THE INSTITUTE OF CHARTERED ACCOUNTANTS, GHANA

NOVEMBER 2015 PROFESSIONAL EXAMINATIONS

MANAGEMENT ACCOUNTING (2.2)

EXAMINERS GENERAL COMMENTS

GENERAL PERFORMANCE

In general, the performance of students were not good as expected, given that, the questions were all reasonable to have produced average performance but this was not the case. Students who studied well had it easy and score above 15 marks in each question and a good number scored 20 marks in two of the questions. Some students rather failed the budget questions which appeared to be the easiest. It was expected that, this questions would have been the best for all students. In all the performance was below average and generally spread across all centers. There were no strong similarities in the solutions of students. The performance only reflected low level of preparedness by students and poor predictability of questions by students.

STANDARD OF THE PAPER

This paper was relatively easy as compared to May, 2015 Management Accounting questions. The mix of question was generally good with straight forward questions. The level of ambiguities if any was very minimal with exception of question two depreciation of 5% which had alternative convincing logical approach, its effect on the solution was equally less significant. A student could still score18 marks out of 20 even if he got the depreciation wrongly calculated. Provision was however made to take care of the ambiguity by providing alternative marking scheme. There existed no sub-standard questions and all questions carried a reasonable marks according to the syllabus.

QUESTIONS

QUESTION ONE

a) Explain the following terms as used in standard costing. (**3marks)**

i. Basic cost standards

ii. Ideal standard

iii. Currently Attainable standards

b) Evaluate **FOUR (4)** purposes of standard costing. (**4marks)**

c) Explain **FOUR (4)** problems associated with standard costing in today's environment.

(**4marks)**

d) Borga limited produces cocoa powder for cocoa beverage manufacturing companies. The management accountant has produced the following variance analysis information for management discussions.

Actual sales

Selling price ¢225
Sales volume 9000units
Variable cost ¢170

Standard cost:
Selling price ¢220
Variable cost ¢170
Sales volume 10,000

Other variances have already been calculated as follows

Variances		**GHS**
Direct cost variances:		
Material:	Price	22,250A
	Usage	66,250A
Labour:	Rate	42,750A
	Efficiency	33,750A

Manufacturing Overhead variances:	
Fixed overhead expenditure variance	10,000F
Variable overhead expenditure variance	12,500F
Variable overhead efficiency variance	7,500A

The following additional information was extracted from the management accounts.

	GHS
Budgeted net profit for the period	200,000
Actual profit	45,000

You have been asked as cost Accountant to reconcile the Budgeted profit to the actual profit using the variance report generated by the management accountant.

Required:

i. Calculate the sales variances **(2marks)**
ii. The total material variance (**1mark)**
iii. The Total wage variances (**1mark)**
iv. Total manufacturing overhead variances (**1mark)**
v. Reconciliation of Budget profit to the actual profit. (**4marks)**

(**Total=20 marks)**

QUESTION TWO

Brofre limited retails fertilizer to farmers in Ghana. The company has approached its Bankers to provide funding for next year's operations and three months master budget has been requested for review by the bankers.

You have been approached by the management as a consultant to prepare the 1st quarter budget for the banker's consideration for its next year's operations.

End of Accounting year December 2014

	GHS
Debtors	23,000
Bank balance	55,000
Fixed asset at cost	698,000
Provision for depreciation balance	98,000
Creditors Balance	48,000
Operating expenses for the month December	60,000
Sales for the month of December 2014	400,000
December Ending inventory	20,000
Retained earnings	120,000

The following additional information was also provided to assist your work.

i) Depreciation is provided at the rate of 5% on cost of non-current assets

ii) Closing inventory is expected to increase by GHS 2000 in January from December levels. This is expected to increase by the same figure in February from the projected figure in January. It is expected that in March closing inventory is desired to be GHS 26,000

iii) The company makes a profit of 25% on its sales.

iv) Operating expenses is expected to increase by 10% from that of December and this is projected to increase at the same growth rate to March.

v) Sales is projected to grow by 15% from December until March.

vi) The Debtors figure is desired to be proportional to the sales values.

vii) Creditors value for the three months are expected to be as follows

January - GHS 50,000; February – GHS 46,000 and in March – GHS 52,000

You are required as a consultant for Brofre Company limited to prepare for their Bankers

a) The budgeted income statement for the three months. (**7 marks)**

b) The budgeted statement of financial Position for the three months. **(7marks)**

c) The cash budget for the three months. (**6marks)**

(Total=20 marks)

QUESTION THREE

Obonku limited Produces Single, Double, and King size beds for sale to hotels in West Africa. Its manufacturing plant is located in Tema and currently producing at 100% capacity. Below is the annual output and sales for each product and the associated costs.

Product	Single bed	Double bed	King Size bed
Units sold	5000units	3,500units	4000units
	GHC	GHC	GHC
Sales	2,500,000	2,800,000	3,800,000
Costs:			
Material cost	750,000	1,400,000	1,520,000
Labour costs	600,000	1,050,000	1,200,000
Manufacturing O'head	200,000	650,000	300,000
Administrative cost	200,000	100,000	200,000
Total cost	1,750,000	3,200,000	3,220,000
Profit /Loss	**750,000**	**(400,000)**	**580,000**

The Director of Obonku is of the view that the product, Double bed is not doing well and must not be produced any longer. The following additional information has been provided.

i. 40% of the labour cost for all bed type are fixed costs.
ii. 50% of the manufacturing overhead is variable costs for all products.
iii. 80% of the administrative cost is fixed.

Alom hotel limited situated at Elimina has requested for 80 units of each bed and they are ready to procure them at the current prices. Obonku ltd can only produce more if they increase production capacity in the short term at an additional cost of GHC80, 000.

Assuming that costs and prices remain the same. **You are required to**:

a) Advice whether the company should shut down the production of Double beds. (**10 marks)**

b) Should the company accept the new order assuming double beds will still be produced? (**10 marks)**

(Total=20 marks)

QUESTION FOUR

a) What are the two most relevant costs for determining the Economic Order Quantity? Give **THREE (3)** specific examples in each case. (**6marks)**

b) Examine the **THREE (3)** motives for Holding stocks. **(3marks)**

c) Explain Economic Order Quantity and discuss **TWO (2)** of its relevance. (**3marks)**

d) Quaku Manu limited purchases and sells CDS. The company has been experiencing stock shortages and excess stocks at certain times in the year. The manager is concerned about the impact of overstocking and understocking and is therefore requesting you to assist in determining the most Economic quantity of CDS to order.

He has made the following information available to you to enable you recommend an appropriate stock to order and hold.

	GHC
Sales per annum	20,000,000

Units of items sold 200,000 units

Mark up on cost of purchases is 25% of purchase price

The ordering cost is GHS200 per order whilst holding cost per unit is 5% of unit price.

Required:

i) Determine the economic order quantity**.** **(2 marks)**

ii) What is the annual ordering cost? (**2 marks)**

iii) Determine the annual holding cost (**2 marks)**

iv) How many times in a year will the company order for goods? **(1 mark**)

v) What is the purchase value per order quantity? **(1 mark)**

.

(Total=20 marks)

QUESTION FIVE

a) For any cost volume profit analysis to be valid, a number of important assumptions must reasonably be satisfied within the relevant range. As a management accountant for your organisation, evaluate any four assumptions that must be satisfied in cost-volume-profit analysis. (**4 marks)**

b) Anta Limited manufactures and sells Motor King to customers dividend into High Quality, Medium Quality and Low Quality motor Kings and categories below:

	Sales Price	Involved Cost	Commission on Sales
	GH¢	GH¢	GH¢
High quality	3,400	1,200	80
Medium quality	2,300	1,080	60
Low quality	1,700	690	40

It is on record that sale quantities of Low Quality Motor King is twice compared to Medium and High Quality Moto Kings. Annual fixed cost of GH¢310,000 is expected to be incurred.

You are required to:

i. Compute the sales mix. **(1 mark)**

ii. Compute the unit contribution margin for each brand of Motor King. **(4 marks)**

iii. Compute the weighted average unit contribution. (**4 marks)**

iv. Compute break even sales in volume and in sales. (**4 marks)**

v. How many motor kings should be sold to earn target profit of GH¢15,000? (**3 marks)**

(Total=20 marks)

SUGGESTED SOLUTIONS

QUESTION ONE

a) i) **Basic cost standard** represents constant standard that are unchanged over long period. The main advantage of basic standard is that a base is provided for comparison with actual cost through a period of years with the same standard and efficiency trends can be established over time. When changes occur in the method of production, price levels or other relevant factors, basic standards are not very useful since they do not represent current target.

ii) **Ideal standards** – This represent perfect performance. Ideal standards are minimum cost that are possible under the most efficient operating condition. They are unlikely to be used because they may have negative impact on employee performance.

iii) **Currently attainable standards** – This standard represent those cost that should be incurred under efficient operating conditions. They are difficult but not impossible to achieve. Allowance are made for normal spoilage, machine breakdowns and idle cost.

b) The **purpose of standard costing** are:

i) Prediction of future cost that can be used for decision making.

ii) Provide a challenging target that can serve as a motivation for employee.

iii) Assist in setting target.

iv) Act as control device by highlighting exceptions

v) Simplifying the task of tracing cost to product for measuring profitability and inventory valuation.

c) **Problems of standard costing** in modern environment are

i) Variance analysis concentrates on only a narrow range of costs, and does not give sufficient attention to issues such as quality and customer satisfaction.

ii) Standard costing pays too much emphasis on direct labour cost. Direct labour is only a small proportion of cost in modern manufacturing environment and so this emphasis is not appropriate.

iii) Many of the variances in standard costing system focus on the control of short term variable costs. In modern manufacturing environment majority of cost including direct labour cost tends to be fixed in the short run.

iv) The use of standard costing relies on existence of repetitive operations and relatively homogeneous output. Nowadays many Organisation are forced continually to respond to customers' changing requirement, with the result that output and operations are not so repetitive.

v) Standard costing system were developed when the business environment was more stable and less prone to change. The current business environment is more dynamic and it is not possible to assume stable conditions.

vi) Standard costing system assumes that performance to standard is acceptable. Today's business environment is more focused on continuous improvement.

vii) Most standard costing systems produce control statements weekly or monthly. The modern manager needs much more prompt control information in order to function efficiently in a dynamic business environment.

d) i). Sales price variance

(Actual contribution – standard contribution) x actual quantity

(¢55 – ¢50) x 9000 = ¢45000F

Sales volume variance

(Actual volume – standard volume) x standard contribution

(9000 – 10,000) x 50 = 50000A

Total sales variance

Sales margin price variance	45000F
Sales margin volume variance	50000A
	5000A

ii). Total material variance

Material price variance + material usage variance

22,250A – 66,250A = 88,500A

iii) The total wage variance

Wage rate variance + labour efficiency variance = total wage variance

¢42,750A + ¢33,750A = ¢76,500A

iv) Total manufacturing overhead variance

Fixed overhead expenditure variance + variable overhead expenditure + variable overhead efficiency variance.

10,000F + 12,500F + 7,500A = 15,000A = 15000F

v). Reconciliation of budgeted profit to actual profit			GH¢
Budgeted net profit			200,000
Sales variances:	GH¢		
Sales margin price	45,000F		
Sales margin volume	50,000A		
	5,000A		
Direct cost variance:			
Material price	66,250A		
Material usage	22,250A		
		88,500A	
Total wage variance:			
Wage rate variance	42,750A		
Labour efficiency	33,750A		
		76,500A	
Total overhead variance			
Fixed overhead expenditure variance	10,000F		
Variable overhead expenditure var	12,500F		
Variable overhead efficiency Var	7,500A		
		15,000F	
			155,000A
Profit			**45,000**

QUESTION TWO

a)

BUDGETED INCOME STATEMENT FOR BROFRE COMPANY LIMITED

	DECEMBER	**JANUARY**	**FEBRUARY**	**MARCH**
	GHS	**GHS**	**GHS**	**GHS**
SALES	400,000	460,000	529,000	608,350
OPENING STOCK		20,000	22,000	24,000
PURCHASES		347,000	398,750	458,263
COST OF GOODS AVAILABLE		**367,000**	**420,750**	**482,263**
LESS CLOSING STOCK		22,000	24,000	26,000
COST OF SALES		**345,000**	**396,750**	**456,263**
GROSS PROFIT		115,000	132,250	152,088
OPERATING EXPENSES	60,000	66,000	72,600	79,860
DEPRECIATION		34,900	34,900	34,900
TOTAL EXPENSES		100,900	107,500	114,760
NET PROFIT		**14,100**	**24,750**	**37,327**

b)

BUDGETED STATEMENT OF FINANCIAL POSITION

	DEC	JAN	FEB	MAR
	GHS	GHS	GHS	GHS
NON CURRENT ASSETS	698,000	698,000	698,000	698,000
LESS DEPRECIATION	98,000	132,900	167,800	202,700
BOOK VALUE	600,000	565,100	530,200	495,300
CURRENT ASSETS				
STOCK	20,000	22,000	24,000	26,000
DEBTORS	23,000	26,450	30,418	34,980
CASH BALANCE	55,000	100,550	150,233	221,897
TOTAL	98,000	149,000	204,650	282,878
TOTAL ASSETS	698,000	714,100	734,850	778,178
CURRENT LIABILITIES				
CREDITORS	48,000	50,000	46,000	52,000
OWNERS CAPITAL	530,000	530,000	530,000	530,000
RETAINED EARNINGS	120,000	134,100	158,850	196,178
capital plus liabilities	**698,000**	**714,100**	**734,850**	**778,178**

c)

CASH BUDGET

INFLOW	**GHS**	**GHS**	**GHS**
CASH RECEIVED FROM DEBTORS	456,550	525,033	603,787
OUTFLOW			
PAYMENT TO CREDITORS	345,000	402,750	452,263
OPERATING EXPENSES	66,000	72,600	79,860
TOTAL OUTFLOW	**411,000**	**475,350**	**532,123**
NET CASH FLOW	**45,550**	**49,683**	**71,665**
BALANCE B/F	55,000	100,550	150,233
BALANCE C/D	**100,550**	**150,233**	**221,897**

However if a student depreciate the asset at 5 per the quarter divided by 3 to obtain 11,633 it should be accepted as a correct answer. This will affect profit, depreciation and accumulated depreciation.

WORKINGS

DEBTORS			
BALANCE B/F	23,000	26,450	30,418
ADD SALES	460,000	529,000	608,350
LESS CLOSING DEBTORS	-26,450	-30,418	-34,980
CASH RECEIVED	456,550	525,033	603,787
CREDITORS			
BALANCE B/F	48,000	50,000	46,000
ADD PURCHASES	347,000	398,750	458,263
LESS CLOSING			
CREDITORS	-50,000	-46,000	-52,000
CASH PAID	345,000	402,750	452,263

QUESTION THREE

a)

Calculation of contribution that will be lost if Double bed cease production

	GHC
Potential loss of Revenue	2,800,000
Less:	
Potential savings of material cost	1,400,000
Potential savings in variable labour cost 60% x 1,050,000	630,000
Potential savings in variable manufacturing overhead 50%x650, 000	325,000
Potential savings in variable administrative costs 20%100,000	20,000
Total potential savings in variable cost	2,375,000
Potential contribution to fixed cost that will be lost	425,000

From this calculation it implies that a contribution of GHC425, 000 will be lost if double bed production ceases. Profit will decline by this figure since fixed cost component will still be incurred. Therefore the company should continue production.

Student who approach it the long way to achieve a profit reduction of GHC425, 000 should be awarded the full marks as shown below.

ALTERNATIVELY

INCOME STATEMENT

	Single Beds	Double Beds	King Size Beds	total
	GHC	GHC	GHC	GHC
SALES	2,500,000.00	2,800,000.00	3,800,000.00	9,100,000.00
MATERIAL COST	750,000.00	1,400,000.00	1,520,000.00	3,670,000.00
LABOUR COST	600,000.00	1,050,000.00	1,200,000.00	2,850,000.00
M O'HEAD	200,000.00	650,000.00	300,000.00	1,150,000.00
ADMIN	200,000.00	100,000.00	200,000.00	500,000.00
TOTAL COST	1,750,000.00	3,200,000.00	3,220,000.00	8,170,000.00
PROFIT	750,000.00	(400,000.00)	580,000.00	930,000.00

INCOME STATEMENT

	SB (GHS)	FIXEDCOST REMAINING(GHS)	KSB(GHS)	TOTAL(GHS
SALES	2,500,000.00		3,800,000.00	6,300,000.00
MATERIAL COST	750,000.00		1,520,000.00	2,270,000.00
LABOUR COST	600,000.00	420,000.00	1,200,000.00	2,220,000.00
M O'HEAD	200,000.00	325,000.00	300,000.00	825,000.00
ADMIN	200,000.00	80,000.00	200,000.00	480,000.00
TOTAL COST	1,750,000.00	825,000.00	3,220,000.00	5,795,000.00
PROFIT	750,000.00	(825,000.00)	580,000.00	505,000.00

In this case profit reduced from GHC 930,000 to GHC 505,000 a reduction of GHC425, 000

b)

Income statement for 80 units of each product

	Single bed	Double bed	King Size bed	total
	GHC	**GHC**	**GHC**	**GHC**
Sales	(500x80)40,000	(800x80)64,000	(950x80)76,000	180,000
Mat	(150x80)12,000	(400x80)32,000	(380x80)30,400	74,400
Lab	(80x72) 5,760	(180x80)14,400	(180x80)14,400	34,560
Man	(80x20) 1,600	(80x92.86)7,428.57	(80x 37.5)3,000	12,028.57
Admin	(80 x 8) 640	(80x5.71) 457.14	(80x10) 800	1,897.14
Total variable cost	**20,000**	**54,285.71**	**48,600**	**122,885.71**
Contribution	20,000	9714.29	27,400	57,114.29
Less incremental FC				80,000
Loss on order				**22,885.71**

The order should be rejected because it will result in incremental loss of GHS 22,885.71 unless shalom is ready to pay higher price to copy the additional cost associated with producing the extra units.

QUESTION FOUR

a) The relevant cost for determining the EOQ are the **holding cost** and the **ordering cost**.

The Holding cost includes:

i. -opportunity cost of investment in stock
ii. -incremental insurance cost.
iii. -incremental warehouse and storage cost
iv. -incremental material handling cost.
v. -cost of obsolescence and deterioration of stock.

The ordering cost includes:

i. -Clerical cost of preparing purchase order purchase order
ii. -Receiving deliveries
iii. -paying invoices

b) The **three motives** for holding stock.

i. **Transaction motive** - this occurs whenever there is a need to hold stocks to meet production and sales requirement and that it is not possible to meet this requirement instantaneously.

ii. **The precautionary motive** – If a firm decides to hold an additional amount of stock to cover the possibility that it may have underestimated its future production and sales requirement or when the supply of raw materials may be unreliable because of uncertain event affecting the supply of raw materials this is called precautionary motive for requiring stock.

iii. **Speculative motive** – When it is expected that future inputs prices may change, a firm might maintain higher or lower levels of stock to speculate on the expected increase or decrease in future prices. Quantitative models does not take into consideration the speculative motives, but management should be aware that optimum stock levels do depend to a certain extent on expected price movement. If input prices is expected to rice then management should stock to take advantage of input price savings.

c) **Economic order quantity** – this is the ordering quantity where total cost of holding and ordering cost is at its minimum. It is the most economical quantity to order in order to minimize both incremental holding cost and ordering cost.

Relevance of Economic Order Quantity

- It is relevant in the sense that it is the optimal quantity that ensure optimal use of resources.
- It is also relevant because it will assist to ensure that there will be minimal occurrence of stock out and excessive holding of stock with its associated consequence like inability to satisfy customers, deterioration and high rate of losses due to overstocking.

d)

EOQ = $\sqrt{\frac{2 \text{ X D X O}}{\text{H}}}$

Where D represent annual demand
O represents cost per order
H represents holding cost per units

But holding cost is 5% of the unit purchase price which is unknown therefore we need to determine the purchase cost

- Selling price = sales / units = 20,000,000/200,000 = GHC 100
- MARK UP is 25% on cost therefore X + 0.25X = 100

X(1+0.25) = 100

X = 100/1.25 =GHC 80
Therefore purchase price per unit is GHC80
Holding cost per unit = 5% x ¢80 = ¢4

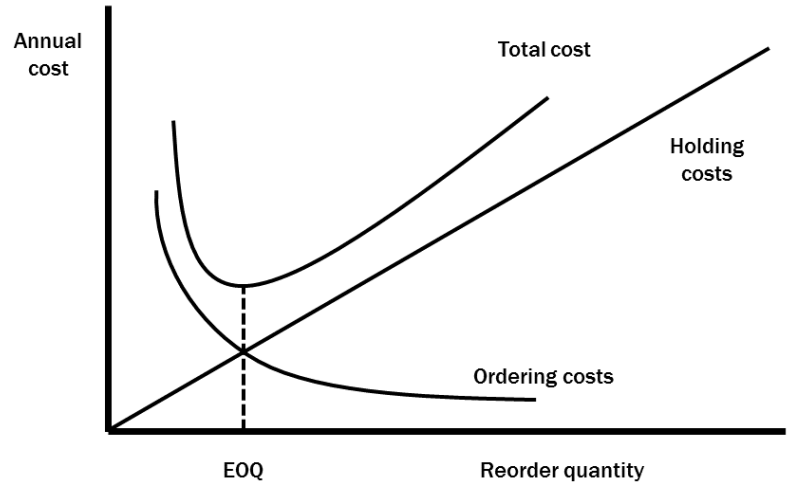
EOQ = $\sqrt{\frac{2 \text{ X } 200{,}000\text{X } 200}{4}}$ = 4,472

ii. ANNUAL **ORDERING COST** = 200,000/EOQ X 200 = GHC8,945

200,000/ 4,472 X 200 = GHC 8,945

iii. **EOQ/2 X HOLDING COST PER UNIT** = 4,472/2 X 4 = 8,945

iv.



iv. The number of times in a year the company have to order.

Annual demand / EOQ

200,000/ 4472 = **APPROX 45 times**

v. EOQ X PURCHASE PRICE

4472 X 80 = GHC 357,760

QUESTION FIVE

i) The behavior of total revenue is linear. This implies that the price of the product or service will not change as sales volume varies within the relevant range.

ii) The behavior of total expenses is linear over the relevant range. This implies expenses can be categorized as fixed, variable or semi-variable. Total fixed expenses remain constant as activity changes, and unit variable expenses remains unchanged as activity varies.
Secondly, the efficiency of the production process and workers remain constant.

iii) In multi-product organizations the sales mix remain constant over the relevant range.

iv) In manufacturing firms, the inventory at the beginning and end of the period are the same. This means unit produced are all sold.

b)

i. Sales mixed = 2: 1: 1

50%:25%:25%

ii. Unit contribution:

		Sales		vc		
Contribution: High	=	(3,400 – 1,200 + 80)	=	1,120 x 0.25	=	530
Medium	=	(2,300 – 1,080 + 60)	=	1,160 x 0.25	=	290
Low	=	(1,700 – 690 + 40)	=	970 x 0.50	=	485

iii. Contributions-weighted **1,305**

iv. Break even FC = GHC310,000

$$= \frac{310{,}000}{1{,}305} = 237.5 = 238$$

In proportion of High = 59.5 = 60

Medium = 60 Low = 119

Break even in sales value

High	60 units X 3,400	=	¢204,000
Medium	60 units X 2,300	=	¢138,000
Low	119 units x 1,700	=	¢202,300
Total sales			¢ 544,300

v. FIXED COST + PLANNED PROFIT = 310,000 = 249
Weighted average contribution 1,305

HIGH	0.25	X	249	= 62
MEDIUM	0.25	X	249	= 62
LOW	125	X	249	= 125

Alternative Solution that must be accepted

i. Sales mix = 4 : 1: 1
66.67%: 16.67%: 16.67 %

ii.

	Sales	VC		
High	(3,400 - 1200 +80)	=	2120 x0.1667 =	353
Medium	(2,300 - 1080 +60)	=	1160 x0.1667 =	193
Low	(1700 – (690+40)	=	970 x 0.6667 =	647

iii. Weighted average contribution **1,193**

iv. Break-even point in sales = fixed cost/weighted average contribution

¢ 310,000 = 260
1,193

		UNITS	SALES VALUE
HIGH	260 X 0.1667 =	43	
MEDIUM	260 X 0.1667 =	43	
LOW	260 X 0.6667 =	174	

HIGH	43 X 3,400	=	¢146,200
MEDIUM	43 X 2,300	=	¢146,200

LOW	174 X 1,700	=	¢295,800
TOTAL SALES			**¢588,200**

v. UNITS AT PLANNED PROFIT

$$= \frac{\text{FIXED COST + PLANNED PROFIT}}{\text{WEIGHTED AVERAGE CONTRIBUTION}}$$

$$= 310{,}000 + 15000 / 1193 = 272.42 = 272$$

HIGH	=	272 X 0.1667	=	45
MEDIUM	=	272 X 0.1667	=	45
LOW	=	272 X 0.6667	=	182

EXAMINER'S COMMENT

A good number of students scored above 15-20 marks in question 1, 4, and 5, however most students performed poorly in question three the budget question. This may be due to the fact that these questions were much clearer in content than question two and three. An average number score almost 10 in question 2a and zero in 2b again emphasizing lack of clarity or understanding of the subject areas namely relevant cost analysis, and decision accounting.

This clearly shows that students lack knowledge in basic costing techniques and the concepts of relevant data/information, and opportunity cost concepts. Students also lacked the ability to identify and isolate relevant cost that affects a decision to accept additional orders. This led to general failure of student to pass question three b.

Student should also study well to understand how to prepare quarterly budget using their costing knowledge and be able to derive missing figures where necessary.

In question five, most student were unable to calculate the multiproduct approach to breakeven analysis, also signifying that they have not covered breakeven analysis in detail.

Students were clearly not prepared in topics such as multiproduct breakeven analysis, computation of mark up when profit percentage is given on cost but selling price can be derived, whilst cost per unit is not available in the question. This simple calculation made students failed woefully in the (d) part of question five as well. In all marks allocated were reasonable and question content in terms of load was also reasonable.