CERTIFIED ACCOUNTING TECHNICIAN

STAGE 3 EXAMINATIONS

S3.2: MANAGEMENT ACCOUNTING

MARKING GUIDE AND MODEL ANSWERS

SECTION A

Marking Guide

QN	Answer	Marks
1	C	2
2	D	2
3	D	2
4	C	2
5	B	2
6	C	2
7	A	2
8	B	2
9	D	2
10	A	2

Model Answers

QUESTION ONE

- Correct Answer is C.
- Rationale
- Continuous data can take on any value and is measured rather than counted, temperature is a standard example, since it can vary infinitely rather than being restricted to whole, countable units. A secondary source provides "second hand" data, information reported by someone else, rather than data the organisation has gathered itself. The highest recorded temperature reported by a TV weather forecast satisfies both conditions: it is continuous by nature, and it reaches the company as a second hand report from an external broadcaster, not through its own direct measurement.
- Option A is continuous (rainfall is measured, not counted) but fails on source: because the company's own personnel operate the gauge, this data is as close to its origin as possible, making it primary rather than secondary.
- Option B fails on both counts: the number of mechanical failures is counted in whole numbers, making it discrete rather than continuous, and it is reported by the company's own engineers, making it primary rather than secondary.
- Option D is genuinely secondary, since it comes from a trade magazine rather than the company's own observation, but the number of new flavours introduced is counted in whole numbers, making it discrete rather than continuous.

QUESTION TWO

- Correct Answer is D: Capital budget.
- Rationale
- A capital budget is a budget for the cost of non-current assets, that is, for the purchase of non-current assets such as machinery. Capital budgets often span multiple periods, showing planned payments across the relevant years, which fits a machinery upgrade planned over 3–5 years.
- The other three options are all functional budgets, covering the organisation's ongoing *operational* activity rather than its asset purchases:

- Production budget plans the number of units to be produced in a period. It's worth noting the word "production" appears in both the stem and this option, which could tempt a student to match on vocabulary alone, but planning output volumes is entirely different from planning to acquire the machinery that produces that output.
- Material budget plans the quantities and cost of materials to be used and purchased, an operating cost, not capital expenditure.
- Labour budget plans the labour hours and cost needed to run production, again an ongoing operating cost.

QUESTION THREE

- Correct Answer is D: II and IV only.
- Rationale
- A code is briefer than a full description, saving clerical time and storage space, directly supporting Statement II, that coding speeds up processes. Coding also allows each cost to carry built-in characteristics (nature, type, cost centre, department), making it easier to manage and analyse cost data, directly supporting Statement IV, that coding helps with cost analysis and control.
- Statement I is false: a good coding system must be deliberately designed to avoid confusion between similar-looking characters, this is a design feature requiring careful planning, not something a system corrects "automatically." The risk of this kind of mistake is reduced through good design, not removed by some automatic correction mechanism.
- Statement III is false: nothing about coding relates to keeping information confidential, coding's purpose is precision, brevity, and ease of processing, not restricting who can access the data.

QUESTION FOUR

- Correct Answer is C.
- Rationale
- A cash budget is a statement in which estimated future cash receipts and payments are tabulated, both sides are essential to understanding the organisation's true liquidity position. Regularly comparing actual results against the forecast, through budgetary control, allows management to identify variances early and take corrective action, keeping the forecast a genuinely useful planning tool rather than a static estimate.
- Option A describes a real but flawed shortcut: relying solely on the previous year's figures ignores the trend and seasonal variation analysis that proper forecasting techniques are built on, producing a forecast that fails to reflect genuine changes in the business.
- Option B captures only half of what a cash flow forecast needs, receipts matter, but a forecast built on inflows alone says nothing about the organisation's ability to meet its payment obligations, which is just as critical to liquidity.
- Option D ignores that coordination across departments is one of the core purposes of budgetary control; a forecast prepared in isolation risks missing information that other functions hold about upcoming receipts or payments.

QUESTION FIVE

- Correct Answer is B.
- Option B is correct because it identifies the one feature that most directly reflects management accounting's actual purpose: enabling control by isolating what a manager can genuinely act on, which is precisely why the report separates controllable from non-controllable variances rather than just presenting a single combined number.

- Option A exploits the word "monthly" and wrongly reframes frequent reporting as making the information "historical... for statutory filing", inverting the point entirely: frequent reporting exists to support timely, forward-looking control, the opposite of the once-a-year, backward-looking statutory reporting cycle.
- Option C takes a genuine feature (breaking costs into material, labour, overhead) and attaches the wrong purpose to it, reconciliation with external financial statements is a financial accounting concern, not why a production manager would want this breakdown; they want it to see where a variance came from so they can act on it.
- Option D takes another genuine feature (comparing standard to actual cost) and misattributes its purpose to tax calculation, a financial/statutory concern entirely disconnected from what a production manager does with this report day to day.

QUESTION SIX

- Correct Answer is C.
- Rationale
- Under absorption costing, production overheads (both variable and fixed) are included in the cost of each unit, so inventory is valued using the full production cost. Under marginal costing, only variable production costs are included in the cost of each unit, with fixed overhead treated as a period cost written off in full against the period incurred rather than carried forward in inventory. This is the fundamental point of divergence between the two methods.
- Option A and Option B each reverse the true relationship between the two methods, A wrongly claims marginal costing includes all costs while absorption includes only variable costs, and B wrongly claims absorption excludes fixed overheads while marginal includes them; both are the exact opposite of how the two methods actually work.
- Option D, although factually correct as a general statement, describes a similarity between the two methods rather than a difference, both do typically exclude non-production overheads from inventory valuation, but the question specifically asks what distinguishes marginal from absorption costing, and this statement doesn't address that distinction at all.

QUESTION SEVEN

- Correct Answer is A.
- Rationale
- The book's controllability principle states that responsibility centre managers should be judged on what they can genuinely influence, if a factor (like a centrally-fixed transfer price) is outside their control, using it to judge their performance risks producing a misleading picture, in the same way the book notes that a profit centre manager facing uncontrollable fixed costs should be judged on contribution instead.
- Option B misclassifies the division: a revenue centre is accountable for revenue *only*, with no responsibility for costs, but the manufacturing division clearly incurs real production costs (as shown by the FRW40,000,000 cost of the inventory transferred), so it's a profit centre, not a pure revenue centre. Option C directly contradicts the facts given, the division plainly does incur costs, so a profit-based evaluation is possible in principle; the issue is which *components* of that profit the manager actually controls.
- Option D overcorrects into an extreme that misunderstands why transfer pricing exists at all, divisions are deliberately linked through internal trading precisely because they belong to the same organisation; the real issue isn't that the transfer price is irrelevant, but that this particular manager has no control over it.

QUESTION EIGHT

- Correct Answer is B.
- Rationale
- When ratios are compared over time using historical cost figures, inflation distorts the comparison unless the figures are restated using an appropriate index to reflect a common price level.
- Option A overreaches into an absolute claim, a genuine limitation exists, but it doesn't mean ratio analysis is invalid outright; it means adjustment is needed.
- Option C confuses two distinct concepts: depreciation is the systematic allocation of an asset's cost over its useful life, not the source of this particular distortion, the issue here is the unadjusted historical cost basis during inflation, not depreciation itself.
- Option D makes a factually incorrect claim: historical cost figures are recorded at their original transaction price, not automatically restated to replacement cost, and past sales revenue reflects the price level of that year, not "current" prices, the premise of this option doesn't match how historical cost accounting actually works.

QUESTION NINE

- Correct Answer is D.
- Rationale
- An accounting system is effective if it meets its objectives, so the logical starting point of any review is to check whether those objectives, and the key performance indicators used to measure them, are actually being achieved. This gives the review a clear frame of reference before deciding where to focus further attention.
- Option A is a genuinely useful input to a system review, but employee feedback is subjective and secondary, it doesn't, on its own, establish whether the system is meeting the purpose it was implemented for.
- Option B is a real technique, but disproportionate as a starting point: auditing every transaction since implementation is a resource-intensive, targeted response usually undertaken once a specific concern has already been identified, not the natural first move in a general effectiveness review.
- Option C is a sensible comparative approach, but it shows what has changed in the financial reports, not whether those changes reflect the system's own stated objectives being met.

QUESTION 10

- Correct Answer is A.
- Rationale
- Individuals working within a system tend to put up barriers to change, even when the change is valid and beneficial, largely because they fear the uncertainty that surrounds it. This is exactly what the scenario describes: department heads facing real difficulties with real-time access, and staff raising genuine concerns about security and the learning curve, all signs of the short-term confusion and resistance that typically accompanies a system change.
- Option B contradicts the scenario directly: department heads are explicitly reporting difficulties, not experiencing error-free accessibility.
- Option C also contradicts the facts given: staff are raising concerns, not showing immediate improved morale, resistance and uncertainty are the natural first reaction to change, not enthusiasm.
- Option D overstates what training alone can achieve: staff training is a genuine, recommended response to a system change, but a single short session does not eliminate resistance, which tends to ease gradually as users adapt and gain confidence, not disappear immediately after one training session

SECTION B

QUESTION 11

Marking Guide

QN11	Description	Marks
a	Total prime costs	2
b	Total non-production costs	2
c	Total variable costs	2
d	Total administrative costs	2
e	Total indirect costs	2
	Total marks awarded for Question 11	10

Model Answers

a) Total prime costs

Statement of Cost	FRW
Direct material (leather): 8,500,000 purchases − 150,000 returns + 280,000 carriage inwards − 90,000 scrap credit	8,540,000
Direct labour (shoemakers' wages)	2,800,000
Direct expense (royalty per pair sold)	200,000
TOTAL PRIME COST	11,540,000

b) Total non-production costs

Statement of Cost	FRW
Administrative overheads (office rent, management salaries, secretarial/accounting, audit fees, office equipment depreciation)	7,900,000
Selling & distribution overheads (delivery, advertising, sales salaries, commission, free samples)	10,880,000
TOTAL NON-PRODUCTION COSTS	18,780,000

c) Total variable costs

Statement of Cost	FRW
Direct material	8,540,000
Direct labour	2,800,000
Direct expense (royalty)	200,000
Factory power and electricity	600,000
Delivery costs	4,200,000
Sales commission	950,000
TOTAL VARIABLE COSTS	17,290,000

d) Total administrative costs

Statement of Cost	FRW
Rent of head-office building	1,300,000
General management salaries	3,400,000
Secretarial and accounting department expenses	2,700,000
External audit fees	320,000
Depreciation of office equipment	180,000

TOTAL ADMINISTRATIVE COSTS	7,900,000

e) Total indirect costs

Statement of Cost	FRW
Factory overheads (supervision, rent & rates, power, depreciation, factory manager's salary, notional rent)	5,330,000
Administrative overheads	7,900,000
Selling & distribution overheads	10,880,000
TOTAL INDIRECT COSTS	24,110,000

QUESTION 12

Marking Guide

QN	Description	Marks
a	1 mark for correct role of planning and 1 mark for correct role of control	2
b)	1 Mark per correct step and 1 mark for a relevant explanatory link to the scenario	8
	Total marks awarded for question 12	10

Model Answers

a) Planning vs. control

Planning involves making choices between alternative courses of action and is primarily a decision-making activity, deciding where the organisation wants to go and how it intends to get there. Control involves measuring and correcting actual performance to ensure that the strategies chosen, and the plans for implementing them, are actually carried out as intended.

b) The seven steps applied to Huye Dairy Products Ltd

1. Identify objectives: The Managing Director's decision to become the leading supplier of processed milk products in Rwanda within five years establishes where the company wants to be; this is the objective that gives the rest of the cycle its direction.
2. Identify potential strategies: after carrying out a position audit (analysing production capacity, financial resources, and competitors), the company identified a range of possible ways to achieve its objective: expanding the plant, introducing new products, and forming a retail partnership.
3. Evaluate strategies: The Board evaluated these three strategies, presumably weighing their suitability, feasibility, and acceptability, before deciding which to pursue.
4. Choose alternative courses of action**:** The Board selected the plant expansion and new product strategies, and these were consolidated into a formal five-year plan expressed in financial terms (projected cash flows, profits, and capital expenditure).
5. Implement the long-term plan: the five-year plan was broken down into a one-year budget for the coming year, translating the long-term strategy into a shorter-term operational plan.
6. Measure actual results and compare with plan: after six months, the finance director compared actual sales performance against the budget and identified that revenue was below target.
7. Respond to divergences from plan**:** having identified this shortfall, management responded by reviewing its pricing and marketing strategy, illustrating the corrective action that closes the loop of the cycle.

SECTION C

QUESTION 13

Marking Guide

QN	Description	Marks
a)	1 mark for a correct formula of NPV	1
	1 mark for every Present Value well calculated *4	4
	1 mark for Net Present Value	1
	1 mark for interpretation and good decision taken	1
b)	1 mark for a correct limitation of discounted cash flow technique, maximum 3	3
c)	Identification of limiting factor	1
	1 mark for each contribution per limiting factor, the maximum marks 3	3
	A ward 1 mark for optimal production unit for product, the maximum marks 3	3
	1 mark for each correct contribution based on the optimal production plan, the maximum marks 3	3
	Total marks for question 13	20

Model Answers

a) Net Present Value

Year	Cash flow (FRW million)	Discount factor (6%)	Present value (FRW million)
0	(450)	1.000	(450)
1	130	0.943	122.59
2	90	0.890	80.10
3	100	0.840	84.00
4	160	0.792	126.72
		Net present value	(36.59)

Net present value = FRW (36.59) million, negative.
Decision: KPM should reject the project. Where the net present value is negative, the project should be rejected, because the present value of the cash inflows the project is expected to generate is less than the initial investment required, accepting it would reduce shareholder wealth rather than increase it.

b) limitation of discounted cash flow technique

1. It can be difficult to identify an appropriate discount rate. The reliability of the whole NPV calculation depends on selecting a discount rate that genuinely reflects the cost of capital and risk of the project, and getting this wrong distorts the result.
2. Cash flows are, for simplicity, usually assumed to occur at year ends, an assumption that may be unrealistic. In practice, receipts and payments occur throughout the year rather than in a single lump sum at each year end, so this simplification can misstate the true timing, and therefore the true present value, of the cash flows.
3. Some managers are unfamiliar with the concept of NPV. Because it relies on discounting and present value concepts that not everyone in a management position has been trained in, NPV can be harder to communicate and gain buy-in for compared with simpler techniques such as payback period, even where NPV is technically the more rigorous method.

c)identifying the limiting factor

Labour hours required to meet maximum sales demand for each product:

Details	Product X	Product Y	Product Z	Total
Sales demand (units)	4,000	3,000	2,500	
Labour hours per unit	2	3	4	
Labour hours required	8,000	9,000	10,000	27,000

- Labour hours available: 20,000.
- Labour hours required to meet full demand: 27,000.
- Shortage of 7,000
- Since 27,000 hours are required but only 20,000 hours are available, labour hours are a limiting factor on production for the coming period.

d) Ranking products by contribution per unit of limiting factor

Details	Product X	Product Y	Product Z
Selling price per unit (FRW)	30,000	50,000	40,000
Variable cost per unit (FRW)	20,000	32,000	28,000
Contribution per unit (FRW)	10,000	18,000	12,000
Labour hours per unit	2	3	4
Contribution per labour hour (FRW)	5	6	3
Ranking	2nd	1st	3rd

Product Y earns the highest contribution per labour hour and should be produced first, followed by Product X, and finally Product Z.

e) Optimal production plan and total contribution

Product	Units produced	Labour hours used	Contribution per unit (FRW)	Total contribution (FRW)
Y (produce in full)	3,000	9,000	18,000	54,000,000
X (produce in full)	4,000	8,000	10,000	40,000,000
Z (balance)	750	3,000	12,000	9,000,000
Total		20		103,000,000

Working for Product Z: after producing Y and X in full, hours used = 9,000 + 8,000 = 17,000 hours, leaving 20,000 − 17,000 = 3,000 hours. Each unit of Z requires 4 hours, so the maximum units of Z that can be produced with the remaining hours = 3,000 ÷ 4 = 750 units (out of the maximum demand of 2,500 units).

Total contribution generated by the optimal production plan = FRW 103,000,000.

QUESTION 14

Marking Guide

QN	Description	Marks
a)	1 mark for monthly correct receipts from receivables	3
	0.5 marks for a well recorded Loan received	0.5
	1 mark for monthly correct payments to suppliers	3
	0.5 marks for a well recorded Running expenses	1.5
	1 mark for correct delivery van instalments amounts	2
	1 mark for each Loan repayment (capital + interest)	2
	1 mark for a correct Net cash flow for the month (Total Receipt and Total payment)	3
	0.5 marks for a correct Opening balance	1.5
	0.5 marks for a correct closing balance	1.5
b	1 mark for correct action, the maximum 2	2
	Total marks awarded for question 14	20

Model Answers

a) Cash budget for the three months ending 31 March 2025
Workings: Receipts from receivables

- January: (50% * Dec sales 45,000,000 * 98%) + (30% * Nov sales 40,000,000) + (15% * Oct sales 35,000,000) = 22,050,000 + 12,000,000 + 5,250,000 = FRW39,300,000
- February: (50% * Jan sales 50,000,000 * 98%) + (30% * Dec sales 45,000,000) + (15% * Nov sales 40,000,000) = 24,500,000 + 13,500,000 + 6,000,000 = FRW44,000,000
- March: (50% * Feb sales 55,000,000 * 98%) + (30% * Jan sales 50,000,000) + (15% * Dec sales 45,000,000) = 26,950,000 + 15,000,000 + 6,750,000 = FRW48,700,000

- Workings: Payments to suppliers (60% of the previous month's sales, paid one month in arrears)
- January (based on December purchases): 60% * 45,000,000 = FRW27,000,000
- February (based on January purchases): 60% * 50,000,000 = FRW30,000,000
- March (based on February purchases): 60% * 55,000,000 = FRW33,000,000
- Working
- loan repayment in March: FRW4,000,000 capital + (1% * FRW20,000,000 outstanding balance) FRW200,000 interest = FRW4,200,000

Note: Depreciation of FRW2,000,000 per month is not a cash flow and must be excluded from the cash budget entirely.

Details	Jan 2025 (FRW)	Feb 2025 (FRW)	Mar 2025 (FRW)
Receipts from receivables	39,300,000	44,000,000	48,700,000
Loan received	-	20,000,000	-
Total receipts	39,300,000	64,000,000	48,700,000
Payments to suppliers	27,000,000	30,000,000	33,000,000
Running expenses	6,000,000	6,000,000	6,000,000

Capital expenditure (delivery van instalments)	9,000,000	-	9,000,000
Loan repayment (capital + interest)	-	-	4,200,000
Total payments	42,000,000	36,000,000	52,200,000
Net cash flow for the month	(2,700,000)	28,000,000	(3,500,000)
Opening balance	12,000,000	9,300,000	37,300,000
Closing balance	9,300,000	37,300,000	33,800,000

b) Two actions in response to a cash shortfall

- Negotiate a short-term overdraft or other short-term financing facility with the bank. This provides immediate access to funds to cover the shortfall without disrupting the company's longer-term financing or investment plans.
- Improve the timing of cash flows, for example by encouraging customers to pay more promptly (through discounts for early settlement, as already used in this scenario) or by negotiating longer credit terms with suppliers. This reduces the gap between cash outflows and inflows without requiring any additional borrowing.

QUESTION 15

Marking Guide

QN	Description	Marks
a)	1 mark for a well calculated summation of X	1
	1 mark for a well calculated summation of Y	1
	1 mark for a well calculated summation of XY	1
	1 mark for a well calculated summation of X^2	1
	2 marks for calculation of b	2
	2 marks for calculation of a	2
	2 marks for a well draft equation	2
b)	Well calculated total production for May	2
c)	1 mark for listing and 1 mark for explanation on both advantage and disadvantage	8
	Total marks awarded for question 15	20

Model Answers

a) Least squares method calculation

X (output)	Y (cost)	XY	X^2
80	340	27,200	6,4
100	390	39,000	10
120	430	51,600	14,4
110	410	45,100	12,1
90	350	31,500	8,1
$\Sigma X = 500$	$\Sigma Y = 1,920$	$\Sigma XY = 194,400$	$\Sigma X^2 = 51,000$

- n=5
- b = (nΣXY − ΣXΣY) ÷ (nΣX² − (ΣX) ²) = [(5 * 194,400) − (500 * 1,920)] ÷ [(5 * 51,000) − 500²] = 12,000 ÷ 5,000 = 2.4
- a = (ΣY ÷ n) − b (ΣX ÷ n) = 384 − (2.4 * 100) = 384 − 240 = 144
- Y = 144 + 2.4X
- where Y = total cost (FRW'000), X = output ('000 units). Fixed costs = FRW144,000; variable cost per unit = FRW2.40.

b) Forecast for May
Y = 144 + (2.4 * 105) = 144 + 252 = 396
Expected total cost for May = FRW396,000.

c) **Participative (bottom-up) budgeting: advantages and disadvantages**

Advantages of a participative approach:
1. The budget is based on the production supervisor's detailed knowledge of the resource and its associated costs, for example, how casual labour availability and potato spoilage rates actually behave during the season, which senior management may not fully appreciate from head office.
2. The supervisor's motivation to achieve a budget they were involved in setting should be higher, and their commitment to the wider expansion plan is likely to increase, since they will feel some ownership over the targets rather than having them imposed.

Disadvantages of a participative approach:
1. The budgeting process will take more time and involve more personnel, since it requires negotiation between the supervisor and the budget committee, a genuine cost to Hols Company if the expansion is time-sensitive.
2. The supervisor may be tempted to introduce budgetary slack (for example, deliberately understating achievable output or overstating cost requirements) to make the eventual budget easier to achieve, which could undermine the reliability of the budget as a planning tool for the expansion.

END OF MARKING GUIDE AND MODEL ANSWERS