DECEMBER 2022 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. The questions were standard and comparable to other accountancy examining bodies. The paper adequately tested the candidates on more practical and current issues. Marks allocation to the questions followed the weighting in the syllabus and were commensurate with the amount of work and time required. There was an appropriate blend of theory and computation questions.

PERFORMANCE OF THE CANDIDATES

The general performance of the candidates was above average with the reasonable number of passes. The performance of the candidates was appreciably better than that of the previous examination in August 2022.

Many candidates could answer all questions with the exception of Question 2. Therefore, significant number of candidates passed the paper due to these questions. There were high performers spread across all centres. Low performers were also spread in all centres but certain centres registered more low performers than the others.

NOTABLE STRENGTHS AND WEAKNESSES OF CANDIDATES
Strengths

The strong performance of few candidates depended on the volume of knowledge and skill in approaching specific questions like operating statements under marginal and absorption costing methods, and reasons for the differences in the profits under each technique in Question 1, objectives of management accounting and qualities of management accounting information in Question 3 and calculation of cost of goods issued and closing inventory using weighted average cost. All of the strong performers exhibited accuracy, precision and better understanding of these areas.

Weaknesses

Question 2 was difficult for a reasonable number of candidates as many could not prepare the flexed budget in order to compare with the actual results to determine the variances. Many had challenges in flexing semi-variable overhead. In general, candidates did not adequately prepare for flexible budgeting.

Question 5 was a bit challenging for some candidates in identifying and using the high and low levels of activities in twin-desk in the calculation of the fixed cost and variable cost. Quite a number of them even openly deviated by using trend analysis when the question clearly specified that High-Low method should be used.
Reasonable candidates did not adequately understand the costing principles required very well to enable them successfully write the exams.

QUESTION ONE

a) Services are the non-physical, intangible parts of the Ghanaian economy, as opposed to goods, which we can touch or handle. Services, such as banking, education, medical treatment, and transportation make up a significant percentage of the economy.

Required:
State and explain **THREE (3)** features of a service. **(6 marks)**

b) Edwin Ltd manufactures aviation components and parts to order, and the following are budgeted overheads for the year based on normal activity levels:

Department	Budgeted overheard	Labour hours
Welding	12,000	3,000
Assembly	20,000	2,000

Selling and administration overheads are 25% of factory cost.

An order for 350 units of engine parts, Job X 01, incurred the following cost:
Material cost: GH¢24,000
Labour:

       Welding: 200 hours @ GH¢5 per hour

       Assembly: 400 hours @ GH¢2 per hour

       GH¢1,000 was paid for the hiring of a special x-ray machine for testing the welds.

Required:
Calculate;
i) The overheard absorption rate for each department. **(2 marks)**
ii) The production cost for Job X01. **(10 marks)**
iii) The total cost of Job X01. **(2 marks)**

(Total: 20 marks)

QUESTION TWO

a) A cash budget is an estimation of the cash flows of a business over a specific period of time. This budget is used to assess whether an entity has sufficient cash to continue operating over a given time frame. The cash budget provides a company with insight into its cash needs (and any surplus) and helps to determine an efficient allocation of cash.

Required:
Identify **THREE (3)** ways a business can address negative monthly cash balances in a cash budget. **(6 marks)**

b) The following budget report was prepared for the second quarter of 2022.

	Budget	Actual	Variance
Production Level	6,000 units	7,200 units	
Revenue and Cost:	**GH¢**	**GH¢**	**GH¢**
Sales	120,000	140,600	20,600 F
Direct Material	(30,000)	(39,600)	9,600 A
Direct Labour	(24,000)	(25,920)	1,920 A
Variable Overheads	(12,000)	(21,600)	9,600 A
Semi-Variable Overheads	(30,000)	(34,600)	4,600 A
Profit	**24,000**	**18,880**	**5,120 A**

The budgeted fixed overhead cost in the semi-variable overhead cost was GH¢12,000.

Required:
Prepare a budget report using the flexible budget for the second quarter of 2022. **(14 marks)**

(Total: 20 marks)

QUESTION THREE

a) Responsibility Accounting is a system of accounting in which costs are identified with persons who are primarily responsible for making decisions about the costs in question. Responsibility Accounting classifies cost under two main headings.

Required:
Explain the **TWO (2)** classifications of cost under Responsibility Accounting. **(2 marks)**

b) Full costing is an accounting method used to determine the complete end-to-end cost of producing products or services. Accountants use the term *full cost* to mean more than a product's manufacturing or production costs (including fixed manufacturing overhead).

Required:
Explain **FOUR (4)** reasons full cost of a product or service may be calculated. **(8 marks)**

c) Afram Ltd has just introduced a standard marginal costing system to assist in the planning and control of the production activities for its single product, Amino. The system became operational on 1 January 2022. The Functional Director responsible for cost and

management accounting had a discussion with the Production Manager and both have agreed on the following standard cost information to manufacture one unit of product, Amino.

Budgeted cost:
Direct materials: 4kg @ GH¢1.75per kg
Direct labour: 2 hours @ GH¢10 per hour
Variable overhead: 2 hours @ GH¢8.25 per hour.

Actual Results:
The actual results for January 2022 are as follows:
Sales 22,000 units yielding a total revenue of GH¢1,276,000
Production 23,000 units
Direct Materials 90,000 kgs at a cost of GH¢162,000
Direct labour 48,000 hours at a cost of GH¢576,000
Variable overhead GH¢350,000

The budgeted level of production and sales activity has been agreed with both production managers and sales staff at 24,000 units per month.

Required:
Calculate the following variances.
i) Direct Material Price
ii) Direct Material Usage
iii) Direct Labour Rate
iv) Direct Labour Efficiency
v) Variable Overhead Efficiency   **(10 marks)**

(Total: 20 marks)

QUESTION FOUR

a) Inventory refers to the goods and materials that a business holds for the ultimate goal of resale, production or utilisation in the near future. Inventory could be in the form of raw materials, finished goods, work in progress, among others.

Required:
Identify **FIVE (5)** reasons actual inventory counted may be different from the balance in the inventory records.   **(5 marks)**

b) The following transactions have been recorded at the stores of KK Nsia Ltd. for the month of January 2022 relating to material bx.

Date	Receipt	Issued
2/1	1,000 units at GH¢40 per unit	
5/1	600 units at GH¢45 per unit	
10/1		800 units
11/1		150 units
15/1	1,200 units at GH¢42 per unit	
18/1		850 units
24/1	900 units at GH¢48 per unit	

Required:
Prepare a statement clearly showing the closing balances at the end of each transaction using the FIFO method. **(10 marks)**

c) Management accounting reports aid optimum decision making when information considered in preparing the report is reliable. Information is created when data is presented in a way that has meaning to the recipient. To turn data into information, it must be processed and organised.

Required:
State **TWO (2)** sources from where information can be obtained for management accounting reports and give **ONE (1)** example of each source. **(3 marks)**

d) Explain the term *Investment center.* **(2 marks)**

(Total: 20 marks)

QUESTION FIVE

a) Total production costs each week in a production department have been measured for the past five weeks, as follows.

Week	Units produced	Total cost GH¢ 000
1	5	20
2	9	27
3	4	17
4	5	19
5	6	23

Required:
i) Use linear regression analysis to obtain an estimate of fixed costs per week and the variable cost of production per unit *(see formula table)*. **(8 marks)**
ii) Use your results to estimate total costs in a week when 8 units are produced. **(3 marks)**
iii) Explain why regression analysis method of separating cost is considered more accurate than high-low method. **(4 marks)**

b) The cost-volume-profit (CVP) analysis, also commonly known as breakeven analysis, looks to determine the breakeven point for different sales volumes and cost structures, which can be useful for managers making short-term business decisions. For CVP analysis to be effective, several assumptions are usually made.

Required:
State **FOUR (4)** assumptions underlying cost volume profit (CVP) analysis. **(5 marks)**

(Total: 20 marks)

FORMULA TABLE

1. $b = \dfrac{n \sum \times y - \sum \times \sum y}{n \sum \times^2 - (\sum \times)^2}$

2. $a = \dfrac{\sum y}{n} - \dfrac{b \sum \times}{n}$

SUGGESTED SOLUTION

QUESTION ONE

a) The features of a service include:
- **Simultaneity.** production and consumption of a service is simultaneous, for example, a haircut service is used immediately as the service provided ends.
- **Heterogeneity.** services provided can vary from one provider to the other though, the service in question is unique and similar in nature.
- **Intangibility.** unlike products that are tangible that you can feel and touch, service is not so tangible, you cannot feel and touch the presence of a service.
- **Perishability.** services are not perishable as does products hence you cannot buy and store services. Services cannot be made in advance and kept in store in anticipation of heavy demand for it, as there is, no work in progress in service organizations.

(Any 3 points @ 2 marks each = 6 marks)

b)
i) *AOR = Budgted overheard/budgted activity level*
Welding (GH¢12,000 /3,000hours) = GH¢4per hour
Assembly (GH¢20,000 /2,000 hours) = GH¢10per hour

(2 marks)

ii) Statement of production cost (Job X01)

Cost centre		GH¢	GH¢
Direct materials			24,000
Direct labour:			
Welding	(200 hrs.x GH¢5)	1,000	
Assembly	(400hrs. x GH¢2)	800	1,800
Direct expenses			1,000
Prime cost			26,800
Production overheads:			
Welding	(200hrs. x GH¢4)	800	
Assembly	(400hrs. x GH¢10)	4,000	4,800
Production cost			**31,600**

(marks are evenly spread using ticks = 10 marks)

iii) Computation of Total cost

	GH¢
Production cost	31,600
Selling & administration	7,900
Total cost	**39,500**

(2 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS
Candidates who attempt this question scored very high marks. At least 80% of the candidates who attempted scored 15 and above over 20. A few had difficulty in calculating the marginal cost per unit and the absorption cost per unit. Some candidates also had difficulties in calculating the closing inventory for both methods. A few also had challenges with the treatment of the fixed overhead cost.

QUESTION TWO

a) Managing shortfall in cash budget;
- Review sales terms to encourage early payment.
- Defer the purchase of fixed assets.
- Reschedule the payment of fixed assets bought
- Negotiate trade terms with suppliers for a longer credit period.
- Discount some short term investments.
- Inject additional cash.

(Any 3 points @ 2 marks each = 6 marks)

b) Preparation of flexible budget;

	Budget	Flexed Budget	Actual	Variance
Production(units)	6,000	7,200	7,200	1,200
	GH¢	GH¢	GH¢	GH¢
Sales	120,000	144,000	140,600	3,400A
Direct Material	(30,000)	(36,000)	(39,600)	3,600A
Direct Labour	(24,000)	(28,800)	(25,920)	2,880F
Variable o/h	(12,000)	(14,400)	(21,600)	7,200A
Semi-variable o/h	(30,000)	(33,600)	(34,600)	1,000A
Profit	**24,000**	**31,200**	**18,880**	**12,320A**

(Marks are evenly spread = 14 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS
Almost all candidates did not understand the question, the question was difficult both the production forecast and the purchase budget. About half the candidates who sat for the paper did not even attempt the question. Those who attempted only answered sub-question c) on Purposes of Budgeting. As for the a) and b), the candidates who attempted could only state only the sales and production figures. Some interchange the closing and opening inventory figures.

QUESTION THREE

a) Cost classification under Responsibility Accounting;
- **Controllable cost** is cost that the responsibility head can influence the size.
- **Uncontrollable cost** is cost that the responsibility head cannot influence the size.

(2 marks)

b) **Reasons for full cost**
- Overheads are expenses that are incurred in the production of goods and excluding them will understate the cost of production.
- Full cost will be needed in inventory valuation for external reporting purposes.
- Its provides details of cost for effective pricing.
- Calculating over and under absorbed overheads will help in cost control.
- By comparing the full cost with the selling price management will be in a position to know which products are sold at a loss.

(Any 4 points @ 2 marks each = 8 marks)

c) Calculation of variances

i) Material price variance
   AQ x (SP - AP)
   90,000 x (GH¢1.75 - GH¢1.8)
   GH¢4,500A

ii) Material usage variance
   SP x (SQ - AQ)
   GH¢1.75 x (92,000 kg - 90,000kg)
   GH¢3,500F
   SQ= 4kg x 23,000unit = 92,000kg

iii) Labour rate variance
   AH x (SR - AR)
   48,000hrs x (GH¢10 - GH¢12)
   GH¢96,000A
   AR= GH¢576,000 / 48,000hrs = GH¢12

iv) Labour efficiency variance
   SR x (SH - AH)
   GH¢10 x (46,000hrs - 48,000hrs)
   GH¢20,000A

v) Variable overheard efficiency variance
   SR x (SH - AH)
   GH¢8.25 x (46,000hrs - 48,000hrs)
   GH¢16,500A
   SH = 2hours x 23,000units = 46,000hrs

(2 marks for each variance = 10 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS
Question 3 was a standard question attempted by all candidates. Majority of those who attempted the question had a very high score out of twenty (20). The question was understood by the candidates and answered satisfactorily. The only challenge was characteristics of specific Order Costing.

QUESTION FOUR

a) **Causes of discrepancies in closing inventory**
- Theft by staff
- Evaporation in the case of liquids and gas
- Error in counting
- Casting errors
- Errors in recording.
- Over or understatement in stocks issued
- Wrong classifications/coding
- Error in counting at the time of receipt of stocks.

(Any 5 points @ 1 marks each = 5 marks)

b) **Statement of inventory movement (FIFO)**

Date	Receipt	Issued	Balance
2/1/2022	1,000 @ GH¢40		1,000 @ GH¢40 = <u>GH¢40,000</u> **GH¢40,000**
5/1/2022	600 @ GH¢45		1,000 @ GH¢40 = GH¢40,000 600 @ GH¢45 = <u>GH¢27,000</u> **GH¢67,000**
10/1/2022		800 @ GH¢40	200 @ GH¢40 = GH¢8,000 600 @ GH¢45 = <u>GH¢27,000</u> **GH¢35,000**
11/1/2022		150 @ GH¢40	50 @ GH¢40 = GH¢2,000 600 @ GH¢45 = <u>GH¢27,000</u> **GH¢29,000**
15/1/2022	1,200 @ GH¢42		50 @ GH¢40 = GH¢2,000 600 @ GH¢45 = GH¢27,000 1,200 @ GH¢42 = <u>GH¢50,400</u> **GH¢79,400**
18/1/2022		50 @ GH¢40 600 @ GH¢45 200 @ GH¢42	1,000 @ GH¢42 = <u>GH¢42,000</u> **GH¢42,000**
24/1/2022	900 @ GH¢48		1,000 @ GH¢42 = GH¢42,000 900 @ GH¢48 = <u>GH¢43,200</u> **GH¢85,200**

(Marks are evenly spread using ticks = 10 marks)

c) Sources of management information;
Internal and external **(2 marks)**

Examples
- Internal- ledger books, invoices, budget statements.
- External- internet, journals, print media, social media, reports from regulatory bodies. **(1 marks)**

d) **An investment centers** is a segment of an organization that has the authority to invest resources of the organization, incur cost and to generate sufficient revenue to pay off the investment in assets. When a firm evaluates an investment center, it looks at the rate of return as measured by (ROI and RI) that it can earn on its investment. **(2 marks)**

(Total: 20 marks)

EXAMINER'S COMMENTS
This question was another equally attempted question by almost all candidates. Candidates who attempted it did very well, showing the movement in inventory as well as the closing inventory in both Units and value. The b) part of the question on causes of material Cost variance and Labour cost variance was also fairly answered.

QUESTION FIVE

a)

i) WORKINGS

Output Units	Total cost GH¢ 000		
X	y	$\sum x^2$	$\sum xy$
5	20	25	100
9	27	81	243
4	17	16	68
5	19	25	95
6	23	36	138
29	106	183	644
$= \sum x$	$= \sum y$	$= \sum x^2$	$= \sum xy$

There are five pairs of data, so n = 5.

$b = \dfrac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$

$b = \dfrac{5\,(644) - (29)(106)}{5\,(183) - (29)^2} = \dfrac{3,220 - 3,074}{915 - 841} = \dfrac{146}{74}$

b (in GH¢ 000) = 1.97

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

$a = \dfrac{106}{5} - \dfrac{1.97\,(29)}{5} = 21.2 - 11.4$

a (in GH¢ 000) = 9.8

The estimate of monthly fixed costs and the variable cost per unit is therefore:
y = 9,800 + 1,970x.

(marks are evenly spread using ticks = 8 marks)

ii) When output is expected to be 8 units, the expected total costs will be:

	GH¢
Fixed	9,800
Variable (8 x GH¢ 1,970)	15,760
Total costs	**25,560**

(3 marks)

iii) Regression analysis is more accurate than the high-low method because the regression equation estimates costs using information from ALL observations whereas the high-low method uses only TWO observations. Measures the difference between actual cost and estimated cost for each observation.

(4 marks)

b) assumptions underlying breakeven:
- Cost can be classified into fixed and variable elements only.
- Variable cost may vary proportionately with the level of activity attained.
- Activity is the only factor that drives cost of production.

- Selling price of the product remains constant.
- Stock levels do not change with activity level.
- Level of technology remains constant.

(Any 4 points @ 1.25 marks each = 5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Even though question five (5) looked a bit easy in the eyes of the examiner, some candidates had difficulties calculating the total Cost and Profit. 40% of the candidates who attempted it had the understanding of calculating the profit equation $y=5600+6x$. Section B on benefits of standard question was fairly answered by the candidates.

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 relatively easier and straight-forward to them