MAY 2016 PROFESSIONAL EXAMINATION
MANAGEMENT ACCOUNTING (2.2)
EXAMINER'S REPORT, QUESTIONS AND MARKING SCHEME

EXAMINER'S REPORT

STANDARD OF PAPER & GENERAL PERFORMANCE

The coverage of the paper was excellent and no ambiguities were noted with marks allocations considered fair.

Candidates were examined in the following subject areas.

- Budgeting and performance measurement
- Capital investment decisions
- Transfer pricing and decision making
- Accounting for materials
- Labour remuneration using incentive schemes
- Limiting factors in optimum decision making
- Contract manufacturing

Performance was generally below expectations. General difficulties encountered by the candidates include poor expression of the English language, lack of clarity and presentation of suggested solutions and poor understanding and application of management accounting principles and techniques. The requirements for the questions were generally clear with no mistakes noted in the questions. The performance of the students from the Kumasi and Cape Coast Centre was very encouraging with no indications of copying. Difficulties encountered by the candidates in respect of the individual questions are presented below.

MANAGEMENT ACCOUNTING QUESTIONS

QUESTION ONE

a) Your newly appointed Managing Director is preparing to deliver a paper on the need to keep budgets clean and use it as a model of change in the organisation. As the Management Accountant of your organisation, briefly explain to him;
   i) **FOUR** differences between ***Zero based*** and ***Activity based*** budgeting. **(4 marks)**
   ii) **FOUR** benefits of Activity based budgeting. **(4 marks)**
   iii) **FOUR** advantages of using cash budget as a management control tool. **(4 marks)**

b) Performance Management aims to establish how well something or somebody is doing in relation to a plan. Explain **TWO** methods used in measuring performance and identify **FOUR** qualities of a good performance measurement criteria. **(8 marks)**

(Total: 20 marks)

QUESTION TWO

a) It is said that of all the capital investment evaluation approaches, the Payback (PB) and Accounting rate of return (ARR) methods are widely used in practice. But these methods are not without limitations.

Required:
   i) State **TWO** justifications of payback period and **ONE** justification of ARR for their popularity in practice as investment appraisal techniques. **(3 marks)**
   ii) Outline **TWO** limitations each for payback and ARR, as investment appraisal techniques. (**4 marks)**

b) Anima Ventures want to start a new bakery at Bodwease in Ashanti Region. She plans to rent a store room for her operations under the following terms and conditions.

	Option 1	**Option 2**
Fixed Rent Charge	GH¢5,000	GH¢3,000
Variable Rent	-	10% of selling price of each loaf

The following data are also relevant for her business:

		GH¢	**GH¢**
Selling Price			5.00
Material cost:	Flour	0.80	
	Margarine	0.70	
Labour cost		0.50	

Required:

i) Determine the break-even point in units under each option. **(2marks)**
ii) Calculate the degree of operating leverage (DOL) for the two options if 10,000 loaves of bread are to be sold in the current year. **(4marks)**
iii) What would be the expected operating income if sales increase by 25% next year? **(4marks)**
iv) Which of the two options would you recommend to Anima Ventures and why? **(3marks)**

(Total: 20 marks)

QUESTION THREE

a) Anim shoes ltd produces and sells Ghana made shoes with two main departments; production/sales and repairs departments. The production and sales department produces and sells 10,000 pairs of shoes each year. Because of the low quality of raw materials available in the country, the company includes an additional GH¢11 in the cost of a pair of shoes sold to cater for one-year after sales repairs.

On average, it is expected that a quarter of the total pairs of shoes sold would come back for repairs a year after sale. Repair works on a pair of shoe takes 2 labour hours and it is estimated that total repair cost on the quarter of shoes will be GH¢27,500.

In addition to providing repair services to the production and sales department, the repair department sometimes picks up offers from outside the company. Such external offers are billed at full cost and a margin on sales of 20%. The following is the breakdown of the average repair cost of a pair of shoe:

	GH¢
Material	2.50
Labour	1.5 per labour hour
Variable Overheads	0.5 per Labour hour
Fixed Overheads	1.15 per Labour hour

Required:

i) Calculate the individual profits of the Production/Sales department, Repairs department and Anim Ventures if repairs are done by the repairs department of Anim Ventures at either full cost plus 20% margin on sales or at marginal cost. **(8marks)**
ii) Pee Shoe Repairs has offered to repair each pair of shoe for Anim Ventures at GH¢10.00, a price which is cheaper than what the repairs department is offering. Should Anim Ventures accept this offer? **(5marks)**

iii) Identify **THREE** other factors Anim Ventures should consider in finalizing the decision in (ii) above? **(3marks)**

iv) Explain **TWO** principles of a good transfer pricing method **(4marks)**

(Total: 20 marks)

QUESTION FOUR

a) Material X is a key raw material of XOXO Ltd. The store keeper is interested in knowing the units they have placed on order because the supporting documents have been destroyed by fire. She is able to provide that immediately before the fire: materials in inventory were 1,250; materials requested by factory but yet to be supplied issued were 375 whilst inventory balance was 3,255. What is the amount of material X that XOXO has ordered from its suppliers? **(2marks)**

b) MM Company Ltd., a manufacturer of groundnut paste, wishes to know whether it is advisable to stick to its economic orders or accept a special order from a foreign supplier for the supply of groundnuts. The following information has been provided:

Purchase price per bag of groundnut	GH¢360
Holding cost per annum is 10% of the cost of a bag of ground nut	
Ordering cost per annum	GH¢7.7
Annual Demand of groundnut paste	6,000
Normal usage per month	520bags
Minimum Usage per month	500bags
Maximum usage	700bags

Required:

i) The foreign supplier promises a reduction in the price of a bag of groundnut by 8% if MM Company is willing to order 3000units each time it wants to order. Advise MM. . **(10marks)**

ii) What is the difference between ***a bin card*** and a ***store ledger card***?

(3marks)

c) HK manufacturing company is considering introducing a high day rate incentive scheme. An experiment with one of its average workers showed that an employee is likely to produce 1,500units in a 40hour week if she was paid GH¢25 per hour but 1800units if she was paid GH¢31.25 per hour.

Assume that production overhead is added to cost at the rate of GH¢25 per direct labour hour.

Required:

i) Determine the cost per unit of output on both the low day rate scheme and high day rate scheme. **(3marks)**

ii) Is it advisable to introduce the high day rate scheme? **(2marks)**

(Total: 20 marks)

QUESTION FIVE

a) Explain the term ***shadow price***. **(2 marks)**

b) Unity Company Ltd is preparing for next seasons operations. The company has provided the following information relating to its three products.

	TO	GE	DA
	GH¢	GH¢	GH¢
Selling Price	18.5	16.2	12.6
Material Cost (@ GH¢1.75 per kg)	8.75	10.5	3.5
Labour cost (@ GH¢2.2 per labour hr)	7.7	4.4	7.7
Annual Demand	2,150units	3,235units	1,556units

The company can only make available a total of 18,560 hours in the short run.

Required:

i) Provide the optimal production plan for Unity Ltd for the ensuing period. **(5marks)**

ii) What is the total incremental benefit of producing DA instead of GE, assuming available resources can only meet demand of DA? **(3marks)**

iii) Indicate the shadow price of the production plan and state the basic assumption under which this price will apply. **(2marks)**

c) Contract manufacturing has grown in popularity in recent years because of its usefulness to companies.

Required:

i) Explain contract manufacturing. **(2marks)**

ii) Outline **THREE** main reasons for the recent surge in contract manufacturing. **(3marks)**

iii) Explain **TWO** factors that will ensure effective contract manufacturing. **(2marks)**

(Total: 20 marks)

MANAGEMENT ACCOUNTING SCHEME

QUESTION ONE

a) i)

1. The **Zero Based Budgeting** is a method where all expenses have to be justified for every new period. The **Activity Based Budgeting** is a budgeting method where all the activities that invite cost in all functional areas in an organisation are recorded and the relationship between them is analysed.
2. In Zero Based Budgeting, all functions in an organisation are analysed for its needs and costs.
3. Zero Based Budgeting can also be termed as a re-evaluation of the program and expenditures of an organisation.
4. The Activity Based Budgeting aligns all activities with the objectives.
5. The Activity Based Budgeting helps in effective analysis of the profit potential of an organisation's services and its products.

ii**) Benefits of Activity based budgeting**

1. Different **activity levels** will provide a foundation for the base package and incremental packages of Zero Based Budgeting.
2. It will ensure that the organisation's overall **strategy** and any actual or likely changes in that strategy will be taken into account because it attempts to manage the business as **the sum of its interrelated parts.**
3. **Critical Success Factors** will be identified and performance measures devised to monitor progress towards them.
4. Because concentration is focused on **the whole of an activity**, not just its separate parts, there is more likelihood **of getting it right first time.** For eg what is the use of being able to produce goods in time for their despatch date if the budget provides insufficient resources for the distribution manager who has to **deliver** them.

iii) Advantages of using a cash budget as a management control tool

1. This tool helps determine whether ***cash balances remain sufficient*** to fulfil regular obligations and whether ***minimum liquidity and cash balance requirements*** stipulated by banks or internal company regulations are maintained. It also helps a company determine whether too much cash is retained that could be otherwise used in productive activities. Companies that borrow from banks need to monitor their cash coverage ratio and preparing a cash budget constitutes the first step in calculating this ratio.
2. Cash budgets identify the amount of cash required to ***fulfil immediate, short-term obligations*** without utilization of overdraft protection or lines of credit. Businesses use this information to determine the extent of credit sales. Offering

credit and extending credit periods usually increases sales. A company with excess cash can afford to sell on credit and thereby boost profitability. Conversely, a company hard-pressed for cash might decide to sell products at discounted prices for cash. Offering such discounts may be cheaper than the cost of overdraft fees or credit interest.

3. Companies use cash budgets to make plans for ***optimal utilization of cash***. The goal is to retain only the minimum required working capital, investing the surplus cash in productive ventures, such as making profitable investments, expanding production capacity, purchasing raw materials in bulk and in using cash to obtain favourable discounts. Companies hard-pressed for cash can take many steps to improve their position, such as reducing credit sales, postponing or reducing dividends, collecting credit early, rescheduling debt repayment and other pay-outs, cutting back on manufacturing products that require resources but do not yield much cash in the short term, and so on. Companies also look at a cash budget to determine the extent of cash available, if any, to finance capital expenditures.
4. Preparing a cash budget sheds light on ***where cash goes***. Individuals and companies can analyse each item of expenditure to determine the purpose of such expenditure and the value received in return for the expense. This allows them to cut down on unproductive expenses, bring in financial efficiency, and improve the quality of financial decisions.

b) **Methods used in measuring performance**

Financial Performance: analyse profitability, liquidity and risk. Financial Indicators include Profit, Revenue, Costs, Share Price and cash flow.
Non-Financial Performance: This can usefully be applied to employees and product/service quality. Non-Financial Indicators may include Quality of Service, Measures of customer satisfaction, Lateness**.**

Qualities of Good Performance Measurement

A GOOD MEASURE:	**DESCRIPTION:**
Is quantitative	The measure can be expressed as an objective value
Is easy to understand	The measure conveys at a glance what it is measuring, and how it is derived
Encourages appropriate behaviour	The measure is balanced to reward productive behaviour and discourage "game playing"
Is visible	The effects of the measure are readily apparent to all involved in the process being measured
Is defined and mutually understood	The measure has been defined by and/or agreed to by all key process participants (internally and

	externally)
Encompasses both outputs and inputs	The measure integrates factors from all aspects of the process measured
Measures only what is important	The measure focuses on a key performance indicator that is of real value to managing the process
multidimensional	The measure is properly balanced between utilization, productivity, and performance, and shows the trade-offs
Uses economies of effort	The benefits of the measure outweigh the costs of collection and analysis
Facilitates trust	The measure validates the participation among the various parties

EXAMINER'S COMMENTS

This question examined students in the areas of ZBB and ABB as well as the use of cash budget as a management tool and performance measurement. Most of them could not define what an ABB is and could not also bring out the benefits of ABB. Some of the benefits are identification of critical success factors; concentration is focused on the entire activities of the organization, attention on the overall strategy of the business etc. Majority of the students could not state the methods used in measuring performance such as RI, ROI etc. but rather indicating concepts like NPV, Payback Period etc.

QUESTION TWO

a) i) Justifications for the use of Payback Method

- It is considered useful when firms face liquidity constraints and require a fast payment of their investments.
- It serves as a simple first level screening device that indentifies those projects that should be subjected to more rigorous investigations.
- It provides a rough measure of risk, based on the assumption that the longer it takes for a project to pay for itself, the riskier it is.

ii) ***Justification for the use of ARR***

- ARR is a widely used financial measure of managerial performance. So managers are likely to be interested in how any new investment contributes to the business units' overall accounting rate of return.

Limitations of Payback Method

- It ignores the time value of money
- It ignores cash flows that are earned after the payback period

Limitations of ARR

- The ARR fails to take into consideration the time value of money
- It relies on a percentage return rather than an absolute value

b) i. Break-Even Point in Units

		Option 1 GHS		**Option 2 GHS**
Selling Price		5.00		5.00
VC: Flour	0.80		0.80	
Margarine	0.70		0.70	
Labour	0.50		0.50	
Rent	0.00	2.00	0.50	2.50
		3.00		2.50

BEP (units) = Fixed Cost/Contribution per unit
Option 1 = GHS5,000/3.0 = 1,667 loaves of bread
Option 2 = GHS3,000/2.5 = 1,200 loaves of bread

ii) Calculation of Degree of operating leverage

	Option 1	**Option 2**
Contribution per Unit	3.00	2.50
Total Cont (for 10,000 units)	30,000.00	25,000.00
less Fixed Cost	5,000.00	3,000.00
Operating Profit	25,000.00	22,000.00

DOL = Total Contribution / Operating Profit
Option 1 = GHS30,000/ GHS25,000 = 1.20
Option 2 = GHS25,000/ GHS22,000 = 1.14

iii) Calculation of the expected operating income if sales increase by 25% next year
Percentage change in Operating Income = DOL x % change in Sales
Option 1 = 1.20 x 25% = 30.00%
Option 2 = 1.14 x 25% = 28.50%

Expected Operating Income
Option 1 = GHS25,000 + (30.00% x GHS25,000) = GHS22,500
Option 2 = GHS22,000 + (28.5% x GHS22,000) = GHS28,270

iv) Decision Point
In choosing between the two options DOL plays a key role. DOL of option 1which is 1.20 as against 1.14 of option 2 shows that option 1 has a higher return/risk for any given level of sales than option 2. The increased risk in option 2 provides an opportunity for an increased return or profit level when units sold go beyond 4,000 units. Because 4,000 is the units at which operating income of both options are the same.

Thus, since management expects units sold to be 10,000 units, then option 1 is more beneficial . On the other hand, if management has reason to believe that units to be sold will fall below 4,000 units, then option 2 is more beneficial.

Determination of units at which operating incomes of both options are the same
3.0u – 5,000 = 2.5u – 3000
3.0u – 2.5u = -3,000 + 5,000
0.5u/0.5 = 2,000/0.5 = 4,000 loaves of bread.

EXAMINER'S COMMENTS
Candidates were tested in the areas of capital investment appraisal and B-E Analysis. The performance is satisfactory. Two areas of difficulty were noted – Calculation of Degree of Operating Leverage and the calculation of the expected income if sales increase by 25%. More than 50% of the candidates do not know the formula for calculating the DOL which is the total contribution divided by the Operating Profit. Unfortunately, one cannot calculate the expected operating income is you cannot compute the DOL. This is because the Percentage Change in Operating Income is equal to the DOL times the Percentage Change in Sales.

QUESTION THREE

i)

		Unit Cost GHS	Total Cost on 2,500 GHS
Material		2.50	6,250.00
Labour	(1.5 x 2hrs)	3.00	7,500.00
Var. O'heads	(0.50 x 2hrs)	1.00	2,500.00
Marginal Cost		6.50	16,250.00
Fixed Cost		2.30	5,750.00
Total Cost		8.80	22,000.00
Profit (20/80)		2.20	5,500.00
		11.00	27,500.00

Full Cost plus 20% profit on sales

	Pdn/Sales Dept GHS	Repairs Dept. GHS	Anim Ventures GHS
Sales	27,500	27,500	27,500
Cost	27,500	22,000	22,000
	00	5,500	5,500

Marginal Costing Method

	Pdn/Sales Dept GHS	Repairs Dept. GHS	Anim Ventures GHS
Sales	27,500	16,250	27,500
Cost	16,250	22,000	22,000
	11,250	(5,750)	5,500

ii) If Pee's offer is accepted

	Pdn/Sales Dept	**Repairs Dept.**	**Anim Ventures**
	GHS	GHS	GHS
Sales	27,500	0	27,500
Cost	25,000	5,750	30,750
	2,500	(5,750)	(3,250)

No, Anim ventures should not accept Uncle Pee's offer because the entire organisation would be worse off. Loss of overall profit would be GHS8,750 (GHS5,500 +GHS3,250).

Alternative Solution: Assuming the company collects the anticipated repair charge on all pairs of shoes upfront.

Full Cost plus 20% profit on sales

	Pdn/Sales Dept	Repairs Dept.	Anim Ventures
	GHS	GHS	GHS
Sales	110,000	27,500	110,000
Cost	27,500	22,000	22,000
	82,500	5,500	88,000

Marginal Costing Method

	Pdn/Sales Dept	Repairs Dept.	Anim Ventures
	GHS	GHS	GHS
Sales	110,000	16,250	110,000
Cost	16,250	22,000	22,000
	93,750	(5,750)	88,000

ii) If Pee's offer is accepted

	Pdn/Sales Dept	Repairs Dept.	Anim Ventures
	GHS	GHS	GHS
Sales	110,000	0	110,000
Cost	25,000	5,750	30,750
	85,000	(5,750)	79,250

No, Anim ventures should not accept Uncle Pee's offer because the entire organisation would be worse off. Loss of overall profit would be GHS8,750 (GHS88,000-GHS79,250).

iii) The following additional factors should be considered by Anim ventures

- Pee ventures ability to meet the quality standards of Anim ventures
- Timely delivery of after sales repair services
- Probable closure of the repairs department of Anim ventures due to reduced numbers
- Uncertain customer response if they get to know that the repair works are outsourced

Principles of good transfer pricing method

- Goal Congruence: it should lead to optimal decision of the whole organisation and not just a section of it.
- It should lead to a sustained high level of management effort. Sellers should be motivated to keep cost down whilst buyers are motivated to acquire and use inputs efficiently.
- Subunit autonomy: If decentralisation is favoured in the organisation, then the transfer pricing method should support that.

EXAMINER'S COMMENTS

Performance of the students was below expectations. This question examined students in decision making relating to profitability and accept/reject decisions.

Determination of the cost structure of the company based on full cost and a margin on sales posed challenges to the candidates. The cost structure based on the Marginal Cost method is shown below:

	UNIT COST	**TOTAL COST(2,500 Units)**
Material	2.50	6,250
Labour (1.5 *2hrs)	3.00	7,500
Variable Overheads (0.5 * 2hrs)	1.00	2,500
Marginal Cost	6.50	16,250
Fixed Cost	2.30	5,750
Total Cost	8.80	22,000
Profit(20/80)	2.20	5,500
Selling Price	11.00	27,500

Since this structure was wrongly determined, the students were not able to compute the profits using the Full Cost Plus the Marginal Costing methods.

QUESTION FOUR

a) **Free Inventory** = Material in inventory + Material on order – Material requested but not yet issued
3,255units = 1,250units + Material on order – 375units
Materials on order = 3,255units - 1,250units + 375units
= **2,380units**

b) i. **Economic Order Quantity** = $\sqrt{\frac{2x(520x12)x7.70}{10\%x360}}$

EOQ= $\sqrt{\frac{96,096}{36}}$ = **51.67bags = 52bags**

Total Material Cost Using EOQ as orders
Total Cost = Purchase Cost + Ordering Cost + Holding Cost
= (520 x 12 x 360) + (6,240/52 x 7.7) + (52/2 x 10% x 360)
= 2,246,400 + 924 + 936
= **GHS2,248,260.00**

Total Material Cost if Foreign Suppliers offer is accepted.
Total Cost = Purchase Cost + Ordering Cost + Holding Cost
= (6,240 x 92% x 360) + (6,240/3,000 x 7.7) + (3,000/2 x 92% x 10% x 360)
= 2,066,688 + 16.02 + 49,680
= **GHS2,116,384.02**

Decision
It is advisable to accept the order from the foreign supplier because GHS131,875.98 (GHS2,248,260.00 – GHS2,116,384.02) would be saved.

ii) Differences between a bin card and a store ledger account
A bin card shows the level of inventory of an item at a particular store location. It shows the receipts and issues of inventory without valuation and is normally kept by the store keeper. But a store ledger account, which is normally prepared by the cost accountant, shows the issue, receipts and balances of items and their valuations.

c) Cost per unit for low day rate
= $\frac{[40hoursx(GHS25+GHS25)]}{1,500units}$
= 2,000/1,500 = GHS1.33 per unit
Cost per unit using High Day rate
= $\frac{[40hoursx(GHS31.25+GHS25)]}{1,800units}$
= 2,250/ 1,800hours = GHS1.25 per unit

Decision:
The Company should introduce the scheme because unit cost falls by 6.4% ((GHS1.33 – GHS1.25)/1.25) x 100

EXAMINER'S COMMENTS
This question examined candidates in the areas of accounting for materials and labour remuneration schemes. The performance is average. Questions A and C were averagely answered but B was poorly attempted.
Few students could not determine what Free Inventory is which is calculated as:
Free Inventory = Material In stock + Material on Order – Material requested but not yet issued.
Question B tested students in economic orders for materials and whether to accept an offer from a foreign supplier.
Most of them could not compute the EOQ from the information given. This is computed as:
EOQ = $\sqrt{93,600 \div 36}$ = 52bags (51.67) bags
The students need the EOQ to be able to calculate the total material cost using EOQ as orders.
The total material cost using EOQ as orders.
Total Cost = Purchase Cost + Ordering Cost + Holding Cost.
Also the students could not differentiate between a Bin Card and a Store Ledger Card. A bin card shows the level of inventory of an item at a particular location whilst a store ledger card shows the issue, receipt, and balances of items and their valuations

QUESTION FIVE

a) The term "***Shadow Price"*** is used to refer to monetary values assigned to currently unknowable or difficult to calculate costs. The estimated price of a good or service for which no market price exists.

b) i)Labour hours required to meet demand
TO (2,150units x 3.5hours) = 7,525hours
GE (3,235units x 2hours) = 6,470hours
DA (1,556units x 3.5hours) = 5,446hours
19,441hours

Shortage in Labours = Available labour hour – required labour hours
= 18,560hours – 19,441hours = 881hours

Calculation of contribution per labour hour

	TO GHS	GE GHS	DA GHS
Selling Price	18.5	16.2	12.6
Material Cost (@ GHS1.75 per kg)	8.75	10.5	3.5
Labour cost (@ GHS2.2 per labour hr)	7.7	4.4	7.7
Contribution per unit	2.05	1.3	1.4
contribution per labour hour	2.05/3.5hrs= 0.59	1.30/2hrs= 0.65	1.40/3.5hrs = 0.4
Ranking	2nd	Ist	3rd

Resource Allocation

GE (3,235units x 2.0hours) = 6,470hours
TO (2,150units x 3.5hours) = 7,525hours
DA (1304.29units x 3.5hours) = 4,565hours
18,560hours

ii) **Total Incremental benefits of DA over GE**

Contribution of DA 1.40
Contribution of GE 1.30
0.10

Total (0.10 x 1,556 units) = GHS155.6

iii) The **shadow price** of the production plan is **GHS0.40**
It is assumed that the extra unit of resource can be obtained at the normal variable cost

c) ***Contract manufacturing*** is the use of external supplies for finished products, components or services instead of producing/providing them in house.

ii) Reasons for popularity of Contract manufacturing in recent times

- Specialist contractors can offer superior quality and efficiency as a result of specialisation.
- Contracting out manufacturing frees capital that can then be invested in core activities such as market research, marketing and sales etc.
- Contractors have the capacity and flexibility to start production very quickly to meet sudden variations in demand.
- There is enough work to keep internal staff full occupied

iii) **Factors that ensure effective Contract manufacturing**

- Monitoring and measurement of the performance of the company you have contracted your manufacturing to.
- Clearly defined responsibilities between the parties involved

- Clear and pre0defined measures for seeking redress.

EXAMINER'S COMMENTS

This question tested candidates in decision making with limiting factors to determine an optimum production plan. The performance is not satisfactory. The written questions were equally not well answered. The students could not explain what a shadow price and contract manufacturing are. They could also not give any factors that will ensure effective contract manufacturing such as monitoring and measurement of performance, clearly defined responsibilities between parties, clear and pre-defined measures for seeking redress etc.

With regard to the calculation question, most of them were able to determine the contribution per product but fell short of calculating the contribution per the limiting factor (in this case labour) that will enable them to rank the products in the order of profitability. Because of that, they were not able to allocate the limited resources, labour, optimally to maximize profits for the company.

The steps needed to answer this question correctly are:

- Determine the contribution per unit
- Determine the contribution per limiting factor
- Ranking of the products
- Allocation of limited resources
- Determination of total profit

CONCLUSION

The general performance of the candidates is not satisfactory considering the coverage and content of the questions and the requirements.