

KASNEB

CPA PART III SECTION 5

ADVANCED MANAGEMENT ACCOUNTING

PILOT PAPER

September 2015.

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) Langa Langa Ltd. was privatised three years ago. The board of directors are trying to enhance performance for the benefit of shareholders. The board has introduced the use of economic value added (EVA) as a key performance indicator.

The following financial information is available for the year ended 30 June 2015.

| | Sh. "million" |
|--|---------------|
| 1. Income statement | |
| Sales | 575 |
| Operating costs | (460) |
| Operating profit | 115 |
| Finance costs | (38) |
| Profit before tax | 77 |
| Corporate tax at 30% | (23.1) |
| Profit after tax | <u>53.9</u> |
| 2. Statement of financial position indicates capital employed as at 1 July 2014 as Sh.1,060 million. | |
| 3. Operating costs include: | |
| | Sh. "million" |
| Research and development costs | 20 |
| Depreciation | 98 |
| Goodwill amortised | 11.5 |
| Advertising costs | 3.5 |
| 4. Goodwill written off in the previous years amounted to Sh.34.5 million. | |
| 5. Economic depreciation is approximately Sh.114 million. | |
| 6. Cost of capital is as follows: | |
| Equity | 18% |
| Debt | 10% |
| Debt to equity ratio | 60% |

Required:

Calculate the company's performance using EVA.

(10 marks)

- (b) The executive director of Theta Ltd. attended a seminar on performance measurement organised by a management consulting firm. He identified the following areas to be assessed:

1. Financial return to shareholders.
2. Maintain high market share.
3. Increase productivity annually.
4. Offer up to date product range of high quality.
5. To be known as responsible employer.
6. To acknowledge sound responsibility.
7. To grow and survive autonomously.

Required:

- (i) Suitable measures of performance for each of the stated goals.
- (ii) Explain one goal that could be considered to be sufficient to incorporate all others.

(7 marks)

(3 marks)

(Total: 20 marks)

QUESTION TWO

- (a) "Just in Time (JIT) manufacturing enables purchasing, production and sales to occur in quick succession with inventory being maintained at minimum level.

Required:

With reference to the above statement, explain three problems associated with adoption of JIT system. (3 marks)

- (b) Katibu Ltd. holds regular stocks of sports equipment. For one of the stock item, they have decided to use economic order quantity with no stock out model.

Additional information:

1. The equipment have erratic demand but on average they sell 400 items per week, with the standard deviation of 125 units per week.
2. The items are supplied by a foreign supplier at Sh.800 per item. Lead time is 3 weeks.
3. The predicted annual stock holding cost is 15% of inventory value.
4. Delivery and order processing is approximately 12 man hours with wages being Sh.25.600 per week for a 40 hours week.
5. Assume normal distribution on demand.

Required:

- (i) Calculate the economic order quantity (EOQ). (3 marks)
- (ii) Suppose the company is incorrect in its predicted delivery and order processing costs but correct in all other predictions. If the actual cost is Sh.12,000, compute the maximum amount that the company should pay to discover true incremental costs. (6 marks)
- (iii) Determine the re-order point and the buffer stock held if there is to be no more than 1% chance of stock-out during the re-order period. (4 marks)
- (iv) If managers set re-order level at 1,500 units, what is the probability of stock-out on any given order cycle. (2 marks)
- (v) How many times would you expect stock-out during the year. (2 marks)

(Total: 20 marks)

QUESTION THREE

- (a) Identify four factors to be considered before deciding whether to investigate variances. (4 marks)
- (b) The management accountant might use opportunity cost in the following situations:
- (i) Non routine decisions such as accept or reject special offer.
 - (ii) Make or buy decisions.
 - (iii) Setting of transfer prices from one division to another.

Required:

Discuss giving examples the use of opportunity cost in each of the above cases. (5 marks)

- (c) Sally manufacturing Ltd. manufactures a product using three types of raw materials; "Exe", "Wye" and "Zed". The managing director is concerned that material costs have been increasing over time.

The management accountant has suggested the use of statistical quarterly control (SQC) charts to monitor the variance movements.

Additional information:

1. The production capacity is 10,000 units and the company is operating at full capacity. The usage per unit of output is 2.5 kgs of each raw material.
2. Cost records shows the following monthly usage of the raw materials:

| Month | Exe (kgs) | Wye (kgs) | Zed (kgs) |
|----------|-----------|-----------|-----------|
| January | 24,250 | 26,000 | 25,750 |
| February | 26,000 | 23,500 | 24,000 |

| Month | Exe (kgs) | Wye (kgs) | Zed (kgs) |
|-----------|-----------|-----------|-----------|
| March | 27,750 | 24,250 | 23,500 |
| April | 26,000 | 25,250 | 26,750 |
| May | 30,500 | 26,250 | 23,000 |
| June | 29,500 | 26,750 | 28,250 |
| July | 31,500 | 27,750 | 24,750 |
| August | 28,500 | 28,000 | 26,500 |
| September | 29,250 | 28,750 | 25,250 |
| October | 30,750 | 29,750 | 23,250 |
| November | 29,750 | 30,000 | 24,500 |
| December | 31,000 | 30,500 | 26,000 |

- The standard usage is 25,000 kgs per month with a standard deviation of 2,500 kgs per month.
- The management accountant is suggesting investigation of any usage greater or less than two deviations from the expected ($\pm 2\sigma$).

Required:

- Indicate the variance investigation decisions. (3 marks)
 - Present the SQC charts for material usage for the period and make the necessary conclusions. (8 marks)
- (Total: 20 marks)**

QUESTION FOUR

- Explain the importance of recognising the effects of learning curves when preparing performance reports. (4 marks)
- Explain how companies might introduce a cost reduction programme without affecting its customer's perceptions of product values. (4 marks)
- The finance director of Estimator Solutions Ltd. have availed to you the following data for a company:
 - The company has one single manufacturing department.
 - The cost data available relate to the last 16 months as follows:

| Departmental overhead cost (Sh.'000') | Direct labour hours ('000') | Direct material quantity (kgs.) ('000') | Number of orders processed ('000') |
|---------------------------------------|-----------------------------|---|------------------------------------|
| 25,835 | 878 | 970 | 88 |
| 24,451 | 1,088 | 934 | 100 |
| 28,611 | 1,281 | 667 | 108 |
| 32,361 | 1,340 | 1,243 | 110 |
| 28,967 | 1,090 | 964 | 90 |
| 24,817 | 1,067 | 903 | 67 |
| 29,975 | 1,188 | 876 | 88 |
| 26,135 | 928 | 820 | 28 |
| 31,361 | 1,319 | 984 | 19 |
| 26,008 | 790 | 933 | 90 |
| 27,812 | 934 | 966 | 93 |
| 28,612 | 871 | 940 | 87 |
| 22,992 | 781 | 518 | 81 |
| 31,836 | 1,236 | 1,017 | 236 |
| 26,252 | 902 | 881 | 92 |
| 26,977 | 1,140 | 751 | 140 |

- A computer program has been used to analyse the above data. The results are as follows:

| Regression | Dependent variable | Independent variable | Coefficient | Standard error | t-value |
|------------|-----------------------------|----------------------|-------------|----------------|---------|
| 1 | Overhead | Labour hours | 8.50 | 1.93 | 4.4 |
| | | Materials | 6.95 | 2.21 | |
| | | Orders | 6.59 | 7.19 | 0.9 |
| | Y intercept (Sh.'000') | | 12,052 | 2,286 | 5.3 |
| | Adjusted $r^2 = 0.76$ | | 1,281 | | |
| | Standard errors of estimate | | | | |

| Regression | Dependent variable | Independent variable | Coefficient | Standard error | t-value |
|------------|-----------------------------|----------------------|-------------|----------------|---------|
| II | Overhead | Labour hours | 8.88 | 1.87 | 4.7 |
| | | Materials | 7.06 | 2.19 | 3.2 |
| | Y intercept (Sh.'000') | 12,190 | 2.267 | 5.4 | |
| | Adjusted $r^2 = 0.76$ | 1,273 | | | |
| | Standard errors of estimate | | | | |
| III | Overhead | Labour hours | 10.98 | 2.27 | 4.8 |
| | Y intercept (Sh.'000') | | 16,310 | 2.421 | 6.7 |
| | Adjusted $r^2 = 0.60$ | | | | |
| | Standard errors of estimate | | 1.646 | | |
| IV | Overhead | Labour hours | 10.68 | 3.26 | 3.27 |
| | Y intercept (Sh.'000') | | 18,277 | 2.997 | 8.14 |
| | Adjusted $r^2 = 0.39$ | | 2027 | | |
| | Standard errors of estimate | | | | |

Coefficient of correlation between variables is as follows:

| | Overhead | Labour | Material | Orders |
|----------|----------|--------|----------|--------|
| Overhead | 1.000 | | | |
| Labour | 0.7913 | 1.000 | | |
| Material | 0.6580 | 0.3489 | 1.000 | |
| Orders | 0.3253 | 0.2420 | 0.1324 | 1.000 |

Required:

- (i) The most reasonable estimate of recently experienced overhead cost function. Justify your answer. (4 marks)
 - (ii) Determine if the equation provides a useful prediction of overheads that might be experienced next month. (5 marks)
 - (iii) Explain the purpose for which the managers might use the predicted equation. (3 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) Delcom Ltd. is planning to introduce a new product. Market research information suggests that the product should sell 100,000 units over its life cycle at a price of Sh.420 per unit. The company seeks to make a mark-up of 40% of product cost. Life cycle costs of the product will be as follows:

| | Sh. | Sh. |
|----------------------------------|-----|------------|
| Design and development costs | | 10,000,000 |
| Marketing and distribution costs | | 5,000,000 |
| Manufacturing costs per unit | | |
| Direct materials | 50 | |
| Direct labour | 60 | |
| Variable production overheads | 60 | |
| Fixed production overheads | 30 | 200 |
| End of life costs | | 4,000,000 |

Required:

- (i) The lifecycle cost per unit. (3 marks)
- (ii) The product's cost gap. (2 marks)
- (iii) The management accountant estimates that if the company spends additional Sh.1,000,000 on design, manufacturing cost per unit could be reduced. Compute the maximum manufacturing cost per unit that will be tolerated if the company was to earn the required mark-up. (5 marks)

- (iv) To manage cost effectively the company should emphasis on cost management at the planning and design stage. Explain decisions that can be made at the planning and design stage which can affect the cost of product and reduce the cost gap. (4 marks)

(b) The management accountant of Rebitech Ltd. is preparing budgets for the coming period.

The following data is available for last year:

1. Sales Sh.40,000,000
Variable costs 60% of sales
Fixed cost Sh.14,000,000
2. He is worried that costs will rise next year. The inflation rates and probabilities of occurrence are provided as follows:

| Average inflation | Probability |
|-------------------|-------------|
| 4% | 0.2 |
| 6% | 0.5 |
| 8% | 0.3 |

3. Inflation will affect all variable costs and fixed costs except depreciation which will remain constant at Sh.300,000 per annum and rent (fixed lease rental) at Sh.3,000,000 per annum.
4. The sales manager has informed the accountant that it might be difficult to raise the selling price despite inflation. He estimates sales demand at current price as follows:

| | Sales Sh. | Probability |
|-------------|--------------|-------------|
| Pessimistic | 40,000,000 | 0.3 |
| Most likely | 44,000,000 | 0.4 |
| Optimistic | 52,000,000 | 0.3 |

Required:

- (i) Probability of at least breaking even. (3 marks)
- (ii) Probability of achieving a profit of at least Sh.4,000,000. (3 marks)

(Total: 20 marks)

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