NOVEMBER 2021 PROFESSIONAL EXAMINATION
INTRODUCTION TO MANAGEMENT ACCOUNTING (PAPER 1.4)
CHIEF EXAMINER'S REPORT, QUESTIONS & MARKING SCHEME

STANDARD OF THE PAPER

The paper covered all pertinent topics of the syllabus. The questions met the required standards and are comparable to other Professional Qualifying Examinations. The marks allocated to the questions were in line with the weightings in the syllabus and were fair. In addition, the marks allocated to the questions were proportionate to the amount of work and time required for the paper.

PERFORMANCE OF CANDIDATES

The general performance of the candidates in this sitting was average, with a reasonable number of candidates passing. Fair marks were recorded across all the questions in some cases, and this was characteristic of a significant number of candidates who passed. High performers were very few and spread across all centres. Low performers were also spread across centres, but certain centres registered more low performers than others.

No evidence was found to indicate that there has been copying or cheating at any of the examination centres. However, there was a hint that candidates who sat for the exams did not prepare satisfactorily for the paper.

NOTABLE STRENGTHS & WEAKNESSES OF CANDIDATES

The high and average performance of some of the candidates indicates that they had the knowledge and skill in approaching specific questions on CVP analysis, flexible budgeting and estimation of regressions from sales figures. Those who performed well-exhibited accuracy and precision with their answers to questions in these areas. Application of costing principles and methods were evident in the kind of answers these high and average performing candidates gave.

Many of the candidates did not adequately understand the costing principles and methods required to write the paper successfully. Many candidates did not have the requisite understanding and, as such, did not understand the requirements of the questions and therefore did not do well in questions on CVP analysis, flexible budgeting and estimation of regressions from sales figures. There seems to be poor preparation for the exams on the part of many candidates.

QUESTION ONE

a) Cost-Volume-Profit (CVP) analysis is a way to find out how changes in variable and fixed costs affect a firm's profit. Companies can use CVP to assess the impact on profit taking into consideration some assumptions.

Required:
State **FIVE (5)** assumptions underlying Cost-Volume-Profit Analysis. **(5 marks)**

b) The following data has been extracted from the operating records of Sharp Production Ltd:

Year	**Costs (GH¢)**	**Profit (GH¢)**
2019	402,000	54,000
2020	510,000	90,000

Required:

i) Calculate the contribution/sales ratio for the company. **(5 marks)**
ii) Compute the total fixed costs per annum. **(5 marks)**
iii) Compute the sales value required to breakeven. **(5 marks)**

(Total: 20 marks)

QUESTION TWO

a) Nam & Co. has prepared its fixed budget for the first quarter of the financial year. The following is the summary of the Income Statement:

		GH¢
Sales revenue		200,000
Cost of sales;		
Direct material	75,000	
Direct labour	50,000	
Variable overheads	25,000	
Semi variable overheads	35,000	
Total cost		(185,000)
Profit		**15,000**

Notes:

i) The fixed cost in the semi variable cost is GH¢ 10,000.
ii) The budgeted units were 10,000, but actual units for the quarter were 17,000

Required:
Prepare a Flexed Budget for the first quarter. **(15 marks)**

b) In the budget preparation process, the Budget Manual is an important element. This is because it guides everyone in the budget preparation value chain.

Required:
Identify **FIVE (5)** rules and instructions that a Budget Manual will set out. **(5 marks)**

(Total: 20 marks)

QUESTION THREE

a) Costs may be classified in various ways according to their nature and the information needs of management.

Required:
Explain the following pairs of costs:

i) Direct and Indirect Costs **(3 marks)**
ii) Fixed and Variable Costs **(3 marks)**
iii) Controllable and Non-controllable Costs **(3 marks)**
iv) Production and Non-production Costs **(3 marks)**
v) Relevant and Irrelevant costs **(3 marks)**

b) QQQ Ltd has been reporting using an absorption costing technique. However, at a management retreat attended by the Cost and Management Accountant, they discussed the information usefulness of marginal costing reports for short term decision making extensively.

Required:
Outline **FIVE (5)** advantages of a marginal costing system of reporting compared to absorption costing system for consideration by the management of QQQ Ltd.

(5 marks)

(Total: 20 marks)

QUESTION FOUR

a) Asase Aban Ltd pays some of the employees on a time basis but is subject to a monthly minimum wage of GH¢800 as directed by the Government of Ghana.
For one of the months, the following data were extracted from the timesheet of the company.

SRN	Name of staff	Staff Number	Number of hours
1	Kwame Sarfo	K00324	262
2	Ajoa Mansa	A00225	240
3	Salomy Adiku	S00552	180
4	Joseph Asiedu	J00654	332
5	Thomas Tinge	T00724	204

The hourly rate was GH¢4.00, the minimum hours to be worked by each staff beyond which overtime can be paid is 224 per month. All overtime attract a premium of GH¢1.50 per hour.

Required:

i) Calculate the direct labour cost for the month. **(8 marks)**
ii) Calculate the total indirect labour cost for the month. **(2 marks)**

b) Most businesses overlook their actual inventory cost, but in reality, the inventory price is more than its purchase price. It is because it includes the cost of ordering, as well as the cost of storing and maintaining until sales happen. Therefore, for assessing inventory value, every business must consider carrying or holding cost and ordering cost, together with the purchase price.

Required:

i) State **TWO (2)** examples of inventory ordering costs. **(2 marks)**
ii) State **THREE (3)** examples of inventory holding costs. **(3 marks)**

c) Explain **TWO (2)** uses of standard costing. **(5 marks)**

(Total: 20 marks)

QUESTION FIVE

a) A large manufacturing company is investigating the cost of sickness amongst production workers who the company has employed for more than one year. The following regression equation, based on a random sample of 50 for such production workers, was derived for 2018;

y=15.6-1.2x

y represents the number of days absent in a year because of sickness and x represents the number of years' employment with the company.

Required:

i) Explain the meaning of each component of the regression equation. **(2 marks)**
ii) Predict the number of days of absence through sickness to be expected of an employee who has been with the company for eight years. **(2 marks)**
iii) Explain **TWO (2)** limitations or problems of using this equation in practice. **(4 marks)**

b) A statistician is carrying out an analysis of a company's production output. The output varies according to the year's season, and, from the data, she has calculated the following seasonal variations in units of production.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Year 1	-	-	+11.2	+23.5
Year 2	-9.8	-28.1	+12.5	+23.7
Year 3	-7.4	-26.3	+11.7	-

Required:

i) Calculate and explain the average quarterly variation for each quarter. **(5 marks)**

ii) If the trend output in the 4th Quarter of Year 3 is expected to be 10,536 units, what is the forecast output? **(2 marks)**

c) KK Ltd operates a standard absorption costing system and has provided the following costs data in relation to its prime product, Qwikpass:

Standard Cost Card:

		GH¢
Direct Material	4kg @ GH¢3/kg	12
Direct Labour	3hrs @GH¢5/hr	15
Variable Overheads	3hrs @GH¢3/hr	9
Fixed Overheads	3hrs @GH¢2	6
Total Cost per Unit		42
Budgeted Units	6,000	

Actual Results:

Units produced		6,400
Costs incurred:		**GH¢**
Direct Materials Purchased and used	32,000kg	144,000
Direct Labour	30,720hrs	199,680
Variable Overheads		138,240
Fixed Overheads		45,000
Total costs		526,920

Required:

Compute the following variance for KK Ltd for its product, Qwikpass:

i) Variable Overheads Expenditure Variance. **(1 mark)**

ii) Fixed Overheads Expenditure Variance. **(2 marks)**

iii) Fixed Overheads Volume Variance. **(2 marks)**

(Total: 20 marks)

SOLUTION TO QUESTIONS

QUESTION ONE

a) Assumptions underlying CVP Analysis

- That all costs can be conveniently segregated into fixed and variable elements.
- That total fixed costs will remain constant while variable costs vary proportionately with the level of activity.
- That the selling price per unit is given and will remain constant over the relevant range of activity.
- That all that is produced can be sold at the prevailing price.
- That the only factor affecting costs and revenues is volume of activity.
- That technology, production methods and efficiency remain unchanged.
- There are no inventory level changes, or that inventories are valued at marginal cost.
- There is no uncertainty.
- A single product or a constant product mix is produced and sold.

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

b) Workings

Year	Cost (GH¢)	Profit (GH¢)	Revenue (GH¢)
2019	402,000	54,000	456,000
2020	510,000	90,000	600,000

	Revenue GH¢	Cost GH¢
High	600,000	510,000
Low	456,000	402,000
Change	144,000	108,000

$$\uparrow \frac{Variable\ costs}{Sales} = \frac{Change\ in\ Total\ Costs}{Change\ in\ Sales} = \frac{GH¢108{,}000}{GH¢144{,}000} = 0.75$$

$$\uparrow \frac{Contribution}{Sales} = 1 - 0.75 = 0.25$$

i) $\frac{Contribution}{Sales} = 1 - \frac{Variable\ Costs}{Sales} = 1 - 0.75 = 25\%$

Alternatively:

$$\frac{Contribution}{Sales} = \frac{(90{,}000 - 54{,}000)}{(600{,}000 - 456{,}000)} = 25\%$$

(5 marks)

ii) Computation of Total Fixed Costs:

Year	Revenue GH¢	TC GH¢	TVC GH¢	TFC GH¢
2019	456,000	402,000	342,000	60,000
2020	600,000	510,000	450,000	60,000

Alternatively:
Using higher sales level
Contribution = 0.25 x GH¢ 600,000
= GH¢150,000
Profit = contribution – FC
GH¢ 90,000 = GH¢ 150,000 – FC
This imply, FC = GH¢ 60,000

(5 marks)

iii) Sales value required to break even

$$\frac{Fixed\ Cost}{\frac{C}{S}\ rate} = \frac{GH¢60{,}000}{0.25} = GH¢240{,}000$$

(5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

The question was on CVP analysis with two parts. The a) part was on the assumptions underlying CVP analysis. It was straightforward, and the average prepared candidates could state some of the assumptions underlying CVP analysis. However, a handful of candidates exhibited little understanding of the assumptions underlying CVP analysis.

On the b) part, most candidates struggled to do calculations on contribution to sales ratio and breakeven sales in CVP analysis. The candidates failed to use the high-low method to determine the change in costs and revenues so as to calculate the contribution. Alternative methods for the calculations were also misused by some candidates. Candidates' marks for the b) part was average. On the whole, candidates performed averagely to a fairly good standard question.

QUESTION TWO

a) Flexed Budget

	GH¢	**GH¢**
Sales (200,000/10,000 x17,000)		340,000
Cost of sales:		
Direct material (75,000/10,000 x17,000)	127,500	
Direct labour (50,000/10,000 x 17,000)	85,000	
Variable overheads (25,000/10,000 x17,000)	42,500	
Semi-variable overheads ((2.5x17,000)+10,000)	52,500	(307,500)
Profit		**32,500**

(15 marks evenly spread)

b) budget manual may set out the following;

- Key objectives

- Planning procedures
- Instructions about budget details
- Responsibilities for preparation of functional budgets
- Approval process
- Key budget factors

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

(Total: 20 marks)

EXAMINER'S COMMENTS

This was a standard question that was appropriate for the level. The question was in two parts. The a) part was poorly handled by most candidates even though it was pretty simple. The candidates were expected to prepare a flexed budget, but most could not put down relevant answers to the question. Many found it difficult to separate the semi-variable costs into variable and fixed costs. The candidates lacked understanding of the principles bothering on flexible budget preparation.

The b) part was tackled by almost every candidate. They offered some of the rules and instructions set out in a budget manual. However, very few candidates understood the question and answered it appropriately. The majority showed poor knowledge of the contents.

QUESTION THREE

a)

i) Direct and Indirect Costs

Direct costs

Direct costs can be directly identified with a specific cost unit or cost centre.

There are three main types of direct cost – direct material, direct labour and direct expenses. The direct costs associated with a shirt (cost unit) manufactured by a clothing company would be:

- Direct materials – cloth for making shirts
- Direct labour – the wages of the workers stitching the cloth to make the shirts
- Direct expenses – the royalties paid to a designer.

The total of direct costs is known as the prime cost.

Indirect costs

Indirect costs cannot be directly identified with a specific cost unit or cost centre.

The indirect costs associated with a shirt (cost unit) manufactured by a clothing company would be:

The total of indirect costs is known as overheads.

- Indirect materials include materials that cannot be traced to an individual item, for example, cleaning fluids for cleaning the machinery.
- Indirect labour – the cost of a supervisor who supervises the shirtmakers

- Indirect expenses – the cost of renting the factory where the shirts are manufactured.

(**3 marks)**

ii) Fixed and Variable Costs

Fixed costs

A fixed cost is a cost that is incurred for an accounting period and which, within certain activity levels, remains constant in total.

Variable costs

Variable costs vary in total in direct proportion with the level of activity. As activity levels increase, then total variable costs will also increase.

(**3 marks)**

iii) Controllable and Non-controllable Costs

Controllable costs

These are costs that can be influenced by a given level of managerial authority. That is, a designated level of managerial authority can control them as they are within the domain of the given managerial authority and responsibility.

Non-controllable costs

These are costs that a given level of managerial authority cannot influence. These costs are usually those that higher levels of managerial authority have determined and shared between and/or among lower levels of authority. Examples are shared head office overheads.

(**3 marks)**

iv) Production and Non-production Costs

Production costs

Production costs relate to the manufacture of a product or the provision of a service. These costs are found in the cost of sales section of the statement of profit or loss. Production costs, such as direct materials, direct labour, direct expenses and production overheads, are included in the valuation of inventory.

Non-production costs

Non-production costs are not directly associated with the production of the business's output. Non-production costs, such as administrative, selling, and finance costs, are charged to the statement of profit or loss as expenses for the period they are incurred. Therefore, non-production costs are not included in the valuation of inventory.

(**3 marks)**

v) Relevant and irrelevant costs

Relevant costs

These are costs that make a difference in decision making. That is, with or without them, a different decision will be arrived at. Such costs are generally incremental, futuristic in nature and involve cash outlays.

Irrelevant costs

These costs do not vary with a given decision under consideration. They, therefore, do not impact on the decision under consideration. They are usually sunk or past

costs that have already been incurred. Similarly, fixed costs that must be incurred whether or not a decision alternative is undertaken are irrelevant to that decision.

(**3 marks)**

b) Advantages of marginal costing over absorption costing

- It will discourage stock build-up.
- There is no under or over absorption of overheads (and hence no adjustment is required in the statement of profit or loss).
- Fixed costs are a period cost and are charged in full to the period under consideration.
- Marginal costing is useful in the short term decision-making process.
- It is simple to operate.
- Separating costs into fixed and variable will facilitate cost control

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

(Total: 20 marks)

EXAMINER'S COMMENTS

Most candidates scored high marks in this question than any other question in this diet. The reason was that the a) part of the question required the candidates to explain pairs of cost items. Those cost items found under 'costs and costs classification' basically form the basis of the course. Surprisingly a few fumbled at answering this question even though it was a past question.

On the other hand, the b) part of the question was quite challenging to some candidates. They could not offer the advantages of a marginal costing system of reporting over an absorption costing system. Those who could answer this sub-question even though they had a fair idea of the differences between the two costing systems found it difficult to argue for the advantages over the other.

QUESTION FOUR

a) Computation of direct and indirect labour cost

Name	Staff ID	Hours	DLC(GH¢)	ILC(GH¢)	Total (GH¢)
Kwame sarfo	K00324	262	1,048	57	1,105
Ajoa Mansa	A00225	240	960	24	984
Salomy Adiku	S00552	180	720	80	800
Joseph Asiedu	J00654	332	1,328	162	1,490
Thomas Tinge	T00724	204	816	-	816
Total			**4,872**	**323**	**5,195**

(10 marks)

b)

i) Examples of inventory ordering cost;

- The cost associated with selection of suppliers
- Processing of procurement; placing of advertisement for the supply of goods, tender documentation, meeting expenses.
- Informing supplies that have won bids, issuing purchase orders.

(Any 2 points @ 1 mark each = 2 marks)

ii) Examples of inventory holding cost.

- Rent of warehouse
- Electricity cost
- Insurance of stock
- Deterioration of stock
- Staff cost

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

c) Uses of standard costing

- to assign per unit costs to production to value inventory
- to control overhead spending
- to measure and evaluate the use of production capacity with respect to the incurrence of fixed overhead costs.

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

(Total: 20 marks)

EXAMINER'S COMMENTS

The question was in three parts. Part a) required candidates to calculate direct and indirect labour costs. Candidates used varied approaches to determine the direct labour cost for the month. Unfortunately, many of the candidates could not distinguish between the direct and indirect costs. As such, only a handful of candidates were able to get full marks for their answers. Even though quite a number of candidates identified the indirect hours for those who performed above the normal hours of 224 hours, many could not clearly and appropriately show the indirect hours for those who performed below it.

The b) was also poorly handled by candidates. Many candidates could not give examples of inventory ordering and holding costs. It was clear that the majority of the candidates do not know what to write for what constitutes inventory ordering costs

Sub-question c) on the uses of standard costing was also poorly answered. Many candidates could not explain the two uses of standard costing.

QUESTION FIVE

a)

i) We have a negative correlation here, as shown by the negative coefficient of x in the regression line. As the number of years employed with the company rises, the number of days absent in a year through sickness falls.
y=15.6-1.2x
The 15.6represents the number of days of absence through sickness that an employee with zero years' service is expected to suffer, so it is the number of days that an employee will need off through sickness in their first year of employment. The -1.2 represents the gradient of the regression line, meaning that for each extra year's service with the company, an employee will take 1.2 fewer days off sick per year.

y=15.6-(1.2*8)= 15.6-9.6 = 6days

(2 marks)

ii) An employee who has been with the company for eight years is expected to require six days of sick leave per year. (**2 marks)**

iii) Limitation and problems of using the equation in practice

- The regression line approach presupposes a linear relationship between the two variables: a sample of 50 workers has given us quite a strong correlation, but a strict linear relationship seems unlikely.
- A linear relationship may hold well within a small relevant range of data within which the equation may be useful in practice. But extrapolating outside the range will lead to serious inaccuracies. Thus the equation would predict that an employee with more than 15.3/1.2=13 years' service would have less than zero sick leave.
- If we use the equation to predict the future, we will use historical data to forecast the future, which is always risky.
- The regression line shows the expected number of days sick for a given employment period. But it is unlikely that all categories of workers will experience the same sickness pattern. The equation would be most useful if there were many employees all doing the same job in the same work conditions.

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

b)
i)

	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	TOTAL
Year 1			+11.2	+23.5	
Year 2	-9.8	-28.1	+12.5	+23.7	
Year 3	-7.4	-26.3	+11.7		
Average variation	-8.6	-27.2	+11.8	+23.6	-0.4
Adjust total					
Variation to nil	+0.1	+0.1	+0.1	+0.1	+0.4
Estimated seasonal variation	-8.5	-27.1	+11.9	+23.7	0.0

Seasonal variations are short-term fluctuations in recorded values, due to different circumstances which affect results at different times of the year, on different days of the week, at different times of day, or whatever. For example, sales of ice cream will be higher in summer than in winter.
In this data, the highest output can be expected to be in the winter and the lowest in the summer.

(5 marks)

ii) Forecast output = Trends + Seasonal variation
= 10,536 + 23.7
= **10,559.7 units**

(2 marks)

c) KK Ltd

i) Variable Overheads Expenditure Variance

	GH¢	
30,720 hours should have cost (30,720 x 3)	92,160	
But did cost	138,240	
Variance	46,080 A	**(1 mark)**

ii) Fixed Overheads Expenditure Variance

	GH¢
Budgeted Overheads (6,000 x GH¢6)	36,000
Actual Overheads	45,000

	9,000 A	**(2 marks)**

iii) Fixed Overheads Volume Variance

Budgeted production units	6,000	
Actual production units	6,400	
	400 F	
@ cost/unit	GH¢6	
	GH¢2,400 F	**(2 marks)**

(Total: 20 marks)

EXAMINER'S COMMENTS

The first part of question a) was in three parts i) ii) and iii). With the exception of the ii) which most candidates attempted and scored full marks, the i) and ii) were poorly answered by most candidates. In addition, there was a gross display of a lack of understanding of simple regression equation vis-à-vis its limitations.

The b) part of the question required the candidates to forecast sales using a specific model, i.e., trend analysis. However, some candidates could not calculate the expected forecast output. Some candidates scored average marks as candidates could not exhibit a good understanding of trend analysis. This area remains difficult and has seen poor performances over the last three sittings.

The c) part of the question was on standard costing. The question perhaps was not clear to the candidates, and as such many could not provide the required answers. As a result, many of them did not tackle the question at all.

CONCLUSION

There were no ambiguities in the questions. The overall performance of candidates was average, with some candidates not even attempting any of the questions at all. Most candidates were not prepared, especially for the qualitative questions. Those who attempted them scored low marks. However, most candidates attempted the quantitative questions and scored average marks.

RECOMMENDATIONS

- Candidates should understand costing principles and methods.
- Application of basic costing principles and methods is key for this exam. Therefore, candidates should ensure that they proficiently and competently know how to apply costing principles and methods to basic business problems/ situations.
- Understanding the requirements of the questions is part of the exams. Candidates should therefore take their time to understand the requirements of the questions before they start to answer them.
- Candidates must plan how to answer questions. Candidates should attempt first the questions that are relatively easier and straightforward to them.