NOVEMBER 2023 PROFESSIONAL EXAMINATIONS
MANAGEMENT ACCOUNTING (PAPER 2.2)
CHIEF EXAMINER'S REPORT, QUESTIONS AND MARKING SCHEME

INTRODUCTION

This report is focused on the evaluation of the management accounting paper written in the November 2023 professional examinations. The questions were fairly balanced in terms of spread over the syllabus and with respect to theory and practice. Specifically, areas examined included transfer pricing, benchmarking, budgeting and budgetary control, activity-based costing, variance analysis, investment appraisal, limiting factor decisions and beak-even analysis. Theory covered thirty-eight percent of the questions in the entire paper.

The overall performance was below expectation though the questions were not above the competence of an average candidate. Questions two, three, and four were fairly attempted but one and five posed some challenge to most of the candidates.

STANDARD OF THE PAPER

The standard was not different from previously administered papers. Almost all the areas in the syllabus were covered and marks were fairly allocated based on the weightings. The standard matched up with the level of the professional qualification since it offered opportunity for analysis and evaluation of business scenarios.

PERFORMANCE OF CANDIDATES

Performance of candidates was far below expectation compared with the July 2023 diet. Questions one and five were poorly attempted so candidates had to struggle to score the pass mark from the remaining three questions. The theory questions were quite straight forward and most candidates scored some good marks from them.
The poor performance was wide spread but the few who could fairly attempt questions one and five ended up scoring high marks in total. No signs of copying were observed. Generally, the questions were within the competence of an average candidate.

NOTABLE STRENGHTS AND WEAKNESSES

Most candidates performed well in the theory questions. Attempt at the Activity-based costing, and Accounting Rate of Return was not too bad but some candidates could not score appreciable marks. Fixed overhead variance was equally challenging to some candidates.

The candidates demonstrated insufficient knowledge in cost analysis in question one, besides fixing of transfer price under various business scenarios was a challenge. Again, application of production mix under marketing conditions was a problem. In question five, most candidates who attempted it could not go beyond the calculation of the contribution per acre for the crops.

QUESTION ONE

The Management Information System (MIS) division of KayCee Ltd provides consulting services to its clients as well as to other divisions within the group. Consultants always work in teams of two on every consulting day. Each consulting day is charged to external clients at GH¢750, which represents cost plus a 150% profit markup. The total cost per consulting day has been estimated to be 80% variable and 20% fixed.

The director of the Human Resources (HR) division of KayCee Ltd has requested the services of two teams of consultants from the MIS division on five days per week for a period of 48 weeks, and has suggested that she meets with the director of the MIS division in order to negotiate a transfer price. The director of the MIS division has responded by stating that he is aware of the limitations of using negotiated transfer prices and intends to charge the HR division GH¢750 per consulting day.

The MIS division always uses Internal video – conference equipment on all internal consultations which would reduce the variable costs by GH¢50 per consulting day.

Note: The conference equipment can only be used when providing internal consultations.

Required:

a) Calculate and discuss the transfer prices per consulting day at which the MIS division should provide consulting services to the HR division in order to ensure that the profit of KayCee Ltd is maximised in each of the following situations:

i) Every pair of consultants in the MIS division is 100% utilised during the required 48-week period in providing consulting services to external clients, i.e. there is no spare capacity.

ii) There is one team of consultants who, being free from other commitments, would be available to undertake the provision of services to the HR division during the required 48-week period. All other teams of consultants would be 100% utilised in providing consulting services to external clients.

iii) A major client has offered to pay the MIS division GH¢264,000 for the services of two teams of consultants during the required 48-week period.

(14 marks)

b) Explain **THREE (3)** limitations of negotiated transfer prices. **(6 marks)**

(Total: 20 marks)

QUESTION TWO

a) Benchmarking helps to highlight what it will take for a company to enhance its operations in order to become competitive in an industry.

Required:
Explain **THREE (3)** requirements of successful benchmarking. **(5 marks)**

b) Abrantie Ltd uses the Traditional Costing System, absorbing fixed overheads at GH¢25 per labour hour, based on 25,000 budgeted labour hours.

The operational process has become so complex of late that management has decided to use Activity Based Costing. The following key activity pools have been identified; Batching, Deliveries, Direct labour and Packaging.

The budgeted overheads are to be apportioned into 3:3:2:2 for Batching, Deliveries, Direct Labour and Packaging respectively. Information on the company's three products has also been given below;

Products	**A**	**B**	**C**
Units	3,500	4,850	3,200
Hours per unit	3	2	1.5
Number in a batch	350	485	200
Units per delivery	250	485	160
Number of Packages	500	800	450

Required:
Calculate the activity rates for each cost pool identified. **(10 marks)**

c) Organisations invest time and resources in creating and controlling budgets to ensure stability and predictability of their operations.

Required:
Explain **FOUR (4)** factors necessary for effective budgetary control. **(5 marks)**

(Total: 20 marks)

QUESTION THREE

a) Barka Ltd is a manufacturer of jute bags. The following data was provided by the Cost Accountant who wants to analyse the various variances for decision making:

Details	
Normal capacity	1200 machine hours for 20 days in a month
Budgeted monthly fixed overheads	GH¢300,000
Standard time to manufacture a unit of product	4 hours

Actual data for the month of April 2023

Details	
Days and hours worked	900 machine hours for 19 days
Output	4,275 units
Actual fixed overheads incurred	GH¢290,0000

Required:

Calculate the following variances:

i) Efficiency **(2 marks)**
ii) Capacity **(2 marks)**
iii) Expenditure **(2 marks)**
iv) Volume **(2 marks)**
v) Total fixed overhead **(2 marks)**

b) Budgeting is a key skill for ensuring organisations and teams have the resources to execute initiatives and reach goals.

Required:

i) State **FOUR (4)** factors that may cause employees to dislike budgets. **(6 marks)**
ii) Recommend how management can mitigate the negative impact of these factors on budget performance. **(4 marks)**

(Total: 20 marks)

QUESTION FOUR

a) The following projects are being considered for investment using the Accounting Rate of Return.

Year	Project A	Project B
	Profit before depreciation	
	GH¢	GH¢
1	42,000	68,000
2	92,000	85,000
3	100,000	90,000
4	88,000	80,000
5	82,000	80,000
Investment cost	340,000	290,000
Residual value	65,000	50,000

Depreciation is on straight line basis with useful life of 5 years for both projects.

Required:

i) Advise on the most profitable option. **(10 marks)**

ii) Explain **THREE (3)** demerits of Accounting Rate of Return. **(5 marks)**

b) Zero Based Budgeting (ZBB) is a process of budgeting that allocates funding based on programme efficiency and necessity rather than budget history. ZBB aims to put the onus on managers to justify expenses and to drive value for an organisation by optimising cost and not just revenue. Adopting a ZBB approach for a company may seem like an intimidating task but when weighed against the value derived, the effort is worth the result.

Required:

Explain **THREE (3)** challenges management will face when implementing Zero Based Budgeting system. **(5 marks)**

(Total: 20 marks)

QUESTION FIVE

A farmer is planning his production for next season and he has asked you as a Management Accountant, to recommend the optimal mix of vegetable production for the coming year.

He has given you the following data relating to the current year.

	Tomato	**Garden egg**	**Cucumber**	**Carrot**
Area Occupied (acres)	25	20	30	25
Yield per acre (tonnes)	10	8	9	12
Selling price per tonne (GH¢)	100	125	150	135
Variable cost per acre:				
Fertilizers	30	25	45	40
Seeds	15	20	30	25
Pesticides	25	15	20	25
Direct wages	400	450	500	570
Fixed overheads per annum GH¢ 54,000				

Additional information:
The land that is being used for the production of Cucumber and Carrot can be used for either crop, but not for Tomato and Garden egg. The land that is being used for Tomato and Garden egg can be used for either crop, but not for Cucumber and Carrot.

In order to provide an adequate market service, the farmer must produce each year at least 40 tonnes each of Tomato and Garden egg and 36 tonnes each of Cucumber and Carrot.

Required:

a) You are required to present a statement to show the profit for the production mix that you would recommend. **(10 marks)**

b) Assume that the land could be cultivated in such a way that any of the above crops could be produced and there was no market commitment.

Required:

i) Advise the farmer on which crop he should concentrate his production. **(2 marks)**
ii) Calculate the profit based on your advice in (i). **(5 marks)**
iii) Calculate in Ghana cedis the break-even point of sales. **(3 marks)**

(Total: 20 marks)

SOLUTION TO QUESTIONS

QUESTION ONE

a)

i) The transfer price of GH¢750 proposed by the MIS division is based on cost plus 150% from which it can be deduced that the total cost of a consulting day is (100/250) x GH¢750 = GH¢300. This comprises GH¢240 (80%) variable cost and GH¢60 (20%) fixed cost. In this instance the transfer price should be set at marginal costs plus opportunity cost. It is assumed in this situation that transferring internally would result in the MIS division having a lost contribution of GH¢750 – GH¢240 = GH¢510 per consulting day. The marginal cost of the transfer of services to the HR division is GH¢190 (GH¢240 external variable costs less GH¢50 saving due to use of internal video-conferencing equipment). Adding the opportunity cost of GH¢510 gives a transfer price of GH¢700 per consulting day. This is equivalent to using market price as a basis for transfer pricing where the transfer price is set at the external market price (GH¢750) less any costs avoided (GH¢50) by transferring internally.

ii) There is in effect no external market available for one of the required pairs of consultants within the MIS division and therefore opportunity cost will not apply and transfers should be made at the variable cost per consulting day of GH¢190. The other pair of consultants, who would otherwise be 100% utilised in providing consulting services to external clients, should be charged at a rate of GH¢700 per day which represents marginal cost plus opportunity cost.

iii) The lost contribution from the major client amounts to GH¢264,000/(2 x 240) = GH¢550 less variable costs of GH¢240 = GH¢310 per consulting day. Thus, in this instance the transfer price should be the contribution foregone of GH¢310 plus internal variable costs of GH¢190 making a total of GH¢500 per consulting day.

Marks allocation:
Analysis = 4 marks
i) = 3 marks
ii) = 3 marks
iii) = 4 marks
14 Marks

Alternative

Cost Analysis
Let x represent cost
X + 1.5X =750
2.5X = 750
X=300

Variable cost = 80% of 300 = 240
Fixed cost = 20% of 300 = 60

i) Where there is no spare capacity, transfer price should be at market price. With the use of internal facility and savings in variable cost, transfer price should be market price less savings. GH¢750-GH¢50 =GH¢700

ii) Where one team is idle, the fully engaged team will transfer at adjusted market price while the idle team will transfer at adjusted variable cost
Fully engaged : GH¢750-GH¢50 =GH¢700
Idle GH¢240-GH¢50 =GH¢190
GH¢890

For the two teams

iii) Where there is an offer from an outside customer, the transfer price should be the opportunity cost.
Offer price = 264,000/480 hr days
=GH¢550 adjusted by saving GH¢50 which is GH¢500 per consultant day.

b) **Negotiated transfer prices suffer from the following limitations:**

- The transfer price which is the final outcome of negotiations may not be close to the transfer price that would be optimal for the organisation as a whole since it can be dependent on the negotiating skills and bargaining powers of individual managers.

- They can lead to conflict between divisions which may necessitate the intervention of top management to mediate. The measure of divisional profitability can be dependent on the negotiating skills of managers who may have unequal bargaining power.

- They can be time-consuming for the managers involved, particularly where large numbers of transactions are involved.

(3 points @ 2 marks each = 6 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Only a few candidates could analyse the cost correctly as a result determination of the transfer price could not be done.

(i) Candidates demonstrated lack of knowledge where there is idle capacity with savings on internal services. The solution required the market price adjusted for the GH¢50 savings per consulting day.

(ii) The question required that one team would charge a minimum of adjusted variable cost and the other at the adjusted market rate so since the cost could not be properly analysed the answers provided were wrong.

(iii) A few candidates identified the opportunity cost as the amount offered by the outside client but could not relate it to the fixing of the price. They rather compared

it with the expected revenue from the HR and advised that it was a better option. After determining the charge per consulting day offered adjustment is made for the savings on variable cost for the use of internal facilities.

b) Candidates explained the limitations of transfer price fairly well and scored some appreciable marks.

QUESTION TWO

a) Requirements of successful benchmarking:

- Select key aspect of the performance to be benchmarked.
- It must be a continuous process. Competitors also seek progress so to be like them means being continuously innovative.
- It should be a method of becoming better than competitors.
- When external partners are used the system should be honest and transparent

(Any 3 points @ 1.67 marks each = 5 marks)

b) Abrantie Ltd

Calculation of budgeted overheads; GH¢25×25,000= GH¢ 625,000 (1 mark)

Apportionment of overheads;
Batching = (30% of 625,000) = GH¢ 187,500 (0.5)
Deliverirs = (30% of 625,000) = GH¢ 187,500 (0.5)
Labour rel. = (20% of 625,000) = GH¢ 125,000 (0.5)
Packaging = (20% of 625,000) = GH¢125,000 (0.5)

Calculation of activity pools
Batch;

A = 3,500 ÷ 350 = 10 (0.5)
B = 4,850 ÷ 485 = 10 (0.5)
C = 3,200 ÷ 200 = 16 (0.5)
Total 36

Deliveries;

A = 3,500 ÷ 250 = 14 (0.5)
B = 4,850 ÷ 485 = 10 (0.5)
C = 3,200 ÷ 160 = 20 (0.5)
Total 44

Number of hours

A = 3,500 × 3 = 10,500 (0.5)
B = 4,850 × 2 = 9,700 (0.5)
C = 3,200 × 1.5 = 4,800 (0.5)
Total 25,000 hrs

Number of packages (500 + 800 + 450) = 1,750 (0.5)

Calculation of rates;

Batch = GH¢ 187,500 ÷ 36 = GH¢ 5,208.3 per batch (0.5)
Deliveries = GH¢ 187,500 ÷ 44 = GH¢ 4,261.36 per delivery (0.5)
Labour related = GH¢ 125,000 ÷ 25,000 = GH¢5 per hr. (0.5)
Packaging = GH¢ 125,000 ÷ 1,750 = GH¢71.43 per pack. (0.5)

(10 marks)

c) Factors necessary for budgetary control:

- Clear demarcation between areas of managerial responsibility.
- Budget targets that are challenging yet achievable.
- Established data collection, analysis and reporting routines.
- Reports aimed at individual managers, rather than general-purpose documents
- Fairly short reporting periods
- Timely variance reports

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

(Total: 20 marks)

EXAMINER'S COMMENTS

(a) Candidates performed quite well explaining the requirement for successful benchmarking. A few, however, explained the types of benchmarking while others wrote about the process which were not the requirement.

(b) this question was well attempted; the appropriate steps were followed to arrive at the activity rates.

c) Effective budgetary control is one of the areas candidates performed well. The responses here were good and candidates who attempted it scored good marks.

QUESTION THREE

a) Workings:
Standard hours worked:
Units produced = 4,275 units
Hours per unit = 4 hours
Total standard hours = 4,275 x 4 hours = **17,100 hours**

Standard rate = $\frac{300,000}{150 \times 20 \times 8 \text{hours}}$ = GH¢300,000/24,000 = **12.5 per hour**

Actual hours worked = 900 hours x 19days = 17,100 hours
Budgeted hours in actual days = 19 days x 8hours x 150 machines = 22,800 hours

Variance analysis

Charged to production	= 17,100 x 12.5	= 213,750
Standard cost of actual hours	= 17,100 x 12.5	= 213,750
Standard cost of budgeted hours in actual days		= 22,800 x 12.5 = 285,000
Budget		= 300,000
Actual		= 290,000

i) Efficiency variance = charged to production – standard cost of actual hours
= 213,750 – 213,750 = Nil

(2 marks)

ii) Capacity variance = standard cost of actual hours – standard cost of budgeted hours in actual days
= 213,750 – 300,000 = **86,250 Adverse**

(2 marks)

iii) Expenditure variance = Budget – Actual
= 300,000 – 290,000 = **10,000 Favourable**

(2 marks)

iv) Volume variance = charged to production – Budget
= 213,750 – 300,000 = **86,250 Adverse**

(2 marks)

v) Total Fixed Overhead = 213,750 – 290,000 = **76,250 Adverse**

(2 marks)

Alternative Solution

i) **Efficiency Variance**
(SH-AH) SR
(17,100-17,100)12.5
0

ii) **Capacity Variance**
(BH-AH) SR
(24,000-17,000)12.5
86,250 A

iii) **Expenditure Variance**
(B O/H –A O/H)
(300,000-290,000)
10,000 F

iv) **Volume Variance**
(SH-BH)SR
(17,100-24,000)12.5
86,250A

Budgeted Hrs
1200 * 20 = 240,000
Standard Hrs
4,275 units * 4 = 17,100

Actual Hrs
900 * 19 = 17,100
Standard Rate
300,000/24,000 =12.5

v) **Total Fixed Overhead Variance**
Absorbed O/H – Actual O/H
12.5*17,100 = 213,750
Actual = 290,000
76,250A

b) Factors that affect budget acceptance.

- **Lack of participation:** when operatives are not involved in the process, they will not own the budget.
  Management should establish a strong link with operatives and involve them at all levels of the process.

- **Unattainable targets:** such targets are set to challenge employees to work hard but they tend to demotivate them since they are usually not achieved.
  Targets set must encourage hard work and be achievable under normal conditions.

- **Lack of top management support:** Often top management do not provide the needed resources for implementation of budgets.
  Resources needed should be made available for operatives at the right time.

- **Rigid application of the budget:** Some executives do not allow any flexibility in the implementation process which may stifle initiatives.
  Operatives should be permitted to introduce new ideas where necessary.

- **Lack of education:** Most employees are of the view that once provisions have been made for expenditure items money should be available for use.
  Proper education on the principles and concept of budgeting will mitigate the mistrust associated with delays in the release of funds that have been approved.

(Any 3 points @ 3.33 marks = 10 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

(a) Candidates could not demonstrate adequate knowledge in solving fixed overhead variances. Apart from the expenditure variance, most of them could not solve for the total, volume, capacity and efficiency variances.

(b) The behavioural aspect of budgeting was well attempted. Most candidates clearly stated the reasons for the dislike of budgets and made appropriate recommendations that would help to mitigate the negative impact on performance.

QUESTION FOUR

a)

i) Accounting Rate of Return (ARR) Computation

Project A

	GH¢	
Profit before depreciation	404,000	(0.5)
Less depreciation (340,000-65,000)	275,000	(0.5)
Profit after depreciation	129,000	
Average profit (129,000÷5)	25,800	(1)
Average investment (340,000+65,000) ÷ 2	202,500	(1)
ARR (25,800÷202,500)	**12.74%**	(1)

Project B

	GH¢	
Profit before depreciation	403,000	(0.5)
Less depreciation (290,000-50,000)	240,000	(0.5)
Profit after depreciation	163,000	
Average profit (163,000÷5)	32,600	(1)
Average investment (290,000+50,000) ÷ 2	170,000	(1)
ARR (32,600÷170,000)	**19.17%**	(1)

Advise

Accept project B (1)

(9 marks evenly spread using ticks)

ii) Demerits of ARR (2 for a point well explained)

- It uses accounting profit instead of cash flow. Investment require cash outlay and when such cash can be recouped.
- Accounting profit are unreliable and subject to manipulation. A change in inventory policy can change profit.
- It ignores the time value of money
- The method gives relative returns and the same income with different depreciation rates will result in different ARR

(Any 3 points @ 2 marks = 6 marks)

b) Challenges that will be faced when implementing ZBB:

- Time needed by the sectional heads as they combine their normal schedules with the cumbersome process.
- Some very crucial activities may be difficult to justify and be denied resources.

- Planners need to understand relevant costing to do cost benefit analysis of decision packages.
- Ranking of decision packages may be subjective.
- It may cause a major shift in focus and allocation of resources

(Any 3 points @ 1.67 marks = 5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

(a) (i) Accounting rate of returns should not have been difficult to compute yet it appears not to be popular with candidates. Those who attempted, however did well and scored the allotted marks. The interpretation of the scores was in line with the outcome and based on the decision criteria for ARR.

(ii) The demerits of ARR were well explained by those who attempted.

(b) Challenges of implementing Zero Based Budgeting were fairly explained. Candidate scored some good marks.

QUESTION FIVE

a) Variable costs are quoted per acre, but selling prices are quoted per tonne. Therefore, it is necessary to calculate the planned sales revenue per acre. The calculation on the selling price and contribution per acre is as follows:

	Tomatoes	**Garden egg**	**Cucumber**	**Carrots**
(a)Yield per acre in tonne	10	8	9	12
(b) Selling price per tonne	GH¢100	GH¢125	GH¢150	GH¢135
Sales revenue per acre, (a) x (b)	GH¢1000	GH¢1000	GH¢1350	GH¢1620
(d) Variable cost per acre	GH¢470	GH¢510	GH¢595	GH¢660
(a) Contribution per acre	GH¢530	GH¢490	GH¢755	GH¢960

Profit statement for recommended mix

	Area A (45 acres)		**Area B (55 acres)**		**Total**
	Tomatoes	**Garden Egg**	**Cucumber**	**Carrots**	GH¢
Contribution per acre	GH¢530	GH¢490	GH¢755	GH¢960	
Ranking	1	2	2	1	
Minimum sales requirements in acres		5	4		
Acres allocated	40			51	
Recommended mix (acres)	40	5	4	51	
Total contribution	GH¢21,200	GH¢2450	GH¢3020	GH¢48,960	75,630
Less Fixed Costs					(54,000)
Profit					**21,630**

(Marks are evenly spread using ticks = 10 marks)

Alternative Scheme/Total Approach

	Tomatoes	**Garden egg**	**Cucumber**	**Carrots**
Revenue	25,000	20,000	40,500	40,500
Variable cost				
Fertilizer	750	500	1350	1000
Seeds	375	400	900	625
Pesticides	625	300	600	625
Direct Wages	10,000	9000	15,000	14,250
	11,750	10,200	17,850	16,500

Contribution	**13,250**	**9,800**	**22,650**	**24,000**

Ranking will be based on contribution per limiting factor (land)

	Tomatoes	**Garden egg**	**Cucumber**	**Carrots**
Total Contribution	13,250	9800	22,650	24,000
Total Acres occupied	25	20	30	25
Contribution/LF	530	490	755	960

b)

i) Production should be concentrated on carrots, which have the highest contribution per (GH¢960). **(2 marks)**

ii)

	GH¢
Contribution from 100 acres of carrots (100 x GH¢960)	96,000
Fixed overheads	(54,000)
Profit from carrots	**42,000**

(5 marks)

iii) Break-even point in acres for carrots $= \frac{Fixed\ Cost}{Contribution\ per\ acre}$

$$= \frac{GH¢\ 540{,}000}{GH¢960}$$

56.25 acres

Therefore contribution in sales values for carrots = **GH¢91,125** (56.25 acres x GH¢1620 sales revenue per acre) **(3 marks)**

(Total: 20 marks)

EXAMINER'S COMMENTS

(a) Most candidates could not attempt the question. A few who attempted it could compute only the contribution per acre for the crops. A few calculated the contribution per the total land allocated to each crop. In such cases they should have divided the total contribution by the number of acres for each crop to arrive at the contribution per limiting factor before the ranking. Some also computed contribution per tonne. Where they got the contribution right the ranking was done without reference to the suitability of the land to the various crops so the allocation of the 100 acre-land posed a challenge which led to the preparation of wrong financial statement.

The reason why most candidates could not attempt this question may be due to the fact that land could not be identified as a limiting factor and determination of the relevant revenue and costs could not be made.
(b) This requirement would have been easier if the contribution per limiting factor had been computed correctly. Unfortunately, those who attempted it after indicating that carrot was the most preferred could not determine the break-even out- put in sales.

CONCLUSION:

- Question five was poorly attempted, only a few could attempt it beyond the calculation of contribution per limiting factor. Most candidates also performed woefully in transfer pricing which resulted in the overall poor performance. The remaining questions were fairly attempted but for some of the candidates the scores were not enough to compensate for the shortfall in the two questions mentioned above.
- Facilitators and lecturers are encouraged to broaden the scope of their application areas when preparing candidates for the paper.
- Candidates writing this paper should note that questions are set to cover all the areas specified in the syllabus and so should be guided accordingly.