long-term movement in sales can be increasing, decreasing or even constant

ii) **Seasonal variations** are the short-term fluctuations in forecast data. Example: In a restaurant sale there can be peak hours for sales (morning, lunch hour and evening) and off-peak hours (between 9 am and 12noon and also after lunch)

b) Time series analysis table using additive model

Period	Actual Sales	Total Movings	Moving Average (Trend)	Seasonal Variation
2016	1,560			
2017	1,520	4,920	1,640	(120)
2018	1,840	5,160	1,720	120
2019	1,800	5,520	1,840	(40)
2020	1,880	5,440	1,813	67
2021	1,760	5,560	1853	(93)
2022	1,920			

QUESTION 12
Marking Guide

	Marks
a) Variable cost per unit (2 marks for correct table of XY and X2 data, 1 mark for formula application and 1 for answer)	4
b) Fixed cost (1 mark for formula application and 1 mark for answer)	2
c) Total cost equation (1 mark for formula application and 1 for correct equation)	2
d) Total cost	2
Total marks awarded	**10**

Model Answer

X	Y	XY	X2
750	1,800	1,350,000	562,500
625	1,900	1,187,500	390,625
640	2,000	1,280,000	409,600
825	2,100	1,732,500	680,625
1,175	2,800	3,290,000	1,380,625
1,200	2,440	2,928,000	1,440,000
1,500	2,950	4,425,000	2,250,000
1,400	2,800	3,920,000	1,960,000
8,115	**18,790**	**20,113,000**	**9,073,975**

i) Variable cost per Unit

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

$$b = \frac{8 * (20,113,000) - (8,115 * 18,790)}{(8 * 9,073,975) - (8,115)^2}$$

$$b = \frac{8,423,150}{6,738,575}$$

$$b = 1.25$$

ii) Fixed cost

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

$$a = \frac{(18,790/8)}{8} - \frac{(1.25*8,115)}{8}$$

a = 1,081

c) Total cost equation

y = a + bx

y = 1,081 + 1.25x

d) Total cost when 1,250 books are produced

y = 1,081 + (1.25 * 1,250)

y = 2,643

Total cost of 1,250 units is FRW 2,643,500 (when FRW 000 is included)

SECTION C

QUESTION 13
Marking Guide

	Marks
a)	
(1 mark awarded for each ratio for each year)	
i) ROCE	2
ii) Asset turnover	2
iii) Operating profit margin	2
iv) Current ratio	2
v) Receivables period	2
	10
b)	
(1 mark awarded for each ratio analyzed)	
ROCE	1
Operating profit margin	1
Asset turnover	1
Current ratio	1
	4
c)	
(1 mark awarded for each point outlined and explanation also 1 mark each)	6
Total marks awarded	**20**

Model Answer

Ratio	Formula	2021		2022	
1) Return on capital employed	Profit before interest and tax (PBIT) * 100	18.00	17.05%	16.50	13.39 %
	Capital Employed (Equity + Noncurrent liabilities)	105.60		123.20	
2) Operating profit margin	PBIT * 100	18.00	10.00%	16.50	8.92%
	Sales	180.00		185.00	
3) Asset turnover	Sales	180.00	1.7 Times	185.00	1.5 Times
	CE	105.60		123.20	
4) Current ratio	Current assets	13.60	1.62	11.90	1.29
	Current liabilities	8.40	1.62:1	9.20	1.29:1
5) Receivables period	Receivables * 365	2.10	4 days	2.40	5 days
	Sales	180.00		185.00	

b) Evaluation of financial performance of the entity in terms of ROCE, Operating profit margin, asset turnover and current ratio

Return on capital employed has fallen from 2021 to 2022 caused by a decrease in operating profit and an increase in capital employed. The fall in **operating profit** may have been caused by an increase in costs, whilst the new investment program will have caused an increase in capital employed.

Asset turnover has fallen. Sales have only increased by 2.8% between 2021 and 2022 so the new investment program may not yet have had a significant effect upon sales.

In the short term, the investment program has increased assets and costs but has not yet influenced sales.

The **current ratio** has deteriorated so the firm's ability to meet its short-term obligations from its short-term resources has been reduced. The expenditure on the investment program may have decreased the cash balance between 2021 and 2022, causing the deterioration in liquidity.

c) Three (3) non-financial indicators that could be useful in measuring the performance of passengers' transport service and explanation why indicators are important

	Non-financial indictor	**Importance**
1	% of buses arriving in time	Punctuality is important to passengers
2	% of buses cancelled	Reliability is important to passengers
3	Number of accidents involving the buses	Safety of passengers is vital for any means of transport chosen
4	% utilization of staff	Underused staff do not help grow profits
5	% of new customers	New customers are vital for sustained growth
6	Employee morale	Happy employees are vital for the success of the business

QUESTION 14
Marking Guide

	Marks
a) Cost per unit using traditional method:	
Direct materials (0.5 marks for x and 0.5 for y)	1
Direct labour (0.5 marks for x and 0.5 for y)	1
Prime cost (0.5 for x and 0.5 for y)	1
Overhead cost per unit of X	1
Overhead cost per unit of Y	1
Total cost per unit	1
	4
b) Cost per unit under ABC:	
Apportioning of overhead cost for all cost pools	1
Apportionment of machine set up cost (0.5 for each product)	1
Apportionment of order handling costs (0.5 for each product)	1
Apportionment of material handling costs (0.5 for each ,,)	1
Apportionment of quality control (0.5 for each product)	1
Calculating of total overhead cost of each product	2
Calculation of overhead cost per unit	1
Calculation of total cost per unit	2
	10
c) Effect of move to ABC:	
Clear explanation of pricing	3
Clear explanation of profitability	3
	6
Total marks awarded	**20**

Model Answer

a) Cost per unit using traditional method

	X	Y
Direct material cost / unit	8,000	12,000
Direct labour cost / unit	12,000	8,000
Prime cost per unit	20,000	20,000
Overhead cost per unit (W1)	6,231	4,154
Total cost per unit	26,231	24,154

Workings

W1) Overhead cost per unit	X	Y	Total	
Total labour hours =	(3hrs*6,000) +	(2hrs*4,000) =	26,000	Hours
Total labour hours =	18,000	8,000	26,000	Hours

Total overhead cost =			54,000,000	FRW
Overhead cost	(18/26) * 54 M	(8/26) * 54 M		
	37,384,615	16,615,385		
Production units	6,000	4,000		
Overhead cost per unit	6,231	4,154		

b) Cost per unit using activity based costing

	X	Y
Direct material cost / unit	8,000	12,000
Direct labour cost / unit	12,000	8,000
Prime cost per unit	20,000	20,000
Overhead cost per unit (W2)	3,870	7,695
Total cost per unit	23,870	27,695

Workings

W2) Overhead cost per units:

ABC Method

Cost pool	Percentage	Total cost	Overhead Absorption Rate (OAR)	X	y
Machine set up	40%	21,600,000	21,600,000/80=270,000	8,100,000	13,500,000
Order handling	25%	13,500,000	13,500,000/400=33,750	8,100,000	5,400,000
Material handling	20%	10,800,000	10,800,000/1,240=8,710	4,529,032	6,270,968
Quality control	15%	8,100,000	8,100,000/130=62,308	2,492,308	5,607,692
Total Overhead Cost	100%	54,000,000		23,221,340	30,778,660
Production units				6,000	4,000
Overhead cost per unit				3,870	7,695

c) Effects of shift to ABC on Profitability and Pricing

Summary of cost per unit	X	Y
Cost per unit under traditional	26,231	24,154
Cost per unit under ABC	23,870	27,695

Effect on Profitability

A shift from traditional method to ABC will result to an increase in profitability of product x because there is a decrease in cost per unit from FRW 26,231 to FRW 23,870 and a decrease

in profitability of product Y because there is an increase in cost from FRW 24,154 to FRW 27,695.

Effect on Pricing

A shift to ABC will result to a decrease in price of product X since there is a decrease in cost per unit while an increase in price of product Y since there is an increase in cost per unit of Y.

QUESTION 15

Marking Guide

	Marks
a) Definition of terms:	
i) Flexed budget	2
ii) Rolling budget	2
iii) Incremental budget	2
iv) Zero based budget	2
v) Principal budget factor	2
	10
b) Preparation of a flexible budget	
Revenue	1
Direct materials	1
Direct labour	1
Variable production overheads	1
Total variable cost	1
Contribution	1
Fixed cost	1
Profit	1
Variances calculation	1
Variance effect (Favourable or Adverse)	1
	10
Total marks awarded	**20**

Model Answer

a) Definition of terms as used in budgeting

i. Flexed budget

A budget that is adjusted to reflect actual activity level. Also known as flexible budget. New budget is prepared based on actual production or sales units.

ii. Rolling budget

A budget that is continuously updated to reflect a new activity level. At any given point in time the budget must be for a whole period since adjusts are continuously made. Also known as continuous budget.

iii. Incremental budget

A budget that is prepared by adjusting the previous periods budget. Last period budgets are used to prepare the next periods budget but adjustments are made depending on forecast circumstances.

iv. Zero based budget

A budget that is prepared from scratch. It does not rely on the previous periods budget. Every item included in the budget must be justified.

v. Principal budget factor

A limiting factor in the context of budgeting. The scarce resource in budgeting. A constraint in the budgeting making process

b) Operating statement using flexible budget approach

Particulars	**Working**	**Flexible Budget**	**Actual Results**	**Variance**	
		FRW	FRW	FRW	
Revenue	(180,000,000 * 5,400) / 6,000 =	162,000,000	167,400,000	5,400,000	Favourable
Direct materials	(48,000,000 * 5,400) / 6,000 =	43,200,000	49,140,000	5,940,000	Adverse
Direct labour	(33,000,000 * 5,400) / 6,000 =	29,700,000	27,000,000	2,700,000	Favourable
Variable production overheads	(21,000,000 * 5,400) / 6,000 =	18,900,000	18,900,000	-	
Total variable costs		91,800,000	95,040,000	3,240,000	Adverse
Contribution		70,200,000	72,360,000	2,160,000	Favourable
Fixed cost	Constant	36,000,000	40,000,000	4,000,000	Adverse
Profit		34,200,000	32,360,000	1,840,000	Adverse

END OF MARKING GUIDE AND MODEL ANSWERS