APRIL 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 and the questions were standard and comparable to other accountancy examining bodies. Mark allocation to the questions followed the weighting in the syllabus. In general, appropriate marks were fairly allocated to the time and load required from the candidates to answer each question.

PERFORMANCE OF CANDIDATES

The general performance of the candidates was average with a reasonable number of passes. The following are the associated reasons:

- Most candidates answered Question 1 very well and a significant number of candidates passed the paper due to this question.
- Question 4 was also very well answered by candidates and this contributed to the significant number of candidates attaining 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 were no signs of copying at any centre.

There was an indication that candidates did not prepare adequately for the paper because most candidates could not attempt or answer Question 5 in addition to question 2b on the company's cash operating cycle, even though similar questions continue to appear from one examination to another.

NOTABLE STRENGTHS AND WEAKNESSES OF CANDIDATES

The strong performance of few candidates depended on the volume of knowledge and skill in approaching specific questions like apportionment of overhead costs of service centres to production centres, budgeting, preparation of operating statements under marginal and absorption costing methods, and forecasting. All of the strong performers exhibited accuracy, precision and better understanding of these areas.

Observed reasons for the strengths

Strong performers adequately understood the costing methods and principles and thus demonstrated skill in applying the costing principles.

Weaknesses demonstrated by candidates

Reasonable number of candidates did not adequately understand the costing principles required 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, specifically, cash operating cycle and calculation of number of batches, machine set ups per batch, total number of set ups and Budgeted cost per set up.

QUESTION ONE

The following information has been extracted from the records of a company for the half year ended 31 March 2021. A product, Capital Q, goes through two processes, X and Y:

Details relating to Process X for the period:	
Input units	5,000
Finished units transferred to Process Y	3,200
Closing WIP	840
Normal losses	10%

Normal losses have an estimated resale value of GH¢4 per unit.

Costs incurred during the period:

	GH¢
Direct materials	31,250
Direct labour	21,200
Overheads	17,325

Abnormal Losses and Closing WIP had the following degrees of completion at the end of the period:

Direct materials	100%
Direct labour	80%
Overheads	50%

Required:

Using the weighted average method:

a) Compute the cost per unit for each of the element of costs. **(5 marks)**
b) Compute the value of the complete units transferred to Process Y. **(5 marks)**
c) Compute the value of the closing WIP. **(5 marks)**
d) Prepare Process X Account for the period. **(5 marks)**

(Total: 20 marks)

QUESTION TWO

a) Dampare Ltd manufactures three products namely A, B and C. The information given below relates to the month of November, 2020.

	Product	**Quantity (Units)**	**Price/Unit (GH¢)**
Sales:	A	1200	80
	B	2400	96
	C	1800	112
Materials used in company's Products			
Material	MA	MB	MC
(Unit cost)	GH¢3	GH¢5	GH¢8
Quantity used in:	**MA (Units)**	**MB (Units)**	**MC (Units)**
Product A	5	3	1
Product B	4	4	3
Product C	3	2	2
Finished Stock	**Product A (Unit)**	**Product B (Unit)**	**Product C (Unit)**
Opening stock	1200	1800	600
Closing Stock	1320	1980	660
Material Stock	**MA (Units)**	**MB (Units)**	**MC (Units)**
Opening stock	31,200	24,000	14,400
Closing stock	37,440	28,800	17,280

Required:

Prepare the following functional budget for the month of November 2020 for:

i) Sales in quantity and value, including total value
ii) Production quantities
iii) Material usage in quantities
iv) Material purchases in quantities and value, including total value**.** **(15 marks)**

b) Principal budget factor is such an important factor in the budgetary control process. It is essential to identify the principal budget factor before the preparation of budgets.

Required:

i) Explain the term "***Principal budget factor***" as used in budgetary control. **(2 marks)**
ii) Identify **THREE (3)** examples of ***Principal budget factor*** from financial institution. **(3 marks)**

(Total: 20 marks)

QUESTION THREE

a) Frankadua Furniture Works located at Bomaa in the Ahafo Region has a rough estimate of the materials and labour cost of a set of living room furniture. It is expected that 8 cubic metres of timber, 6 cubic metres of foam and 12 square metres of fabric can be used. Glue, screws and other accessories will also cost GH¢80.

The Carpenters who will do the cutting, joining and finishing will use 35 hours. Since the company is fairly new, it will engage a tailor to sow the fabric to fit the sizes of the units of the chairs. For each set the tailor will charge GH¢150. Labour is paid at GH¢12 per hour plus a premium of GH¢5 per hour when the job requires more than 20 hours.

Timber is priced at GH¢25 per cubic metre, foam is GH¢20 per cubic metre while the fabric is GH¢15 per square metre. The Accountant has estimated overhead absorption rate of 20% on direct material cost.

Required:

i) Determine the prime cost of a set of living room furniture. **(10 marks)**
ii) Determine the full cost of a set of living room furniture. **(5 marks)**

b) Kempion Breweries Ltd has just commenced business in the alcoholic beverage sector of Ghana producing a local gin called Pitoo and is desirous of having a good grasp of its costs for product costing, valuation and pricing purposes.

Required:

State **FOUR (4)** features of a process costing system to be used by Kempion Breweries to arrive at the total cost of Pitoo. **(5 marks)**

(Total: 20 marks)

QUESTION FOUR

a) Most organisations use time as a basis to reward their employees, hence they pay their staff on time basis using clock-in devices. Employers are therefore likely to pay for attendance instead of tasks performed. Accountants believe that employees should be rewarded based on task, however, not all tasks can easily be rewarded on time basis.

Required:

i) State **THREE (3)** factors that should be considered when deciding to use time based reward system. **(6 marks)**
ii) State **THREE (3)** measures that can be put in place to ensure that employees do not only report for work but execute their tasks as required. **(6 marks)**

b) State **THREE (3)** challenges management may face in implementing group bonus schemes. **(3 marks)**

c) Standard costing among other advantages is used for ***performance measurement*** and ***control reporting***.

Required:
Explain how the above uses of standard costing are measured. **(5 marks)**

(Total: 20 marks)

QUESTION FIVE

a) Magawa Ltd operates a standard variables costing system and manufactures a single product called "Magic Touch".

The following quantities, costs and prices data have been extracted for the period just ended March 31, 2021 in respect of Magic Touch:

Standard cost card:		GH¢
Direct materials	15g at GH¢10/g	150
Direct labour	8 hours at GH¢6/hour	48
Variable overheads	8 hours at GH¢4/hour	32
Standard contribution		25
Standard selling price per unit		**255**

Budgeted production units	1,500

Actual results for the period ended March 31, 2021 were as follows:

Production and sales units	1,650
Selling price per unit	GH¢278
Direct materials used	23,760g
Direct materials costs	GH¢308,880
Direct labour hours worked	10,725
Direct labour costs	GH¢85,800
Variable overheads	GH¢68,000

Required:
Compute the following variances for Magawa Ltd for the period ended March 31, 2021:

i) Direct materials price variance. **(1 mark)**
ii) Direct materials usage variance. **(1 mark)**
iii) Direct labour rate variance. **(1 mark)**
iv) State **ONE (1)** possible reason for the material price variance calculated. **(1 mark)**
v) State **ONE (1)** possible reason for the labour rate variance calculated. **(1 mark)**

b) The Valuation Department of a large firm of surveyors wishes to develop a method of predicting its total costs in a period. The following past costs and activity levels have been recorded.

	Number of Valuations (V)	**Total Cost (TC) GH¢**
Period 1	420	82,200
Period 2	515	90,275
Period 3	425	82,900
Period 4	500	90,000

Required:

i) Derive a formula for the total cost model for a period. **(4 marks)**

ii) Evaluate the usefulness of the high low method. **(4 marks)**

c) The trend line on its own is not sufficient to make forecasts for the future. Estimates of the size of the 'seasonal' variation for each of the different seasons is needed. The seasonal variation is then used to adjust a forecast trend.

Required:

Explain **TWO (2)** models used to estimate seasonal variations.

(7 marks)

(Total: 20 marks)

SOLUTION TO QUESTIONS

QUESTION ONE

a) Computation of the cost per unit for each of the element of cost

Item	Complete Unit	+Closing WIP	+Ab. Loss	= TEU	TC	Cost/unit
					GH¢	**GH¢**
Materials	3,200	840	460	4,500	29,250	6.50
Labour	3,200	672	368	4,240	21,200	5.00
Overheads	3,200	420	230	3,850	17,325	4.50
						16.00

*GH¢29,250 = [31,250-(GH¢4x500)]

(5 marks)

b) Valuation of Complete Units
GH¢16 x 3,200 units = **GH¢51,200**

(5 marks)

c) Valuation of Closing WIP

		GH¢
Materials	(840 x GH¢6.50)	5,460
Labour	(672 x GH¢5.00)	3,360
Overheads	(420 x GH¢4.50)	1,890
		10,710

(5 marks)

d) **PROCESS X ACCOUNT**

	Units	Price GH¢	Amount GH¢		Units	Price GH¢	Amount GH¢
Materials	5,000		31,250	Nor. Loss	500		2,000
Labour			21,200	Transfer to Y	3,200		51,200
Overheads			17,325	Abnor. Loss	460		5,865
				WIP c/d	840		10,710
	5,000		**69,775**		**5,000**		**69,775**

(5 marks)

Valuation of Abnormal Loss

		GH¢
Materials	(460 x GH¢6.50)	2,990
Labour	(368 x GH¢5.00)	1,840
Overheads	(230 x GH¢4.50)	1,035
		5,865

(Total: 20 marks)

EXAMINER'S COMMENTS

The question was on Process costing analysis with four (4) parts which for a very long time hasn't been examined and it looks like a surprise question to almost all the candidates.

Candidates struggled to compute the abnormal loss which was needed to calculate the cost per unit of each element of cost. However, many were able to calculate the normal loss. Since the answer for the cost per unit was not accurately determined, candidates failed to correctly calculate the value of complete units transferred to process Y, the value of the closing WIP and prepare the process X account for the period. This question was the most poorly answered question in this paper. The average mark scored was not good.

Emphatically, the question was difficult to many candidates, about 95% of the candidates scored below 5 marks. Even though few candidates (2%) were able to score above 15 marks, the question was standard. The Computation of the cost per unit for each of the element of costs (Finished Goods, Work-in-Progress, Normal Loss, and Abnormal Loss and their various closing values) proved problematic.

QUESTION TWO

a)

i) Sales quantity and value budget

Product:	**A**	**B**	**C**	**Total**
Sales quantities	1200	2400	1800	
Selling prices	₵80	₵96	₵112	
Sales value	**₵96,000**	**₵230,400**	**₵201,600**	**₵528,000**

ii) Production quantity budget

Product:	**A**	**B**	**C**
Sales quantities	1200	2400	1800
Add closing stock	1320	1980	660
	2520	4380	2460
Less opening stock	1200	1800	600
Units to be produced	**1320**	**2580**	**1860**

iii) Material Usage Budget (quantities)

Production quantities		**Materials**				
	Unit per product	MA Total	Unit per product	MB Total	Unit per product	MC Total
A 1320	5	6,600	3	3,960	1	1,320
B 2580	4	10,320	4	10,320	3	7,740
C 1860	3	5,580	2	3,720	2	3,720

Usage in quantities		**22,500**		**18,000**		**12,780**

iv) Material Purchases Budget (quantities and value)

	MA	MB	MC	Total
Material usage	22,500	18,000	12,780	₡
Add Closing stock	37,440	28,800	17,280	
	59,940	46,800	30,060	
Less: opening stock	31,200	24,000	14,400	
Purchase in quantities	28,740	22,800	15,660	
Price per unit	¢3	¢5	¢8	
	¢86,220	**¢114,000**	**125,280**	**325,500**

(Marks are evenly spread = 15 marks)

b)

i) The **principal budget factor** is also known as the limiting factor or key factor. It is defined as the factor which at a particular time, or over a period, will limit the activities of an undertaking. The limiting factor is usually the level of demand for the products or services of the undertaking but it could be a shortage of one of the productive resources.

(2 marks)

ii) Examples of Principal budget factor from financial institution include:

- Skilled labour
- Level of ICT
- High interest rate
- Reserve ratios.

(3 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

The question 2 was on budgeting with two parts. Both parts were well handled by most of the candidates. The candidates were expected to prepare functional budgets for a manufacturing firm in part a) of the question. The candidates showed very good understanding of the principles bothering on budgeting. This question was the most well answered question in this paper. The average mark scored was very good. Few candidates however had some difficulties computing the production quantities and material usage in quantities. The question was a standard one and the performance was very good. The b) part was tackled by almost every candidate. About 90% of the candidates were able to offer some of the 'principal budget factor' as used in budgetary control. In the specific context of financial institutions, the examples solicited by the question yielded answers that are not specific to the financial institutions. Also few candidates did not attempt the question at all.

QUESTION THREE

a)

i) Prime cost of the set of furniture

		GH¢
Timber 8 cubic m. at GH¢ 25 per m3 (CUBE)	=	200
Foam 6 cubic m. at GH¢ 20 per m3	=	120
Fabric 12 sq. m at GH¢ 15 per m2	=	180
Total direct material cost	=	500
Direct labour cost 35 hours at GH¢12	=	420
Direct expenses	=	150
Prime cost	**=**	**1070**

(10 marks)

ii) full cost:

Prime cost	1,070
Overhead (20% of GH¢ 500)	100
	1,170

(5 marks)

a) Some features of process costing

- Products are produced in mass
- Production is usually done in sequential manner such that the output of one process becomes the input for a subsequent process
- Product costs per unit is obtained through averaging
- There are usually losses associated with process costing in the form of normal and sometimes abnormal losses.
- There is usually WIP in process coasting that require valuation
- Valuing Equivalent units of partly finished units may arise
- Valuing Joint and by-products may also arise in process costing.

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

(Total: 20 marks)

EXAMINER'S COMMENTS

The performance of candidates in respect of this question was average. The part a) of the question required candidates to determine prime cost of a set of living room furniture and subsequently determine the full cost of a set of living room furniture. Some candidates incorrectly included the cost of glue, screws and other accessories to the prime cost instead of considering them as part of overheads absorption. Candidates also struggled with computing the cost of direct labour because of the overtime premium of GH¢ 5 paid to labour for working for more than 20 hours, a reasonable number of the candidates wrongly included it in the direct labour cost. Other candidates failed to absorb overheads using the overhead absorbed rate giving by the question.

On the b) which was on features of process costing, the candidates were quite evasive with their answers and thereby failed to demonstrate clear understanding of process costing. Specifically, about 60% of the candidates were able to answer it well

QUESTION FOUR

a)

i) Factors to consider in deciding to use time based reward.

- Where output is difficult to quantify
- Where the job requires a lot of mental skills
- Where the tasks are performed by several individuals
- Where quality is more important than quantity.
- Accuracy is more important than speed.

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

ii) Measures to put in place to ensure people work

- Need for supervision
- Staff should be given additional tasks when one has been completed
- Provide incentive to high performers
- Ensure tasks performed are related so that anyone who delays will be exposed.

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

b) Challenges of implementing group bonus scheme

- Distribution amongst the group members can create problems.
- Difficult to identify high performers in the group
- Tasks may not be easily separable
- Lazy workers may unduly qualify
- May not motivate hard working employees.

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

c)

i) In relation to performance measurement, the difference between standard costs (expected costs) and actual costs can be measured as variances. Variances can be reported regularly to management, in order to identify areas of good performance or poor performance. **(2.5 marks)**

ii) In relation to control reporting, when differences between actual results and expected results (the budget and standard costs) are large, this could indicate that operational performance is not as it should be, and that the causes both the variance should be investigated. Management can therefore use variance reports to identify whether control measures might be needed, to improve poor performance or continue with good performance. **(2.5 marks)**

(Total: 20 marks)

EXAMINER'S COMMENTS

The question 4 was in two parts- part a) was time based reward system and group bonus schemes and part b) was on challenges of implementing group bonus scheme. Being a theory question the performance was average since most candidates were not adequately prepared for the question. Answers given were not appropriate whilst some candidates barely answered it.

Part c) was on *standard costing among other advantages is used for performance measurement and control reporting*. This section was also poorly answered as candidate could not explain how standard costing helps in performance measurement and control reporting.

QUESTION FIVE

a)

i) Material Price Variance: (SP – AP) AQ

(10-13) 23,760 = GH¢71,280A **(1 mark)**

ii) Material Usage Variance: (SQ – AQ) SP

(24,750 – 23,760) 10 = GH¢9,900F **(1 mark)**

iii) Direct Labour Rate Variance: (SR – AR) AH

(6 – 8) 10,725 = GH¢21,450A **(1 mark)**

iv) Reasons for material price variance

- Inflation
- Shortage of materials
- Increase in demand for a product etc

(Any 1 point @ 1 mark each = 1 mark)

v) Reasons for labour rate variance

- Increase in cost of living
- Idle time

(Any 1 point @ 1 mark each = 1 mark)

b)

i)

	Valuations (V)	**Total Cost (TC) GH¢**
Period 2	515	90,275
Period 1	420	82,200
Change due to variable cost	**95**	**8,075**

:. Variable cost per valuation= GH¢8,075/95 = GH¢85.

Period 2: Fixed cost = GH¢ 90,275 – (515* GH¢85)

= GH¢ 46,500

The total cost model can therefore be represented as **TC = GH¢ 46,500 + GH¢85V**.

(4 marks)

ii) The high-low method is a simple and easy to use method of estimating fixed and variable costs. However there are a number of problems with it:
The method ignores all cost information apart from at the highest and lowest volumes of activities and these may not be representative of costs at all levels of activity.
Inaccurate cost estimates may be produced as a result of the assumption of a constant relationship between costs and volume of activity
Estimates are based on historical information and conditions may have changed.

(4 marks)

b) There are two models used to estimate seasonal variation
   1. The additive model
   2. The proportional model

The additive model: this model assumes that seasonal variations above and below the trend line in each cycle adds up to zero. Seasonal variations below the trend line have a negative value and variations above the trend line have a positive value.
The seasonal variation for each season (or daily variation for each day) is estimated as follows, when the additive assumption is used:

- Calculate the difference between the moving average value and the actual historical figure for each time period.
- Group these seasonal variations into the different seasons of the year (days of the week, months or quarters of the year)
- Calculate the average of these seasonal variations for each season (or day; month; quarter)
- If the total seasonal variations for the cycle do not add up to zero the difference is spread evenly across each season (or day; month; quarter)
- This adjusted figure is the seasonal variation.

The proportional model: this model expresses the actual vale in each season as a proportion of the trend line value.
When a proportional model is used to calculate seasonal variations, rather than additive model, the seasonal variations for each time period are calculated by dividing the actual data by corresponding moving average or trend line value.
The sum of the proportions for each time period must add up to 1. This means that the total of the proportions quarterly data must sum to 4. If this not the case, the difference is spread evenly over each quarter.

(2 models @ 3.5 marks each = 7 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

The a) part of the question was also in five parts i)-v). Except for the i) on direct material price variance which most candidates attempted and scored full marks, the rest were poorly answered by most candidates. Some candidates who were able to compute the variances could not indicate the causes of the material price and labour rate variances. This confirmed the fact that most candidates did not understand basic standard costing principles. Candidates should pay attention to basic standard costing principles.

The b) part of the question required the candidates to derive a formula for the total cost model for a period. Most candidates were able to use the high-low method to derive the total cost model. But on the usefulness of the high-low method some of the candidates scored low marks as candidates could not exhibit great understanding of high-low method and its uses.

The c) part of the question required candidates to explain two (2) models used to estimate seasonal variations. The question was answered by almost every candidate, and many were able to provide the required answers.

RECOMMENDATION

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