



CERTIFIED ACCOUNTING TECHNICIAN
STAGE 3 EXAMINATIONS
S3.2: MANAGEMENT ACCOUNTING
MARKING GUIDE AND MODEL ANSWERS

MARKING GUIDE

SECTION A

QUESTION ONE

The correct answer is **B**

Raw materials need	$(6 \times 150) + (8 \times 200) = 2,500 \text{ kg}$
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A is wrong because it is the total labour hours needed

C is wrong because it is the labour hours available

D is wrong because it is the raw materials available

QUESTION TWO

The correct answer is **A**

Labour hours needed	$(12 \times 150) + (14 \times 200)$	4,600 hrs
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B is wrong because it is the raw materials needed

C is wrong because it is the labour hours available

D is wrong because it is the raw materials available

QUESTION THREE

The correct answer is **C**

Details		kg
Raw materials available		2,000
Raw materials needed	$(6 \times 150) + (8 \times 200)$	2,500
Extra needed		(500)
Raw materials is a limiting factor		0

	Details		hours
A	Labour hours available		5,000
B	Labour hours needed	$(12 \times 150) + (14 \times 200)$	4,600
C=A-B	Surplus		400
Explanation	Labour is not a limiting factor		

A is wrong because 2,000 is the raw materials available

B is wrong because labour hours needed are less than hours available

D is wrong because it is the labour hours needed

QUESTION FOUR

The correct answer is **B**

A is wrong because of maximum costs

C is wrong because minimizes costs

D is wrong because optimal involves maximization of contribution and not just maximizing output

QUESTION FIVE

The correct answer is **C**

A is wrong because it defines attainable standards

B is wrong because it defines basic standards

D is wrong because it defines a budget

QUESTION SIX

The correct answer is **A**

Details	workings	Amounts
Selling price		18,250,000
Profit mark up		25%
Profit margin	$25/100+25=25/125$	20%
Profit margin		3,650,000
Target cost	SP-target profit	14,600,000

B is wrong because it is the target profit

C is wrong because it is profit when mark up is used instead of margin

D is wrong because it is a target cost when mark up is used instead of margin

QUESTION SEVEN

The correct answer is **C**

A, B and D are wrong because they are conducted in what if analysis

QUESTION EIGHT

The correct answer is **B**

Efficiency ratio: standard hours for actual production*100

Total actual hours

Standard hours per unit= $100,000/20,000=5$

Actual production unit =25,000 units

Total actual hours = 137,500 units

Efficiency ratio= $\frac{5*25,000}{137,500} = 91\%$

137,500

Production volume ratio=standard hours for actual production *100

Total budgeted hours

Standard hours per unit= 100,000/20,000=5

Actual production unit = 25,000 units

Total budgeted hours = 100,000 hours

Production volume ratio= $\frac{5 \times 25,000 \times 100}{100,000} = 125\%$

Capacity utilisation= $\frac{137,500 \times 100}{100,000} = 138\%$

A is wrong because 138% is capacity utilization while 91% is efficiency ratio

C is wrong because 125% is production volume ratio while 91% is efficiency

D is wrong because 138% is capacity utilization ratio

QUESTION NINE

The correct answer is **D**

A, B and C are wrong because they are all nonfinancial indicators

QUESTION 10

The correct answer is **A**

Using high low method

Variable cost per metre= $\frac{22,400,000 - 17,600,000}{56,000 - 40,000} = 300$

Fixed cost = 22,400,000 - (300 * 56,000)
= 5,600,000

Total equation= 300x + 5,600,000

Total cost of 45,000 square metres= (300 * 45,000) + 5,600,000
= 19,100,000

B is wrong because it is solution for fixed cost

C is wrong because it is solution for variable cost per unit or metre

D is wrong because it is total variable cost of 56,000 metres

SECTION B

QUESTION 11

Marking guide

Sub question	Criteria	Marks
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(a)	0.5 mark each for any process well provided and 0.5 mark for the process well explained the maximum of 1 mark per each budget preparation process.	6
(b)	1 mark each for an objective of a budgetary planning and control system provided.	4
Total for question 11		10

Model answers

a. The budget preparation process is as follows:

- Communicating details of the budget policy and budget guidelines:

The long-term plan is the starting point for the preparation of the annual budget.

Managers responsible for preparing the budget must be aware of the way it is affected by the long-term plan so that it becomes part of the process of meeting the organization's objectives

- Determining the factor that restricts output

The principal budget factor (or key budget factor or limiting budget factor) is the factor that limits an organization's performance for a given period and is often the starting point in budget preparation.

- Preparation of the sales budget

For many organizations, the principal budget factor is sales volume. The sales budget is therefore, often the primary budget from which the majority of the other budgets are derived. Before the sales budget can be prepared a sales forecast has to be made.

- Initial preparation of budgets

This stage involves preparation of the following budgets: Finished goods inventory budget, Production budget, Budgets of resources for production, Overhead cost budgets, Raw materials inventory budget, Raw materials purchase budget and Overhead absorption rate.

Negotiation of budgets with superiors

Once a manager has prepared their draft budget, they should submit it to their superior for approval. The superior should then incorporate this budget with the others for which they are responsible and then submit this budget for approval to their superior. This process continues until the final budget is presented to the budget committee for approval.

- Co-ordination and review of budgets

The budgets must be reviewed in relation to one another. Such a review may indicate that some budgets are out of balance with others and need modifying. The budget officer must identify such inconsistencies and bring them to the attention of the manager concerned. The revision of one budget may lead to the revision of all budgets.

- Final acceptance of the budgets

When all the budgets are in harmony with one another they are summarized into a master budget consisting of a budgeted statement of profit or loss, budgeted statement of financial position and cash budget.

- Budget review

The budgeting process does not stop once the budgets have been agreed. Actual results should be compared on a regular basis with the budgeted results.

b. The objectives of a budgetary planning and control system are as follows:

- To ensure the achievement of the organization's objectives
- To compel planning
- To communicate ideas and plans
- To co-ordinate activities
- To provide a framework for responsibility accounting
- To establish a system of control
- To motivate employees to improve their performance
- Provide a framework for authorization
- Provide a basis for performance evaluation

QUESTION 12

Marking guide

a.

Item	January 20x5 Fw'000	February 20x5 Fw'000
Gross profit 25% of sales	(0.5 mark)	(0.5 mark)
Cost of sales	(0.5 mark)	(0.5 mark)
Closing trade payable 40% of cost of sales	(0.5 mark)	(0.5 mark)
Opening trade payable		(0.5 mark)
Closing trade payable		(0.5 mark)
Amount paid February 20x5		(1 mark)
Total		(5 marks)

b.

Variable cost per unit	(1 mark)
Variable cost	(1 mark)
Fixed cost (bal figure)	(1 mark)
Variable cost for 4,000 units	(1 mark)
Total cost for 4,000 units	(1 mark)
Total	(5 marks)

Total marks for question 12

10 marks

Model answers

Item	January 20x5 Fw'000	February 20x5 Fw'000
Sales	150	80
Gross profit 25% of sales	38	20
Cost of sales	113	60
Closing trade payable 40% of cost of sales	45	24
Opening trade payable		45
Current cost of sales		60
Closing trade payable		-24
Amount paid February 20x5		81

(b)

	Frw	Units
Cost per unit	21,000,000	3500
Cost per unit	22,500,000	4500
Calculation of the Semi - variable cost		
High – Low method		
	Activity level	Cost
Low	3,500	21,000,000
High	4,500	22,500,000
Increase	1,000	1,500,000
Variable cost per unit	1,500	
At 350 Units		
Variable cost		5,250,000
Fixed cost (balancing figure)		15,750,000
Total cost		21,000,000
At 4000 units		
Variable cost		6,000,000
Fixed cost		15,750,000
Total cost for 4,000 units		21,750,000

SECTION C

QUESTION 13

Marking Guide

Details	Marks
a) Preparation of marginal costing profit statement	
Period 1 sales	0.5
Period 2 sales	0.5
Variable cost of sales period 1	1
Variable cost of sales period 2	1
Calculation of variable production cost per unit (W1)	1
Variable selling cost period 1	0.5
Variable selling cost period 2	0.5
Contribution period 1	0.5
Contribution period 2	0.5
Fixed production cost period 1	0.5
Fixed production cost period 2	0.5
Fixed non production cost (selling) period 1	0.5
Fixed non production cost (selling) period 2	0.5

Marginal costing loss period 1	1
Marginal costing profit period 2	1
Maximum marks	10
b) Preparation of absorption costing profit statement	
Period 1 sales	0.5
Period 2 sales	0.5
Cost of sales period 1	1
Cost of sales period 2	1
Calculation of total production cost per unit (W2)	2
Gross profit period 1	0.5
Gross profit period 2	0.5
Non production cost fixed period 1	0.5
Non production cost fixed period 2	0.5
Non production cost variable period 1	0.5
Non production cost variable period 2	0.5
Absorption costing loss period 1	1
Absorption costing profit period 2	1
Maximum marks	10
Total	20

Model Answer

a) Marginal Costing profit statement for period 1 and 2

Muvumba ltd

Marginal costing profit statement for period 1 and 2

Period 1				Period 2		
		Frw	Frw		Frw	Frw
Sales	(20,000*8,000)		160,000,000	(27,500*8,000)		220,000,000
variable cost of sales						
Opening inventory	(0*4,000)	0		(5,000*4,400)	22,000,000	
Add production	(25,000*4,400)	110,000,000		(25,000*4,400)	110,000,000	
Less closing inventory	(5,000*4,400)	<u>22,000,000</u>	88,000,000	(2,500*4,400)	<u>11,000,000</u>	121,000,000
Less variable selling costs	(20,000*600)		<u>12,000,000</u>	(27,500*600)		<u>16,500,000</u>
Contribution			60,000,000			82,500,000
Less fixed costs						
Production		40,000,000			40,000,000	
Non production		<u>36,000,000</u>	<u>76,000,000</u>		<u>36,000,000</u>	<u>76,000,000</u>
Marginal costing loss			(16,000,000)			6,500,000

Workings

W1 variable production cost per unit = 1,200+2,400+800

$$= 4,400$$

b) Absorption Costing profit statement for period 1 and 2

Muvumba Ltd

Absorption costing profit statement

Period 1				Period 2		
		Frw	Frw		Frw	Frw
Sales	(20,000*8,000)		160,000,000	(27,500*8,000)		220,000,000
VC of sales						
Opening inventory	(0*6,000)	0		(5,000*6,000)	30,000,000	
Add production	(25,000*6,000)	150,000,000		(25,000*6,000)	150,000,000	
Less closing inventory	(5,000*6,000)	<u>30,000,000</u>	120,000,000	(2,500*6,000)	<u>15,000,000</u>	165,000,000
Gross profit			40,000,000			55,000,000
Less non production costs						
-Fixed		36,000,000			36,000,000	
-Variable	(20,000*600)	<u>12,000,000</u>	<u>48,000,000</u>	(27,500*600)	<u>16,500,000</u>	<u>52,500,000</u>
Absorption costing profit/loss			(8,000,000)			2,500,000

W2. Total production cost per unit= 4,400+1,600=6,000

QUESTION 14

Marking Guide

QN	Description	Marks
a	calculation of variances	
i	sales price variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
ii	sales volume variances under MC	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
iii	Material price variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
iv	Material usage variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5

v	Labour rate variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
vi	Labour efficiency variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
vii	Variable overhead expenditure variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
viii	Variable overhead efficiency variance	
	Correct formula	0.5
	Application of formula	0.5
	Correct answer	0.5
	Correct interpretation	0.5
	Maximum marks for part a	16
b	Types of standards	
	Ideal standard	1
	Attainable standard	1
	Current standard	1
	Basic standard	1
	Maximum marks for part b	4
	Total	20

MODEL ANSWERS

a) Calculation of variances and stating whether adverse or favourable

i. Sales price variance

SPV = (budgeted selling price per unit - actual selling price per unit) * actual quantity

Budgeted selling price per unit = 15,000

Actual selling price per unit = 16,667

Actual quantity = 195,000

SPV = (15,000 - 16,667) * 195,000 = 325,000,000 F

ii. Sales volume variance (under MC)

SVV = (budgeted quantity - actual quantity) * budgeted contribution/unit

Budgeted quantity = 200,000

Actual quantity = 195,000

Budgeted contribution/unit = (700,000,000 / 200,000) = 3,500

SVV = (200,000 - 195,000) * 3,500 = 17,500,000 A

iii. Material price variance

MPV = (budgeted price/kg - actual price/kg) * actual quantity

Budgeted price/kg = 300

Actual price/kg = 320

Actual quantity = (944,000,000 / 320) = 2,950,000

MPV = (300 - 320) * 2,950,000 = 59,000,000 A

iv. Material usage variance

MUV = (budgeted quantity for actual production - actual quantity) * budgeted price/kg

Budgeted quantity = 900,000 / 300 = 3,000,000

Budgeted quantity per unit = 3,000,000 / 200,000 = 15

Budgeted quantity for actual production = 15 * 195,000 = 2,925,000

Actual quantity = 2,950,000

Budgeted price/kg = 300

MUV = 92,925,000 - 2,950,000 * 300 = 7,500,000 A

v. Labour rate variance

$LRV = (\text{budgeted rate/hour} - \text{actual rate/hour}) \times \text{actual hours}$

Budgeted rate/ hour = 5,000

Actual rate/ hour = 4,500

Actual hours = $(562,500,000 / 4,500) = 125,000$

$LRV = (5,000 - 4,500) \times 125,000 = 62,500,000 \text{ F}$

vi. Labour efficiency variance

$LEV = (\text{budgeted hours for actual production} - \text{actual hours}) \times \text{budgeted rate/hour}$

Budgeted hours = $600,000,000 / 500 = 120,000$

Budgeted hours per unit = $120,000 / 200,000 = 0.60$

Budgeted hours for actual production = $(0.6 \times 195,000) = 117,000$

Actual hours = $(562,500,000 / 4,500) = 125,000$

Budgeted rate/hour = 5,000

$LEV = (117,000 - 125,000) \times 5,000 = 40,000,000 \text{ A}$

vii. Variable overhead expenditure variance

$V_{\text{exp}} = (\text{budgeted rate/hour} - \text{actual rate/hour}) \times \text{actual hours}$

Budgeted rate/hour = 800

Actual rate/hour = 830

Actual hours = $(788,500,000 / 830) = 950,000$

$V_{\text{Exp}} = (800 - 830) \times 950,000 = 28,500,000 \text{ A}$

viii. Variable overhead efficiency variance

$V_{\text{eff}} = (\text{budgeted hours for actual production} - \text{actual hours}) \times \text{budgeted rate/hour}$

Budgeted hours = $800,000,000 / 800 = 1,000,000$

Budgeted hours per unit = $1,000,000 / 200,000 = 5$

Budgeted hours for actual production $(5 \times 195,000) = 975,000$

Actual hours = 950,000

Budgeted rate/ hour = 800

$V_{\text{Eff}} = (975,000 - 950,000) \times 800 = 20,000,000 \text{ F}$

b) Explain the following types of standards

Ideal standards

These are based on perfect operating conditions: no wastage, no spoilage, no inefficiencies, no idle time, no breakdowns. Variances from ideal standards are useful for pinpointing areas where a close examination may result in large savings to maximize efficiency and minimize waste. However, ideal standards are likely to have an unfavourable motivational impact because reported variances will always be adverse. Employees will often feel that the goals are unattainable and not work so hard.

Attainable standards

These are based on the hope that a standard amount of work will be carried out efficiently, machines properly operated or materials properly used. Some allowance is made for wastage and inefficiencies. If well set, they provide a useful psychological incentive by giving employees a realistic but challenging target of efficiency. The consent and co-operation of employees involved in improving the standard are required.

Current standards

These are based on current working conditions (current wastage, current inefficiencies). The disadvantage of current standards is that they do not attempt to improve on current levels of efficiency.

Basic standards

These are kept unaltered over a long period of time, and may be out of date. They are used to show changes in efficiency or performance over a long period of time. Basic standards are perhaps the least useful and least common type of standard in use.

QUESTION 15

Marking guide

a.

	Department A	Department B
Actual hours per unit	1 mark	1 mark
Efficiency ratio	1 mark	1 mark
Capacity ratio	1 mark	1 mark
Activity ratio	1 mark	1 mark
1 mark is awarded for each correct comment given and maximum is 2 marks.		
Subtotal		10 Marks

b.

Financial	Gross profit	1 mark
Internal	Productivity	1 mark
	Unit cost	1 mark
Customer	Percentage of sales represented by Option 1	1 mark
Innovation and learning	Development costs as % of sales	1 mark
Subtotal		5 Marks

c. 1 mark for the purpose of internal controls and 1 mark each stated internal controls limitation, maximum of 5 marks

Total marks for question 25

20 Marks

Model answers

a. Calculation of performance indicators

	Department A	Department B
Output in units	95,000	75,000
Budgeted output	80,000	100,000
Hours worked	130,000	110,000
Standard time	1.5	1.5
Actual hours per unit: Hours worked/Output in units	1.37	1.47
Efficiency ratio: Output in units* standard time /Hours worked	109.6%	102.3%
Capacity ratio: Hours worked/ (Budgeted output* Standard time)	108.3%	73.3%
Activity ratio: Output in units/Budgeted output	118.8%	75.0%

Efficiency ratio:

If the ratio is 100% this means that the workforce has worked as efficiently as the standard that was set.

If the ratio is more than 100% then they have worked more efficiently than expected. If the efficiency ratio is less than 100%, the work force has been less efficient than expected.

However, both department A and B are efficient than expected and we should expect more output than expected.

Capacity ratio:

If the capacity ratio is less than 100% then fewer hours were worked than budgeted. If the capacity ratio is more than 100%, more hours have been worked than budgeted.

If more hours are worked than budgeted (and the capacity ratio exceeds 100%), we should expect to produce more output. If fewer hours are worked than budgeted (and the capacity ratio is less than 100%), we should expect to produce less output than expected.

However, we should expect to produced more output than expected in Department A and less output than expected from Department B.

b. Performance indicators

Financial	Gross profit	Option 1 = $(S-C1)/S1$	85%
Internal	Productivity	Option 1 = $U1/H1$	4.00 units per hour
	Unit cost	Option 1 = $(C1)/(U1)$	16,000 Frw per Unit
Customer	Percentage of sales represented by Option 1	Option 1 = $(S1)/(S2+S1) * 100$	40.74%
Innovation and learning	Development costs as % of sales	Option 1 = $(D)/(S1+S2) * 100$	6.00%

c. Internal controls and internal controls limitations

The purpose of internal controls is:

- To protect the accounting system from systemic weaknesses, fraudulent activities and human error,
- To ensure the accounting system complies with applicable laws and regulations,
- To ensure the company is working to meet its objectives.

The internal controls limitations:

- The potential for human error,
- The possibility of controls being by-passed or over-ridden,
- The costs of controls outweighing their benefits,
- Controls tending to be designed to cope with routine and not non-routine transactions.

END OF MARKING GUIDE AND MODEL ANSWERS