CERTIFIED ACCOUNTING TECHNICIAN

STAGE 3 EXAMINATIONS

S3.2: MANAGEMENT ACCOUNTING

DATE: THURSDAY 28, NOVEMBER 2024

MARKING GUIDE AND MODEL ANSWERS

SECTION A

MARKING GUIDE

QUESTION NUMBER	CORRECT CHOICE	MARKS
1	D	**2**
2	D	**2**
3	A	**2**
4	A	**2**
5	B	**2**
6	D	**2**
7	B	**2**
8	A	**2**
9	C	**2**
10	B	**2**

Award 2 marks for each correct answer
Total: 20 Marks

Model Answer

QUESTION ONE

Correct Answer is Option D

Management accounting and financial accounting differs because of:

(i) Management accounting information are needed for internal use only whereas financial accounting information are needed by external stakeholders
(ii) Financial accounting information are needed to assess the performance and state of affairs of an entity but management accounting information are needed mainly for planning, control and decision-making purpose

A is wrong because it excludes ii

B is wrong because it includes iii

C is wrong because it includes iii which is a wrong statement

QUESTION TWO

Correct Answer is Option D

All options given below are forms of benchmarking

A Comparison between different departments or functions within an organization (Internal benchmarking)
B Internal functions are compared with those of the best external practitioners of those functions, regardless of the industry they are in (Functional benchmarking).
C Comparisons with competitors in the business sector through techniques e.g. reverse engineering (Competitive benchmarking)

QUESTION THREE

Correct Answer is Option A

bricks	20,000
Hours	500
Productivity per Hour**(20,000/500)**	**40**

Option B is wrong it has used the number of workers 20,000/20 =1000

Option C is wrong it has used the number of workers and hours 500/20=25

Option D is an incorrect option as from the options given there was a right answer

QUESTION FOUR

Correct Option is A
Total Labour hours is (8,000 * 80,000)/64,000 =10,000 hours

Option B is wrong because it applied the standard labour hours on the actual 0.2*64000 = 12,800 hours
Option C is also Wrong because it applied the standard labour hours on the actual 80,000*0.2 = 16000 hours
Option D this is an incorrect option because from the options given there was a correct answer

QUESTION FIVE

Correct Option is B

Standard cost= 2000*8000= FRW 16,000,000

Actual cost =1500*8000= FRW 12,000,000

Labour rate variance is FRW 4,000,000 Favourable.

Option A is wrong because the variance calculated is labour efficiency variance 1,500(0.2*64,000-8,000) =7,200,000 F

Option C is wrong the variance is favourable because the actual labour cost has reduced compared to the standard cost

Option D is an incorrect option because it is labour cost variance 4,000,000F+7,200,000F=11,200,000 F

QUESTION SIX

Correct Option is D

Quota sampling is a non-probability sampling method.

A, B, and C are wrong because they are probability sampling methods which include:

- ✓ Random
- ✓ Systematic
- ✓ Cluster
- ✓ Stratified random
- ✓ Multistage

QUESTION SEVEN

Correct answer is B

	Highest	lowest	Difference
Cost	2,500,000	1,800,000	700,000
Units	10,000	7000	3,000
	Variable cost per unit		**233**

TC = FC+VC/UNIT

TC=2,500,000

VC= 10,000 *233=2,330,000

Then FC: 2,500,000 -2,330,000 = FRW 170,000

The cost function is TC = FRW 170,000 + 233X

Option A is wrong TC =RWF 170,000 -233X, the candidate deducted variable cost from fixed cost to get total cost

Option C is wrong TC = RWF 2,500,000+233X here the candidate has used total cost of the highest level as fixed cost

Option D is wrong TC=RWF 1,800,000+233X here the candidate has used total cost of the lowest level as fixed cost

QUESTION EIGHT

Correct answer is Option A
From the options given number of goods returned is the only non-financial performance indicator
Option B is wrong because Unit cost of returned goods is a financial performance indicator
Option C is wrong because Cost of reworking defective goods as a percentage of total production cost is a financial performance indicator
Option D this is an incorrect option as from the options given there was a correct answer

QUESTION NINE

Correct Option is C
Control ratios are composed of Efficiency, capacity and activity ratios
Other Options are wrong because:
A has included solvency ratios which are not control ratios
B has included liquidity ratios which are not control ratios
D this is an incorrect option because liquidity and solvency ratios are not control ratios

QUESTION 10

Correct answer is **B**
TQM is defined as Continuous improvement in quality, productivity and effectiveness
Other Options are wrong because:
Option A is wrong because the information refers to budgeting and planning
Option C is wrong the information relates to bench marking
Option D this is an incorrect option as from the options given there was a right answer

SECTION B

QUESTION 11

CRITERIA	Marks
Award 0.5 mark for initial investment	0.5
Award 0.5 Mark for each cash inflow	2.5
Award 0.5 Mark for each total cash flow	2.5
Award 0.5 mark for each Present value	2.5
Award 1 Mark for NPV and 1 mark for the recommendation	2
Total marks	**10**

Model Answer

a) The feasibility of FR Kennedy Junior investment is assessed using Net Present Value (NPV) as per below:

Computation of net present value.

Year	1	2	3	4	Total
Initial investment	**(40,000,000)**				**(40,000,000)**
Annual maintenance fees	(500,900)	(500,900)	(500,900)	(500,900)	
Cash inflow	9,800,500	10,094,515	10,397,350	10,709,271	
Total	**9,299,600**	**9,593,615**	**9,896,450**	**10,208,371**	**38,998,036**
Discount Factor	0.917	0.842	0.772	0.708	
PV	**8,527,733**	**8,077,824**	**7,640,060**	**7,227,526**	**31,473,143**
NPV					**(8,526,857)**

Recommendation:
The NPV is negative, therefore the investment should not be undertaken.

QUESTION 12

Marking Guide

	Marks
a) Calculation of variable cost per patient and Fixed cost	
Award 1 mark for correct $\sum x, \sum y, \sum xy, \sum x^2$ (1 mark *4)	4
Application of the formula for variable cost	1
Correct answer for variable cost	1
Calculation of fixed cost	
Correct formula of fixed cost using least square method	1
Application of the formula and correct answer	1
b) Estimated regression equation	1
c) Estimation of total cost	-
Use of total cost equation	0.5
Correct answer	0.5
Maximum of 2 marks awarded for part c	**1**
Total	**10**

Model Answer

a) variable cost per patient

X	Y	XY	X^2
360	29,400	10,584,000	129,600
380	30,400	11,552,000	144,400
340	27,400	9,316,000	115,600
320	28,000	8,960,000	102,400
300	28,600	8,580,000	90,000
260	26,200	6,812,000	67,600
220	25,600	5,632,000	48,400
2,180	195,600	61,436,000	698,000

b =

$\frac{n\sum xy - \sum x\sum y}{n\sum x2 - (\sum x)2}$

$\frac{(7*61,436,000) - (2,180 * 195,600)}{(7*698,000) - (2,180)^2}$

$\frac{3,644,000}{133,600}$

27.3 Patients

total fixed cost incurred by CYURU Hospital

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

$\frac{195,600 - 27.3*2180}{7}$

$\frac{136,140}{7} = 19,448.5$

b) Estimated regression equation=19,488.5+27.3x

c) total admission cost incurred by CYURU Hospital in September, 2023 if 350 patients are admitted

Admission cost equation TC = Total admission cost of 350 patients	27.3x + 19,488.5
TC =	(27.3*350) + 19,488.5
TC =	FRW 28,995

SECTION C

QUESTION 13

Marking Guide

		Marks
a)	**Computation of ratios**	
	Right formula for each ratio (1 mark *5)	5
	Correct application and answer for 2023 for each ratio (1 mark*5)	5
	Correct application and answer for 2022 for each ratio (1 mark*5)	5
	Maximum marks awarded for part a	15
b)	**Limitations of ratios**	
	Listing of each limitation (0.5 marks * 5)	2.5
	Explanation of each point listed (0.5 marks * 5)	2.5
	Maximum marks awarded for part b	5
	Total	**20**

Model Answer

a) Ratios for 2023 and 2022

	Ratio	**Formula**	**2023**	**2022**
i	Gross Profit Margin	Gross Profit * 100 Sales	108,000 * 100 235,000 =46.0%	72,000 * 100 167,000 =43.1%
ii	Acid Test Ratio	Current Assets - Inventories Current Liabilities	193,000 - 21,400 24,800 = 6.9 6.9 : 1	158,000 - 8,000 34,000 =4.4 4.4 : 1
iii	Equity Gearing Ratio	Non-Current Liabilities *100 Equity	70,000 * 100 193,500 =36.2%	50,000 * 100 126,500 =39.5%

	Ratio	Formula	2023	2022
iv	Receivables Period	Receivables *365 Credit Sales	41,600 *365 235,000 64 days	32,000 * 365 167,000 70 days
v	Interest Cover Ratio	Profit Before Interest & Tax Interest Payable	26,000 - 9,000 9,000 2 Times	19,000 - 5,000 5,000 3 Times

b) Five limitations of ratios in performance measurement

1) **Comparing like with like:** If ratios are to be compared then they must be calculated in the same way, using comparable figures. When comparing ratios over time in an organisation, if there has been a change in accounting policies over the period then this may have an impact on the ratios. When comparing ratios for two different companies it is likely that the companies will have different accounting policies and adjustments should be made to bring their accounting policies in line before calculating and comparing the ratios.
2) **Inflation:** If ratios are being compared over time on the basis of historical cost accounting figures then adjustments must be made using an appropriate index in order to restate all the figures in terms of one particular price level.
3) **Representative figures:** In many cases we use year-end figures from a statement of financial position in order to calculate ratios. These year-end figures may not be representative of the average value for the year.
4) **Accounting adjustments:** When year-end figures are used to calculate ratios, just one significant accounting adjustment or transaction before the year end can alter the position shown by the statement of financial position and the resulting ratios. For example if a large cash payment is made to a major supplier just before the year end, this would significantly reduce the payables' payment period.
5) **Age of non-current assets**: If we are comparing one company to another using ratio analysis, the figures may not be entirely comparable unless the non-current assets are of similar age (and their depreciation policies are similar).
6) **Key performance indicators and the behaviour of managers:** The way in which managers are assessed on their performance can have a major influence on the decisions that they make. If key performance indicators such as ROCE are used to assess a manager then there is the possibility of a lack of goal congruence in decision making. For example a new piece of machinery may benefit the business as a whole as it will reduce costs and improve quality but the manager in charge of that department may be reluctant to invest if it will reduce the department's ROCE on which he/she is assessed.

7) **Comparing over time:** If businesses use ratios to compare performance over time and the ratios are improving, this can lead to complacency. Competitors may be improving by a greater margin so caution should be taken when only comparing against yourself.

QUESTION 14

Marking Guide

		Marks
a)	**Calculation of cost per unit under absorption costing**	
	Calculation of prime cost per unit for all products	1
	Adding of overhead cost per unit to prime costs	1
	Correct computation of total cost per unit	1
	Calculation of total labour hours for all products (W1)	1
	Summation of total overhead cost (W1)	1
	Apportionment of overhead costs to all products	1
	Maximum marks awarded for part a	**6**
b)	**Calculation of cost per unit using activity based costing**	
	Calculation of prime cost per unit for all products	1
	Adding of overhead cost per unit to prime costs	1
	Correct computation of total cost per unit	1
	Correct allocation of cost drivers to each cost pool (W2 colunm 2)	1
	Apportionment of stores to all products	1
	Apportionment of inspection to all products	1
	Apportionment of set up costs to all products	1
	Apportionment of engineering support costs to all products	1
	Apportionment of machine related costs to all products	1
	Correct calculation of overhead cost per unit in W2	1
	Maximum marks awarded for part b	**10**
c)	**Explanation of impact on profitability of move from AC to ABC**	
	Explanation of increase in cost for product A, C & D	1.5
	Explanation of decrease in cost for product B	0.5
	Explanation of decrease in profitability for product A, C & D	1.5
	Explanation of increase in profitability of product B	0.5
	Maximum marks awarded for part c	**4**
	Total	**20**

Model Answer

a) cost per unit using absorption costing method of absorbing overheads with labour hours as the basis of apportionment

Cost per unit using absorption costing				
	A	**B**	**C**	**D**
	FRW	**FRW**	**FRW**	**FRW**
Direct material cost per unit	4,000	2,800	3,200	3,600
Direct labour cost per unit	8,000	2,000	6,000	2,500
Prime cost per unit	12,000	4,800	9,200	6,100
Add: Overheads per unit W1	1,402	1,052	818	982
Total cost per unit	13,402	5,852	10,018	7,082

Workings 1	
Overhead cost per unit under absorption costing using labour hours	
Total overhead cost	4,250,000 + 2,450,600 + 3,200,000 + 2,000,000 + 1,860,000 =13,760,000
Total labour hours	(6*2,000) +(4.5*7,500) + (3.5*2,250) + (4.2*1,250)
Total labour hours	58,875

	A	**B**	**C**	**D**
Apportionment of Overhead cost	12,000*13,760,000 / 58,875	33,750*13,760,000 / 58,875	7,875*13,760,000 / 58,875	5,250*13,760,000 / 58,875
Total overheads	2,804,708	7,888,242	1,840,590	1,227,060
Units	2,000	7,500	2,250	1,250
Overhead cost per unit	1,402	1,052	818	982

b) cost per unit using activity-based costing (ABC)

Cost per unit using activity-based costing				
	A	**B**	**C**	**D**
	FRW	**FRW**	**FRW**	**FRW**
Direct material cost per unit	4,000	2,800	3,200	3,600
Direct labour cost per unit	8,000	2,000	6,000	2,500
Prime cost per unit	12,000	4,800	9,200	6,100
Add: Overheads per unit W2	1,616	509	1,799	2,133
Total cost per unit	13,616	5,309	10,999	8,233

Workings 2

Overhead cost per unit under activity-based costing						
Cost Pool	**Cost Driver**	**Total Cost**	**A**	**B**	**C**	**D**
		FRW	**FRW**	**FRW**	**FRW**	**FRW**
Stores	Number of requisitions	4,250,000	944,444	1,416,667	1,101,852	787,037
Inspection	Number of inspections	2,450,600	612,650	306,325	918,975	612,650
Set up costs	Number of set ups	3,200,000	609,524	914,286	1,219,048	457,143
Engineering support cost	Engineering hours	2,000,000	600,000	480,000	420,000	500,000
Machine related costs	Machine hours	1,860,000	465,000	697,500	387,500	310,000
Total overheads		13,760,600	3,231,618	3,814,777	4,047,374	2,666,830

Overhead cost per unit under activity-based costing						
Cost Pool	**Cost Driver**	**Total Cost**	**A**	**B**	**C**	**D**
		FRW	**FRW**	**FRW**	**FRW**	**FRW**
Units			2,000	7,500	2,250	1,250
Overhead cost per unit			1,616	509	1,799	2,133

c) the impact on profitability of a move from absorption costing to activity-based costing on the four products

	A	**B**	**C**	**D**
	FRW	**FRW**	**FRW**	**FRW**
Cost per unit AC	13,402.35	5,851.77	10,018.04	7,081.65
Cost per unit ABC	13,615.81	5,308.64	10,998.83	8,233.46
From AC to ABC	Increase in cost	Decrease in cost	Increase in cost	Increase in cost
Profitability	Decrease	Increase	Decrease	Decrease

A shift from Absorption Costing (AC) to Activity Based Costing (ABC) will result to an increase in cost of A, decrease in cost of B, increase in cost of C and increase in cost of D.

Where cost increases, profit will reduce assuming that selling prices are held constant therefore profitability of A will decrease, B increase, C decrease and also D decrease.

QUESTION 15

QN	CRITERIA	Marks
15 a	Award 1 Mark for the definition and 0.5 Marks each statement	3
15 b	Award 0.5 Mark for each value in production units	1.5
	Award 0.5 Mark for each value of selling price	1.5
	Award 0.5 Mark for each value of sales value	1.5
	Award 0.5 Mark for each value of material, labour and variable overhead	3
	Award 0.5 Mark for each value of variable cost	1.5
	Award 1 Mark for fixed cost	1
	Award 1 Mark for total cost	1
	Award 0.5 Mark for each value of profit/ loss	3
15 c	Award 0.5 Mark for each for the role and 0.5 Marks for the explanation	4
	Total marks	20

a) Master budget: the master budget consists of a budgeted statement of profit or loss, a budgeted statement of financial position and a cash budget. budgeted statement of profit or loss, budgeted statement of financial position and budgeted cash flow statement

b) Flexible budget at 40%, 50% and 90% capacity utilization

Particulars	**40%**	**50%**	**90%**
Production units in Cartons	10,000	12,500	22,500
Selling price per unit	20,000	19,400	19,000
sales value	**200,000,000**	**242,500,000**	**427,500,000**
Variable costs			
Material	100,000,000	125,000,000	213,750,000
Labour (FRW 3,000/unit)	30,000,000	37,500,000	67,500,000
Overhead 40% (FRW 2000/unit)	20,000,000	25,000,000	45,000,000

Particulars	**40%**	**50%**	**90%**
TOTAL Variable cost	**150,000,000**	**187,500,000**	**326,250,000**
Fixed cost 60%	30,000,000	30,000,000	30,000,000
Total cost(FC+VC)	**180,000,000**	**217,500,000**	**356,250,000**
Profit/Loss	**20,000,000**	**25,000,000**	**71,250,000**

c) The role of budgeting in a manufacturing company

- ✓ Planning annual operations: it's through budgetary planning that long term plans are put into action - Communicating plans to various responsibility center managers
- ✓ Motivating managers to strive to achieve the organisation's goals. Where budgetary targets are set, some individuals will be positively motivated towards achieving them
- ✓ Controlling: budgeting helps in controlling by comparing actual results against the budgeted results and reporting variances
- ✓ Evaluating performance - Avoiding wastes: budgets as a reference point of what is to be done and hence minimizes waste of resources on unplanned & unnecessary activities

End of Marking Guide and Model Answers