



CPA PART III SECTION 5

ADVANCED MANAGEMENT ACCOUNTING

WEDNESDAY: 29 November 2017.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

QUESTION ONE

- (a) Tripa Ltd. is a company that specialises in the production of umbrellas. For the year ending 31 December 2018, the company is planning to produce special promotional umbrellas branded "Jumbo". Tripa Ltd. wishes to determine the optimal number of umbrellas that should be produced.

**Additional information:**

1. If all the umbrellas are sold within the year 2018, they would be sold at Sh.900 each.
2. If the company is unable to sell all the umbrellas within the year 2018, then they would be sold in the following year at Sh.300 per umbrella.
3. The production cost per umbrella amounts to Sh.400.
4. The demand for the umbrellas depends on the performance of the economy which is highly unpredictable.

The following are the possible states of economy:

Economy	Probability	Demand (Number of umbrellas)
Good	0.30	500,000
Average	0.46	350,000
Poor	0.24	300,000

5. Tripa Ltd. has to decide to produce the umbrellas at one of the states of the economy in order to match forecast demand.
6. The opportunity cost of not selling an umbrella that is demanded is Sh.100.

**Required:**

- (i) Construct a pay off table showing all the possible outcomes. (6 marks)
- (ii) Advise the management of Tripa Ltd. on the optimal level of production based on the expected value, maximax and maximin criteria. (9 marks)

- (b) Sori Ltd. produces and sells three products; A, B and C. Sori Ltd. has contracts to supply products A and B which will utilise all the specific materials that are available to make these two products during the next period.

The revenue that these contracts will generate and the contribution to sales (C/S) ratios of products A and B are as follows:

	Product A	Product B
Revenue	Sh.10 million	Sh.20 million
C/S ratio	15%	10%

**Additional information:**

1. Product C will generate a contribution to sales (C/S) ratio of 25%.
2. The total fixed costs of Sori Ltd. are Sh.5.5 million during the next period.
3. The management have budgeted to earn a profit of Sh.1 million.

**Required:**

The revenue that needs to be generated from product C for Sori Ltd. to achieve the budgeted profit. (5 marks)

(Total: 20 marks)

## QUESTION TWO

- (a) One of the major purposes of a budget is operational control. Through budgeting, management tries to match actual results to outcomes.

**Required:**

Other than control, discuss four other purposes of a budget.

(8 marks)

- (b) Actross Ltd., a subsidiary of Master Pack Ltd., a packaging company is preparing a budget for the year ending 30 June 2018. In respect of fuel consumption, the company desires to estimate an equation in the form of  $y = a + bx$ , where "y" is the total expense at an activity level "x", "a" is the fixed cost and "b" is the variable cost.

The following information relates to the year ended 30 June 2017:

Year and Month	Machine hours Sh."000"	Fuel expenses Sh."000"
2016		
July	34	640
August	30	620
September	34	620
October	39	590
November	42	500
December	32	530
2017		
January	26	500
February	26	500
March	31	530
April	35	550
May	43	580
June	48	680

The annual total and monthly average figures for the year ended 30 June 2017 were as follows:

	Machine hours Sh."000"	Fuel expenses Sh."000"
Annual total	420	6,840
Monthly average	35	570

**Required:**

Estimate the fixed and variable elements of fuel expense from the above data using the following methods:

- (i) High-low. (3 marks)
- (ii) Least squares regression. (7 marks)
- (c) From the information in (b) above, the coefficient of determination arising is approximately 0.25. Interpret the significance of this information. (2 marks)

(Total: 20 marks)

## QUESTION THREE

- (a) Measuring customer performance in the context of a firm encompasses using generic measures to assess the impact of various strategies on customers.

**Required:**

With regard to performance measurement in the service industry, identify three key indicators of customer performance measurement. (6 marks)

- (b) Wood Master Ltd. makes quality wooden benches both for indoor and outdoor use. Results have been disappointing in recent years and a new managing director has been appointed in order to boost the production volumes.

After an initial assessment, the director has noted that the budgets had been set at easily achievable levels for employees. He argues that employees would be better motivated by setting budgets that challenged them more in terms of higher expected output other than changing the overall budgeted output. The director has not yet altered the standard cost card. The budgeted output and sales for the month of October 2017 was 4,000 benches.

The standard cost card at this output level is provided below:

	<b>Sh.</b>
Wood (25 kgs at Sh.32 per kg)	800
Labour (4 hours at Sh.80 per hour)	320
Variable overheads (4 hours at Sh.40 per hour)	160
Fixed overheads (4 hours at Sh.160 per hour)	<u>640</u>
Total standard cost	<u>1,920</u>
Selling price	<u>2,200</u>
Standard profit	<u>280</u>

**Additional information:**

- Overheads are absorbed on the basis of labour hours and the company uses an absorption costing system.
- Stocks are valued at standard cost. There were no stocks at the beginning of the month of October 2017.
- Actual results for the month of October 2017 were as follows:

	<b>Sh. "000"</b>
Wood (80,000 kgs at Sh.35 per kg)	2,800
Labour (16,000 hours at Sh.70 per hour)	1,120
Variable overheads	600
Fixed overheads	<u>1,960</u>
Total production cost (3,600 benches)	6,480
Closing stock (400 benches at Sh.1,920 each)	<u>(768)</u>
Cost of sales	<u>5,712</u>
Sales (3,200 benches)	<u>7,200</u>
Actual profit	<u>1,488</u>

- The average monthly production and sales for some years prior to October 2017 had been 3,400 units and budgets had previously been set at this level. Very few operating variances had historically been generated by the standard cost used.
- The finance director suggested that an absorption costing system is misleading and that marginal costing system should be considered at some stage in the future to guide decision making.

**Required:**

- The operating variances. (10 marks)
- A statement reconciling the actual profit and the budgeted profit for Wood Master Ltd. (4 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) Bipo Ltd. is planning to launch a new product into the market. In order to determine the introduction selling price of the product, a market research was undertaken. The following information has been obtained from the research under two possible selling prices; Sh.300 and Sh.350 per unit:

Selling price per unit Sh.300		Selling price per unit Sh.350	
Probability	Sales volumes (units)	Probability	Sales volume (units)
0.4	120,000	0.3	108,000
0.5	110,000	0.3	100,000
0.1	140,000	0.4	94,000

**Additional information:**

- The variable production cost would be Sh.120 per unit for production volumes up to and including 100,000 units each year. However, if production exceeds 100,000 units each year, the variable production cost per unit would fall to Sh.110 for all units produced.
- Advertising costs would be Sh.9,000,000 per annum at a selling price of Sh.300 and Sh.9,700,000 per annum at a selling price of Sh.350.
- Fixed production costs would be Sh.4,500,000 per annum.

**Required:**

Advise the management of Bipo Ltd. on the optimal selling price per unit for the new product. (11 marks)

- (b) The Lofters group comprises two companies namely; W Ltd. and Zed Ltd. W Ltd. is a trading company with two divisions; the Design division which designs wind turbines and supplies the designs to customers under license and the Gearbox division, which manufactures gearboxes for the car industry.

Zed Ltd. manufactures components for gearboxes. It sells the components globally and also supplies W Ltd. with components for its Gearbox division.

The financial results for the two companies for the year ended 31 December 2017 are as follows:

	W Ltd.		Zed Ltd.
	Design Division	Gearbox Division	
	Sh."000"	Sh."000"	Sh."000"
External sales	14,300	25,535	8,010
Sales to Gearbox division			<u>7,550</u>
			15,560
Cost of sales	(4,900)	(16,200)	(5,280)
Administrative costs	(3,400)	(4,200)	(2,600)
Distribution costs	-	(1,260)	(670)
Operating profit	<u>6,000</u>	<u>3,875</u>	<u>7,010</u>
Capital employed	<u>23,540</u>	<u>32,320</u>	<u>82,975</u>

The cost of sales in the Gearbox division includes the cost of components purchased from Zed Ltd.

**Required:**

Evaluate the performance of Zed Ltd. and each division of W Ltd. using the following performance measures:

- (i) Return on capital employed (ROCE). (3 marks)
- (ii) Asset turnover. (3 marks)
- (iii) Operating profit margin. (3 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Environmental management accounting (EMA) is complementary to the conventional financial management accounting approach with the aim of developing appropriate mechanisms that assist in identification and allocation of environmental related costs.

With reference to the above statement, highlight four areas for the application of EMA. (4 marks)

- (b) Trans Ltd. supplies a product branded "BBG". Although the annual demand for BBG is high, it varies considerably.

The demand during lead time and the associated probabilities are as follows:

Demand during lead time	Probability
600	0.25
650	0.23
700	0.12
750	0.10
800	0.08
850	0.05
900	0.05
950	0.04
1,000	0.03
1,050	0.03
1,100	0.02

**Additional information:**

1. Trans Ltd. places 5 orders annually.
2. The ordering cost per order amounts to Sh.6,000.
3. The carrying cost amounts to Sh.1,000 per unit.
4. The estimated stock-out cost is Sh.5,000 per unit.
5. The re-order point is 850 units.
6. The lead time is 12 working days.

**Required**

- (i) Advise the management of Trans Ltd. on the amount of safety stock to be maintained. (14 marks)
- (ii) Determine the probability of stock-out. (2 marks)

**(Total: 20 marks)**

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