CERTIFIED ACCOUNTING TECHNICIAN

STAGE 3 EXAMINATIONS

S3.2: MANAGEMENT ACCOUNTING

MARKING GUIDE AND MODEL ANSWERS

SECTION A

Marking Guide

Question	Answer Grid	Marks
Q1	B	2
Q2	C	2
Q3	B	2
Q4	C	2
Q5	C	2
Q6	D	2
Q7	A	2
Q8	D	2
Q9	C	2
Q10	D	2
Total Marks Awarded for Section A		20

Model Answers

QUESTION ONE

Correct answer is B

A explains cost Centre

C explains investment centre

D explains revenue centre

QUESTION TWO

Correct answer is C

A is wrong because of per unit. It is total that changes

B is wrong because production should not be constant but change

D is wrong because per unit is what is constant and not total

QUESTION THREE

Correct answer is B

VC/UNIT= (400,000,000-300,000,000)/ (16,000-6,000)

=10,000 PER UNIT

FIXED COST= 400,000,000-(16,000*10,000)

= 240,000,000

TC Equation

TC= 10,000X +240,000,000

TC of 8,000 units

TC = (10,000*8,000) +240,000,000

TC = 320,000,000

A is a fixed cost

C is variable cost per unit

D is variable cost per unit * the units estimated

QUESTION FOUR

Correct answer is C

164,000 + 2,000

Negative seasonal variation is added to actual sales to give the trend

Seasonal variation is negative when the trend is greater than actual sales

A is only correct when seasonal variation is +2,000

B is correct when there is no seasonal variation

D is only correct when seasonal variation is -4,000

QUESTION FIVE

Correct answer is C

Details	**FRW**
Cost	55,000,000
Accumulated Depreciation	32,500,000
Net Book Value	22,500,000
Loss on Disposal	3,750,000
Cash Received= NBV - Loss	18,750,000

A is the Net book value or Carrying amount

B arises when the loss is deducted from accumulated depreciation

D is when the business makes the same profit as the amount of loss

QUESTION SIX

Correct answer is D

	Chairs	Tables	Total
Sales Units	2X	X	3X
Selling Price/Unit	50,000	80,000	
Sales Value	100,000X	80,000X	720,000,000

100,000X + 80,000X = 720,000,000

X = 720,000,000/180,000

X = 4,000

	Chairs	Tables	Total
Sales Units	8,000	4,000	12,000
Selling Price/Unit	50,000	80,000	-
Sales Value	400,000,000	320,000,000	720,000,000

A is sales value of chairs

B is sales units of chairs * selling price per unit of tables

C is sales units of tables * selling price per unit of chairs

QUESTION SEVEN

Correct answer is A

Product	A	B	C	D
Extra cost of external purchase	FRW 1,000	FRW 2,100	FRW 2,000	FRW 1,000
Direct labour hours per unit	0.10	0.30	0.25	0.20
Extra cost per hour saved by purchasing	10,000	7,000	8,000	5,000
Priority for external purchasing	4th	2nd	3rd	1st
Priority for making in-house	1st	3rd	2nd	4th

QUESTION EIGHT

Correct answer is D

A: A standard based on current operating conditions is known as a current and not basic standard

B: A standard based on efficient but not perfect operating conditions is known as attainable and not ideal standard

C: A standard that us based on perfect operating conditions is known as ideal and not attainable standard

QUESTION NINE

Correct answer is C

Quick ratio= $\frac{\text{Current assets- Inventories}}{\text{Current liabilities}}$

$= \frac{(35,000+1,250+40,000)-35,000}{60,000}$

$= 0.69$

Current ratio = 76,250/60,000

= 1.27

QUESTION 10

Correct answer is D

A, B and C are objectives of a good accounting system

SECTION B

QUESTION 11

Marking Guide

SN	Criteria	Marks
i	Total cost incurred	
	Award 0.5 marks for each component of total cost included (0.5*8)	4
ii	Cost per occupied room	
	Award 0.5 marks for total rooms in a year	0.5
	Award 0.5 marks for total occupied rooms in a year	0.5
	Award 1 mark for correct answer (division)	1
		2
iii	Total revenue generated	
	Award 1 mark for conversion of margin to mark up	1
	Award 1 mark for correct answer	1
		2
iv	Rate to be charged per occupied room	
	Award 1 mark for division	1
	Award 1 mark for correct answer	1
		2
	Maximum total marks awarded for question 11	10

Model Answers

i. Total cost incurred by the hotel

Details	FRW
Rent	90,000,000
Salaries	60,000,000
Electricity Cost	6,500,000
Maintenance Cost	5,200,000
Food	36,000,000
Beverages	12,400,000
Security	4,000,000
Other Expenses	3,200,000
Total cost incurred	217,300,000

ii. Cost per occupied room

Total rooms per annum= 90*365= 32,850

Occupied rooms= 32,850*70%= 22,995

Total cost = 217,300,000/22,995=9,449.88

iii. Total revenue generated

Total cost= 217,300,000

Profit mark up of 20%

Total revenues= 217,300,000+ (20/100-20) *217,300,000

Total revenue= 271,625,000

iv. Rate per room

Rate per room= total revenue/ occupied rooms

=271,625,000/22,995= 11,812.35

QUESTION 12

Marking Guide

SN	Criteria	Marks
a)	Seven steps followed in planning and control cycle	
	Award 1 mark for each correct step explained (1*7)	7
	Maximum marks awarded for part a	7
b)		
i	Incremental budget	
	Award 1 mark for correct explanation	1
ii	Zero based budget	
	Award 1 mark for correct explanation	1
iii	Activity based budget	
	Award 1 mark for correct explanation	1
	Maximum marks awarded for part b	3
	Maximum total marks awarded for question 12	20

Model Answers

a) Steps followed in the planning and control cycle

There are seven steps that are followed in the planning and control cycle:

Step 1: Identify objectives

Objectives establish the direction in which the management of the organisation wish it to be heading. Typical objectives include the following. To maximise profits; To increase market share; To produce a better-quality product than anyone else. Objectives answer the question: 'where do we want to be?'.

Step 2: Identity potential strategies

Once an organisation has decided 'where it wants to be', the next step is to identify a range of possible courses of action or strategies that might enable the organisation to get there. The organisation must therefore carry out an information-gathering exercise to ensure that it has a full understanding of where it is now. This is known as a 'position audit' or 'strategic analysis' and involves looking both inwards and outwards.

Step 3: Evaluate strategies

The strategies must then be evaluated in terms of suitability, feasibility and acceptability in the context of the strategic analysis. Management should select those strategies that have the greatest potential for achieving the organisation's objectives. One strategy may be chosen, or several strategies.

Step 4: Choose alternative courses of action
The next step in the process is to collect the chosen strategies together and co-ordinate them into a long-term plan, commonly expressed in financial terms. Typically, a long-term financial plan would show the following: Projected cash flows; Projected long-term profits; Capital expenditure plan; Forecasts of statement of financial position; A description of the long-term objectives and strategies in words.

Step 5: Implement the long-term plan
The long-term plan should then be broken down into smaller parts. It is unlikely that the different parts will fall conveniently into successive time periods. Strategy A may take two and a half years, while Strategy B may take five months, but not start until year three of the plan. It is usual, however, to break down the plan as a whole into equal time periods (usually one year). The resulting short-term plan is called a budget.

Step 6: Measure actual results and compare with plan
At the end of the year actual results should be compared with those expected under the long-term plan. The long-term plan should be reviewed in the light of this comparison and the progress that has been made towards achieving the organisation's objectives should be assessed. Management can also consider the feasibility of achieving the objectives in the light of unforeseen circumstances which have arisen during the year. If the plans are now no longer attainable then alternative strategies must be considered for achieving the organisation's objectives.

Step 7: Respond to divergences from plan
Performance reports provide feedback information by comparing planned and actual outcomes. Such reports should highlight those activities that do not conform to plan, so that managers can devote their scarce time to focusing on these items. Effective control requires that corrective action is taken so that actual outcomes conform to planned outcomes.

b) Explain the following approaches as used in budgeting:

- **Incremental budget:** A budget that is prepared based on the current period's results plus an extra amount for estimated growth or inflation in the next year. This budget is a reasonable procedure if current operations are as effective, efficient and economical as they can be.
- **Zero based budget:** Involves preparing a budget for each cost centre from a zero base. Every item in the expenditure must be justified in its entirety in order to be included in the next periods budget.
- **Activity based budget:** A budget prepared following the principles of activity-based costing. The cost pools and cost drivers are identified. Cost pool is an activity that consumes resources while cost driver is the unit of activity that consumes resources or basis of apportionment of cost pool.

SECTION C

QUESTION 13

Marking Guide

SN	Criteria	Marks
a)	Explanation of stages involved in product life cycle	
	Award 1 mark for correct listing of each of the 4 stages (1*4)	4
	Award 1 mark for correct explanation of each of the 4 stages (1*4)	4
	Note: development and launch/introduction are treated as one stage	
	Maximum marks awarded for part a	8
b)	Calculation of index	
	Award 2 marks for correct calculation of each year from 2020 – 2024 (2*5)	10
	Maximum marks awarded for part b	10
c)	Forecasting problems	
	Award 1 mark for each limitation (1*2)	2
	Maximum marks awarded for part c	2
	Maximum total marks awarded for question 13	20

Model Answers

a) Product life cycle stages

The product life cycle is generally thought to split naturally into five separate stages: Development; Launch; Growth; Maturity and Decline.

Stage 1: Development & launch

During this period of the product's life there are large outgoings in terms of development expenditure, purchase of non-current assets necessary for production, the building up of inventory levels and advertising and promotion expenses. It is likely that even after the launch, sales will be quite low and the product will be making a loss at this stage.

Stage 2: Growth

If the launch of the product is successful then during the growth stage there will be fairly rapid increases in sales and a move to profitability as the costs of the earlier stages are covered. These sales increases however, are not likely to continue indefinitely.

Stage 3: Maturity

In the maturity stage of the product life cycle, the growth in demand for the product will probably start to slow down and sales volumes will become more constant. In many cases this is the stage where the product is modified or improved, in order to sustain demand, and this may then result in a small surge in sales.

Stage 4: Decline

At some point in a product's life, unless it is a consumable item such as chocolate bars, the product will reach the end of its sale life. The market will have bought enough of the product and sales will decline. This is the point where the business should consider no longer producing the product.

b)

		Index
2020	444,000/408,000 * 100	108.80%
2021	420,000/408,000 * 100	102.90%
2022	390,000/408,000 * 100	95.60%
2023	414,000/408,000 * 100	101.50%
2024	435,000/408,000 * 100	106.60%

c) Explain any two problems or limitations of forecasting

1) The further into the future the forecast is for, the more unreliable it is likely to be.
2) The less data available on which to base the forecast, the less reliable the forecast.
3) The pattern of trend and seasonal variations cannot be guaranteed to continue in the future.
4) There is always the danger of random variations upsetting the patterns.

QUESTION 14

Marking Guide

SN	Criteria	Marks
a)		
i - vi	For each of the six variances	
	Award 1 mark for application of correct formula (1*6)	6
	Award 0.5 marks for correct answer (0.5*6)	3
	Award 0.5 marks for correct interpretation whether favourable or adverse (0.5*6)	3
	Maximum marks awarded for part a	12
b)	Explanation of factors to be considered before investigating a variance	
	Award 1 mark for each correct point explained (1*4)	4
	Maximum marks awarded for part b	4
c)	Difference between cost control and cost reduction	
	Award 2 marks for correct explanation of cost control	2
	Award 2 marks for correct explanation of cost reduction	2
	Maximum marks awarded for part c	4
	Maximum total marks awarded for Question 14	20

Model Answers

a) **Variances**

Sales Price Variance

SPV = (Budgeted Price/Unit - Actual Price/Unit) *Actual Quantity		
Budgeted Price/Unit =	144,000,000 / 10,000 =	14,400
Actual Price/Unit =	148,720,000 / 10,400 =	14,300
Actual Quantity =		10,400
SPV = (14,400 - 14,300) * 10,400 = 1,040,000 Adverse		

Material Price Variance

MPV = (Budgeted Price/Kg - Actual Price/Kg) *Actual Quantity		
Budgeted Price/Kg =	48,000,000 / 80,000 =	600
Actual Price/Kg =	51,480,000 / 79,200 =	650
Actual Quantity =		79,200
MPV = (600 - 650) * 79,200 = 3,960,000 Adverse		

Material Usage Variance

MUV = (Budgeted Quantity for Actual Production - Actual Quantity) * Budgeted Price / Kg		
Budgeted Quantity /Unit =	80,000 / 10,000 =	8
Actual production =		10,400
Budgeted Quantity for Actual Production =	8 * 10,400 =	83,200
Actual Quantity =		79,200
Budgeted Price / Kg =		600
MUV = (83,200 - 79,200) * 600 = 2,400,000 Favorable		

Labour Rate Variance

LRV = (Budgeted Rate/hr - Actual Rate/hr) * Actual Hours		
Budgeted Rate / hr =	32,000,000 / 30,000 =	1,066.67
Actual Rate / hr =	32,400,000 / 32,000 =	1,012.50
Actual Hours =		32,000
LRV = (1,066.67 - 1,012.50) * 32,000 = 1,733,333 Favorable		

Labour Efficiency Variance

LEV = (Budgeted Hours for Actual Production - Actual Hours) * Budgeted Rate / hr		
Budgeted Hours / Unit =	30,000 / 10,000 =	3
Actual Production Units =		10,400
Budgeted Hours for Actual Production = 3 * 10,400 =		31,200
Actual Hours		32,000
Budgeted Rate / hr =		1,066.67
LEV = (31,200 - 32,000) * 1,066.67 = 853,333 Adverse		

Fixed Overhead Volume Variance

FOVV = (Budgeted Quantity - Actual Quantity) * Budgeted Fixed Cost / Unit		
Budgeted Quantity =		10,000
Actual Quantity =		10,400
Budgeted Fixed Cost / Unit =	24,000,000 / 10,000 =	2,400
FOVV = (10,000 - 10,400) * 2,400 = 960,000 Favorable		

b) **Factors to be considered before investigating a variance**

- Reliability and accuracy of the figures: Mistakes in calculating budget figures, or in recording actual costs and revenues, could lead to a variance being reported where no problem actually exists (the process is actually 'in control').
- Materiality: The size of the variance may indicate the scale of the problem and the potential benefits arising from its correction.

- Possible interdependencies of variances: Sometimes a variance in one area is related to a variance in another. For example, a favourable raw material price variance resulting from the purchase of a lower grade of material, may cause an adverse labour efficiency variance because the lower grade material is harder to work with. These two variances would need to be considered jointly before making an investigation decision.

- The inherent variability of the cost or revenue: Some costs, by nature, are quite volatile (oil prices, for example) and variances would therefore not be surprising. Other costs, such as labour rates, are far more stable and even a small variance may indicate a problem.

- Adverse or favourable: Adverse variances tend to attract most attention as they indicate problems. However, there is an argument for the investigation of favourable variances so that a business can learn from its successes.

- Trends in variances: One adverse variance may be caused by a random event. A series of adverse variances usually indicates that a process is out of control.

- Controllability/probability of correction: If a cost or revenue is outside the manager's control (such as the world market price of a raw material) then there is little point in investigating its cause.

- Costs and benefits of correction: If the cost of correcting the problem is likely to be higher than the benefit, then there is little point in investigating further.

c) **Difference between cost control and cost reduction**

- Cost Control: Cost control focuses on keeping costs within established limits (budgets) through monitoring and management, while cost reduction aims to lower overall costs permanently through various strategies and improvements.
- Cost Reduction: Planned and positive approach too reducing or bringing down costs

QUESTION 15

Marking Guide

SN	Criteria	Marks
a)		
i	Identification of limiting factor and by how much	
	Award 1 mark for calculation of resources needed	1
	Award 0.5 marks for stating whether limiting factor or not	0.5
	Award 0.5 marks for the difference between resources needed and available	0.5
		2
ii	Finding the optimal production plan	
	Award 0.75 mark for correct calculation of contribution per unit (0.25*3)	0.75
	Award 0.75 mark for finding contribution per unit of limiting factor (0.25*3)	0.75
	Award 1 marks for correct ranking of the three (overall ranking)	1
	Award 0.5 marks for correct optimal plan per product (0.5*3)	1.5
		4
	Maximum marks awarded for part a	6
b)	Calculation of cost per unit under absorption costing	
	Award 0.5 marks for each correct direct cost/prime per unit (0.5*3)	1.5
	Award 0.5 marks for each apportionment of amount of cost pools (0.5*3)	1.5
	Award 0.5 marks for each correct apportionment of set up costs (0.5*3)	1.5
	Award 0.5 marks for each correct apportionment of machining cost (0.5*3)	1.5
	Award 0.5 marks for each correct apportionment of material handling (0.5*3)	1.5
	Award 0.5 marks for correct final answer	0.5
	Maximum marks awarded for part b	8
c)	Profitability Ratios	
i	Operating Profit Margin	
	Award 1 mark for correct calculation of each ratio for each year (1*2)	2
ii	Asset Turnover	
	Award 1 mark for correct calculation of each ratio for each year (1*2)	2
iii	Return on Capital Employed	
	Award 1 mark for correct calculation of each ratio for each year (1*2)	2
	Maximum marks awarded for part c	6
	Maximum total marks awarded for Question 15	**20**

Model Answers

a) Limiting factors and optimal plan

i) Identification of the limiting factor and by how much

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

Materials Available =	80,000 Square Meters			
Materials Needed:				
	Production units	Meters per unit		Total Meters
A	3,800	15,600 / 2,000 =	7.8	29,640
B	4,500	18,000 / 2,000 =	9	40,500

C	2,700	18,000 / 2,000 =	9	24,300
		Materials Needed		94,440

Materials is a limiting factor because we need 94,440 metres but we have only 80,000. There is a shortage of 14,440 metres (94,440 - 80,000).

ii) Finding the optimal production plan

	A	B	C
Selling Price / Unit	55,000	65,000	72,000
Less: Variable Costs:			
Materials	15,600	18,000	18,000
Labour	10,800	12,000	20,400
Variable Overheads	6,800	6,200	9,800
Variable Cost / Unit	33,200	36,200	48,200
Contribution / Unit =	21,800	28,800	23,800

Contribution per Unit of Limiting Factor			
Contribution per unit	21,800	28,800	23,800
Materials per Unit	7.8	9	9
Contrib per Unit of LF =	2,794.87	3,200.00	2,644.44
Ranking	2nd	1st	3rd

Allocating the resources and finding the optimal plan

Rank	Product	Optimal Plan	Meters Used	Meters Remaining
				80,000
1st	B	4,500	(4500*9) =40,500	(80,000 - 40,500) = 39500
2nd	A	3,800	(3,800 * 7.8) =29,640	(39,500 -29,640) = 9860
3rd	C	(9860 / 9) = 1,095	9860	0

Conclusion

Optimal Production Plan is to produce 4,500 units of B, 3,800 units of A and 1,095 units of C

b) Activity Based Costing

Cost per Unit: Activity Based Costing

	Alpha	Beta	Gama
Direct materials cost/unit	240	360	110
Direct labour cost/unit	160	120	90
Direct Cost / Unit (Prime)	400	480	200
Overhead Cost/Unit (W1)	297.6	101.37	100.18
Cost per Unit	697.6	581.37	300.18

W1 Overhead Cost per Unit

Cost Pool	Cost Driver		Amount	Alpha	Beta	Gama
Set up cost	No of set ups	(25%*26,000,000) =	6,500,000	3,380,000	1,820,000	1,300,000
Material handling cost	No of orders	(35%*26,000,000) =	9,100,000	4,853,333	2,426,667	1,820,000
Machining cost	Machine hours	(40%*26,000,000) =	10,400,000	3,670,588	1,835,294	4,894,118
Total overheads			26,000,000	11,903,922	6,081,961	8,014,118
Production units				40,000	60,000	80,000
Overhead cost per unit				297.6	101.37	100.18

	Alpha	Beta	Gama	Total
No of set ups	260	140	100	500
No of orders	320	160	120	600
Machine hours	120,000	60,000	160,000	340,000

c) Profitability Ratios

Ratio	Formula		2,024		2,023
i) Operating Profit Margin =	Profit before interest and Tax/Sales * 100	(226000/590000) *100	38.30%	(210000/400000) *100	52.50 %
ii) Asset Turnover =	Sales / Capital Employed	590000/944000	0.63	400000/936000	0.43
	CE = TA - CL =	(884,000+170,000)-110,000	944000	(756,000+270,000)-90,000	936000
iii) Return on Capital Employed =	PBIT/ CE * 100	226000/944000	23.90%	210000/936000	22.40 %

	2,024	2,023
	FRW	FRW
Sales	590,000	400,000
Cost of Sales	300,000	160,000
Gross Profit	290,000	240,000
Distribution and Administration Expenses	64,000	30,000
Operating Profit (PBIT)	226,000	210,000
Interest Expense	100,000	90,000
Profit Before Tax	126,000	120,000
Income Tax	12,000	10,000
Profit After Tax	114,000	110,000

END OF MARKING GUIDE AND MODEL ANSWERS