

MARCH 2023 PROFESSIONAL EXAMINATIONS
INTRODUCTION TO MANAGEMENT ACCOUNTING (PAPER 1.4)
CHIEF EXAMINER'S REPORT, QUESTIONS AND MARKING SCHEME

STANDARD OF THE PAPER

The paper covered all relevant topics of the syllabus and the questions were standard and comparable to other accountancy examining bodies. It was also found that marks allocated to questions were commensurate with the amount of work and time required.

PERFORMANCE OF THE CANDIDATES

The general performance of the candidates was average with the reasonable number of passes. Many candidates answered Question 3 and 4 very well contributing significantly to the reasonable number of passes. High performers were very few and spread across all centres. Low performers were also spread in all centres but certain centres registered more low performers than the others.

There was an indication that the candidates did not prepare adequately for the paper because they either could not attempt or answer Question 1 b) where linear equation should be applied in determining the selling price per loaf. In Question 4 b) the candidates were required to compute the basic pay which including overtime premium, and it was unfortunate that a significant number of candidates could not compute it.

NOTABLE STRENGTH AND WEAKNESSES OF CANDIDATES

The strong performance of few candidates depended on the volume of knowledge and skill in approaching specific questions like budgeting in Question 2, the theory sub-question in Question 3 and standard costing and labour in Question 4). All of the strong performers exhibited accuracy, precision and better understanding of these areas.

Strong performers really and adequately understood the costing methods and principles; develop the skills in applying the costing principles.

Majority of candidates did not adequately understand the costing principles required very well to enable them successfully write the exams. Most candidates did not take adequate time and effort to understand the requirements of the questions and therefore did not do well in some questions like budgeting, computation of overtime wage payments, application of multiplicative model in seasonal variation and the use of high or low method in determining fixed and variable costs.

QUESTION ONE

Mootomoto Bakery produces bread that is sold by agents within the Kumasi Metropolis. For every batch of bread, 15 bags of flour are used. Below are details of the cost of processing a batch of bread:

i) Direct materials:

Flour: 15 bags at GH¢220 per bag.

Sugar: 10 kilograms at GH¢15 per kilogram

Margarine: 20 kilograms at GH¢25 per kilogram

Egg: 1 crate at GH¢30 per crate

Other direct materials: GH¢550

ii) Direct expenses: GH¢650.

iii) Direct Labour per batch: 20 contract workers, each works for 6 hours to be paid GH¢6 per hour.

iv) Fixed overheads: The details of monthly production overheads which are absorbed per number of bags of flour produced are given below.

	GH¢
Salaries	32,000
Depreciation	8,000
Light and power	15,000
Rent and rates	7,500
Sanitation	5,500
Office expenses	12,000

It is estimated that 2,500 bags of flour will be baked in a month.

v) Administrative expenses are estimated at 10% of production cost.

vi) Commission on sales and distribution expenses are 8% of the selling price.

Required:

a) Calculate the production cost of a loaf of bread if each bag yields 120 loaves. **(12 marks)**

b) Calculate the selling price per loaf if profit is 14% of selling price. **(8 marks)**

(Total: 20 marks)

QUESTION TWO

Naa Sei enterprise wishes to prepare his functional budgets for the year 2023. The following information has been provided.

Sales Year	Quarter	Units
2023	1	1,200
	2	1,500
	3	2,000
	4	1,800
2024	1	2,200
	2	2,300

The projected selling price is GH¢15 for the first two quarters and this will increase by 10% in the third quarter. There will be no further price increase.

Inventory policy

- i) Finished Goods: The company plans to keep 10% of the following quarter's sales quantity. The opening inventory of finished goods is 120 units.
- ii) Direct Materials: Only one material is used in production. 5 kilograms of the material are required for the production of a unit of a product. Closing inventory is expected to be 20% of the following quarter's requirement. The cost of material is expected to be GH¢2 per kilogram.

Required:

Prepare the following functional budgets for each of the four quarters in 2023.

- a) Sales **(4 marks)**
- b) Production **(6 marks)**
- c) Direct material purchases in value **(10 marks)**

(Total: 20 marks)

QUESTION THREE

- a) Management accounting systems obtains information from both internal and external sources. Cost accounting system is one major source of management accounting information and such information is only useful to managers if it possesses certain qualities.

Required:

In reference to the statement above, explain **FIVE (5)** qualities of management accounting information. **(10 marks)**

- b) Explain the following briefly:
- i) Cost center **(2.5 marks)**
 - ii) Profit center **(2.5 marks)**
- c) Explain **TWO (2)** differences between a marginal costing system and an absorption costing system. **(5 marks)**

(Total: 20 marks)

QUESTION FOUR

- a) Employees may be paid either using piece rate or hourly rate.

Required:

In reference to the statement above, state **THREE (3)** tasks/jobs that;

- i) Piece rate may be used. **(3 marks)**
 - ii) Hourly rate may be used. **(3 marks)**
- b) Krenkren enterprise uses the hourly rate to pay her employees. The current rate is GH¢6 per hour. However, employees are paid 1.5 times for each overtime hour worked. Each employee is to work a minimum of 40 hours a week without a guaranteed payment. Any extra hour will attract overtime rate.

Extract from the time sheet for a week has been provided below:

Name	Staff Number	Hours worked
Kwame Sarfo	H 1356	56
John Addae	H 3456	38
Thomas Appia	F 2254	48
Rose Danso	F 8645	50

Required:

Calculate the basic pay for each of the staff. **(9 marks)**

- c) The following standard costs apply to the manufacture of a product by Pontir Ltd:
- Standard weight to produce one unit **12 kgs**
 - Standard price per kg **GH¢9**
 - Standard hours to produce one unit **10**
 - Standard rate per hour **GH¢4**

Actual production and costs for one accounting period were:

Material used	3,770 kgs
Material cost	GH¢35,815
Hours worked	2,755
Wages paid	GH¢11,571

The actual output was 290 units.

Required:

Calculate relevant material and labour cost variances, and present these in a format suitable for presentation to the management of Pontir Ltd. **(5 marks)**

(Total: 20 marks)

QUESTION FIVE

- a) "Cost estimation techniques play an important role in budget preparation".

Required:

Explain the statement above.

(3 marks)

- b) Obsaw Ltd is in the process of preparing budgets for the year 2021. Based on past experience, the following trend equation has been developed in the year 2019 for the estimation of quarterly sales:

$$S = 21,900 + 900Q$$

Where, S = quarterly sales in units

Q = time period (Quarter I of year 2019 is time period 1)

The following set of seasonal variation index values has been derived using a multiplicative model, based on year 2019 actual sales:

Quarter of the calendar year	Q1	Q2	Q3	Q4
Seasonality	-30%	-10%	+30%	+10%

The management expects that the above trend and seasonal effect will continue until year 2023.

The company's policy is to maintain a finished goods inventory of 20% of the demand for the following month. Monthly sales in each quarter are evenly distributed.

Required:

- i) Prepare the quarterly sales budget (in units) for the calendar year 2021. **(4 marks)**
 ii) Prepare the quarterly production budget (in units) for the calendar year 2021. **(3 marks)**
- c) Obsaw Ltd recorded the highest and the lowest production overheads (POHs) during the year 2020 as follows:

	Production (units)	POHs (GH¢ million)
Highest	37,000	22.40
Lowest	18,000	18.60

POHs are expected to increase by 10% per year and fixed production overheads are absorbed to products based on the budgeted production.

Required:

- i) Using the high-low method, prepare the quarterly variable production overheads budget for the year 2021. (Use the production budget in b) ii) above.) **(3 marks)**
- ii) Calculate the fixed production overheads absorption rate per unit for the year 2021. **(2 marks)**

- d) Explain how standard costs for material and labour might be compiled. **(5 marks)**

(Total: 20 marks)

SUGGESTED SOLUTION

QUESTION ONE

a) Calculation of cost of a loaf of bread;

	GH¢
Direct materials;	
Flour (15×220)	3,300 (0.5)
Sugar (10×15)	150 (0.5)
Margarine (20×25)	500 (0.5)
Eggs (1×30)	<u>30 (0.5)</u>
	3,980
Other direct mat.	550 (0.5)
Direct expenses	650 (0.5)
Direct labour (20×6×6)	720 (1.0)
Fixed overheads (32×15)	<u>480 (3.0)</u>
Total production cost	6,380 (2.0)
Admin cost (10% of cost)	<u>638</u>
Cost before sellers' margin	7,018

Production cost per loaf = GH¢6380 / (1800) = **GH¢ 3.54 (3)**

(12 marks)

b) Selling price per loaf

Let x represent the sales; (1)

$$7018 + 0.08x + 0.14x = x \quad (2)$$

$$7018 + 0.22x = x$$

$$7018 = 0.78x$$

$$7018 \div 0.78 = x$$

$$8997.436 = x \quad (3)$$

Selling price per loaf = Total sales value ÷ no. of loaves

$$= 8997.436 \div 1800 = \mathbf{GH¢5 (2)}$$

(8 marks)

Workings:

calculation of overhead absorption rate:

Total overheads	GH¢80,000
No. of bags/ week	2,500
	= GH¢32 per bag.

Number of loafs 15 bags×120 = 1,800

(Total: 20 marks)

EXAMINER'S COMMENTS

This question was in two parts. The a) part was well answered by of the candidates. Most candidates did not include direct labour and fixed overheads in the calculation of the total production costs perhaps because they found the calculation not

straightforward and as such could not earn full marks for the calculation of the production costs of a loaf of bread. Most candidates could not calculate the selling price per loaf in the b) part. They could not state an equation to do the calculation by including the additional information given, to determine the selling price per loaf. Generally performance on this question was below average.

QUESTION TWO

a) Sales budget

Quarter	1	2	3	4
Quantity	1,200	1,200	2,000	1,800
Selling price / unit(GH¢)	15	15	16.5	16.5
Revenue (GH¢)	18,000	22,500	33,000	29,700

(Marks are evenly spread using ticks = 4 marks)

b) Production budget

Quarter	1	2	3	4	5	6
Quantity	1,200	1,200	2,000	1,800	2,200	2,300
Add closing stock	150	200	180	220	230	
Less opening stock	120	150	200	180	220	
Production quantity	1,230	1,550	1,980	1,840	2,210	

(Marks are evenly spread using ticks = 6 marks)

c) Material purchases budget

Quarter	1	2	3	4	5
Production quantity	1,230	1,550	1,980	1,840	2,210
Requirement /unit	5	5	5	5	5
Total requirement	6,150	7,750	9,900	9,200	11,050
Add closing stock	1,550	1,980	1,840	2,210	
Less opening stock	1,230	1,550	1,980	1,840	
Requirement	6,470	8,180	9,760	9,570	
Selling price/unit GH¢	2	2	2	2	
Cost of mats. (GH¢)	12,940	16,360	19,520	19,140	

(Marks are evenly spread using ticks = 10 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

The a) part of the question on sales budget was well handled by most of candidates as it was quite simple. Sub-question b) on the production budget was challenging to some candidates as they could not determine the closing and opening stocks based on the information given. Given the deficiencies of most candidates with answers from

the b) part, the answers for the c) part were all wrong. Overall, some candidates understood the question and answered it appropriately; however some showed poor knowledge of budgeting.

QUESTION THREE

a) Qualities of cost and management information:

Relevance. Information should be timely and bear on the decision-making process by possessing predictive or confirmatory (feedback) value.

Faithful representation. Information must be honestly presented, complete, neutral, and free from material error and misstatement.

Comparability. Even though different companies may use different accounting methods, there is still sufficient basis for valid comparison.

Consistency. Deviations in measured outcomes from period to period should be the result of deviations in underlying performance (not accounting quirks).

Verifiability. Different knowledgeable and independent observers reach similar conclusions.

Timeliness. Cost and revenue information not readily available to the organization at the right time for decision making is of no use. Information must flow to the decision maker at the right time and at the right place so that it can be of use to the decision maker.

(Any 5 points @ 2 marks each = 10 marks)

b)

i) **Cost center:** This is a segment of the organization that has the authority to incur and control cost. Expense center is a responsibility center incurring only expense items and producing no direct revenue from the sale of goods or services. An example of expense centers are service centers, thus the maintenance department and accounting department of an organization. (2.5 marks)

ii) **Profit center:** Profit center is a responsibility center having both revenues and expenses objectives because segmental earnings equal segmental revenues minus related expenses, therefore, the manager must be able to control both of these categories of revenue and cost. (2.5 marks)

c) The following are the major differences between marginal costing and absorption costing:

- The costing method in which variable cost is apportioned exclusively, to the products is known as Marginal Costing. Absorption Costing is a costing system in which all the costs are absorbed and apportioned to products.
- In Marginal Costing, Product related costs will include only variable cost while in the case of Absorption costing, fixed cost is also included in product related cost apart from variable cost.
- Marginal Costing divides overheads into two broad categories, i.e. Fixed Overheads and Variable Overheads. Look at the other term Absorption costing, which classifies overheads in the following three categories Production, Administration and Selling & Distribution.
- In marginal costing profit can be ascertained through the help of Profit Volume Ratio $[(\text{Contribution} / \text{Sales}) * 100]$. On the other hand, Net Profit shows the profit in case of Absorption Costing.
- In Marginal Costing variances in the opening and closing stock will not influence the per unit cost. Unlike Absorption Costing, where the variances between the stock at the beginning and the end will show its effect by increasing/decreasing per unit cost.
- In marginal costing, the cost data is presented to outline total cost of each product. On the contrary, in absorption costing, the cost data is presented in traditional way, net profit of each product is ascertained after deducting fixed cost along with their variable cost.

(Any 2 points @ 2.5 marks each = 5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Most candidates scored high marks in this question than any other question in this paper mainly because of its qualitative nature. The a) part of the question required the candidates to explain the qualities of cost and management accounting information. Almost every candidate scored some marks in this sub-question with many scoring high marks.

On the other hand, the b) part of the question was quite challenging to some of the candidates. They were not able to offer explanation of cost and profit centers as related to responsibility accounting.

On the part c) some candidates were also not able to differentiate between marginal costing system and absorption costing system. Those who were able to answer this sub question even though had a fair idea of the differences between the two costing systems, they found it difficult to argue for the difference of one over the other. Overall, the performance of candidates was above average.

QUESTION FOUR

a)

i) Task that may use Piece rate as a mode payment;

- Molding of blocks.
- Production of pieces of furniture
- Sewing of dresses
- Baking of bread

(Any 3 points @ 1 mark each = 3 marks)

Task that may use Hourly rate as a mode of payment;

- Dressing of hair at the saloon
- Clerical work at the office
- Servicing of cars
- Maintenance of machines
- Repair of equipment.

(Any 3 points @ 1 mark each = 3 marks)

b) computation of basic pay:

Kwame Sarfo	H1356	$56 \times 6 = 336$	
	Premium	$16 \times 3 = \underline{48}$	
		384	(2.5 marks)

John Addae	H3456	$38 \times 6 = \mathbf{228}$	(1.5 marks)
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Thomas Appia	F2254	$48 \times 6 = 288$	
	Premium	$8 \times 3 = \underline{24}$	
		312	(2.5 marks)

Rose Danso	F8645	$50 \times 6 = 300$	
	Premium	$10 \times 3 = \underline{30}$	
		330	(2.5 marks)

c) **Summary of variances for one accounting period**

(F = Favourable; A = Adverse)

	GH¢
Materials:	
Price	1,885 A
Usage	<u>2,610 A</u>
Cost	4,495 A
Labour:	
Rate:	551 A
Efficiency	<u>580 F</u>
Cost	29 F

WORKINGS

	GH¢		GH¢
Direct materials	35,815		
Actual cos		}	
Actual quantity purchased/used at 3,770 × GH¢9	33,930		Price variance
Standard quantity for actual production at standard price 290 × 12 × GH¢9	31,320	}	
			Usage variance
Cost variance			<u>4,495 A</u>
 Labour			
Actual cos	11,571	}	
Actual quantity purchased/used at 2,755 × GH¢4	11,020		Rate variance
Standard quantity for actual production at standard price 290 × 10 × GH¢4	11,600	}	
			Efficiency variance
Cost variance			<u>29 F</u>
			(5 marks)

Assumptions:

- Quantity of material purchased = Quantity used.
- Actual hours paid for = Actual hours worked.

(Total: 20 marks)

EXAMINER'S COMMENTS

There were three sub questions in the question. The part a) expected candidates to state tasks/jobs that uses piece rate or hourly rate. Most candidates were able to offer some tasks and jobs in that regard.

In the b), part candidates interestingly used varied approaches to determine the basic pay of each of the staff given in the question. Unfortunately, many of the candidates could not distinguish between the direct and indirect costs and as such only a handful of candidates were able to get full marks for their answers. Even though quiet a number of the candidates identified the indirect for those who performed above the normal hours of 40 hours, many could not show very clearly and appropriately the indirect hours for those who performed above it. A few candidates scored zero in this sub question.

The sub question c) on standard costing was also well answered by most candidates because it was quite straightforward. Generally, the candidates scored above average marks in this question.

QUESTION FIVE

- a) Cost estimation involving forecasting a future cost relating to a process based on past information, by techniques such as High-Low Method, Least-square method, engineering method etc. Budgets are prepared by organizations for a future period. Therefore, the costs relating to those future periods will have to be calculated based on a cost estimation technique. **(3 marks)**

b)

i) $S = 21,900 + 900Q$

2021-01 Quarter = 9th time period

2021-02 Quarter = 10th time period

2021-03 Quarter = 11th time period

2021-04 Quarter = 12th time period

Accordingly	2021	2021	2021	2021	2022
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1
Tend	30,000	30,900	31,800	32,700	33,600
Seasonal index	0.70	0.90	1.30	1.10	0.70
Sales (units)	21,000	27,810	41,340	35,970	23,520

(Marks are evenly spread using ticks = 4 marks)

ii)

Production Budget (units)	2021	2021	2021	2021	2022
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1
Sales	21,000	27,810	41,340	35,970	23,520
- Opening FG	(1,400)	(1,854)	(2,756)	(2,398)	
+ Closing FG	1,854	2,756	2,398	1,568	
Production	21,454	28,712	40,982	35,140	

(Marks are evenly spread using ticks = 3 marks)

c)

- i) Using high-low method

	Output	POHs (GH¢'000)
Highest	37,000	22,400
Lowest	18,000	18,600
Difference	19,000	3,800

Variable overheads

GH¢200 per unit

Increase of 10% (for 2021)

GH¢220 per unit

	2021	2021	2021	2021
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Variable overhead budget (GH¢)	4,719,880	6,316,640	9,016,040	7,730,800

(Marks are evenly spread = 3 marks)

ii) Fixed production overheads [18,600,000 – (18,000 × 200)] =	GH¢15,000,000
Increase of 10% for 2021	= GH¢16,500,000
Total production for 2021(Units)	126,288
FPOHs absorption rate per unit for 2021	= GH¢130.65

(2 marks)

d) To compile standard costs it is necessary to establish standards i.e. planned amounts for each of the following:

Material

- **Price** is established with the assistance of the buying department; it is necessary to take account of quantity discounts and price increases.
- **Quantity** (including an allowance for wastage) should be available from the production department.
- **Quality/type.** This is closely linked to quantity and design of the product and may involve a decision by the production department as to which material is most suitable.

Labour

It is first necessary to identify the tasks that are to be carried out on the product.

Then for each tasks the following information is needed:

- level of skill/grade of worker needed
- time allowed – it may be necessary to use work study to decide on the production method and the associated standard time
- rate of pay – this will be dependent on the grade of employee and may be subject to a company-wide or national wage agreement.

(5 marks)

(Total: 20 marks)

EXAMINER’S COMMENTS

The question was in three parts. With the exception of the a) part which most candidates attempted and scored average marks, the b) and c) were poorly answered by most candidates. There was a gross display of lack of understanding of simple regression equation vis-à-vis forecasting tools.

The b) part of the question required the candidates to forecast sales using a specific model i.e., trend analysis and subsequently use the sales figures to prepare budgets. Majority of the candidates could not calculate the expected forecast sales. This specific topic still remains a difficult area and has seen poor performance over the last four sittings.

In sub-question c) some candidates applied the high-low method to determine the variable overhead. However, they were not able to prepare the quarterly variable production overheads budget. Also, most of the candidates could not calculate the fixed production overheads absorption rate per unit for the year.

With the sub-question d) many candidates could not detail standard costs for material and labour.

The question was clear but a little complicated and as such many candidates could not provide the required answers. Some of the candidates did not tackle this question at all. General performance was below average.

RECOMMENDATIONS

- Candidates should adequately prepare for the paper by ensuring that costing principles and methods are well understood.
- Candidates should ensure that they proficiently and capably know how costing principles and methods are applied.
- Candidates should take their time to understand the requirements of the questions before they start to answer them.
- Candidates should attempt first the questions that are relatively easier and straightforward to them to save time for the relatively difficult questions.