



CPA PART III SECTION 5

ADVANCED MANAGEMENT ACCOUNTING

THURSDAY: 26 November 2020

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) Explain three factors to consider before investigating variances in a profit driven organisation. (6 marks)
- (b) Examine two shortcomings of financial performance measurements. (4 marks)
- (c) Blue Beach Hotel is a 5-star hotel based in Naivasha Town, Kenya. In the onset to the Kenya Athletic Federation's cross - country championship for the year 2020 due to be held in Naivasha later in the year, the hotel management has reviewed the hotel's operations with a view to streamlining activities so as to take full advantage of the event. The management has decided to package the booking options into three as follows:
  - Bed only
  - Bed and breakfast
  - Full board

The management is aware that the outcome could take any of the following possibilities for each of the booking options above:

- Full booking
- Moderate booking
- Low booking

They have worked the likely payoff amounts for the booking options under each possible outcome as per the table given below:

Events	Probability	Decision alternatives		
		Bed only Sh."000"	Bed and Breakfast Sh."000"	Full board Sh."000"
Full booking	0.30	24,000	90,000	16,000
Moderate booking	0.50	48,000	44,000	28,000
Low booking	0.20	6,000	8,000	18,000

Required:

Advise the management of the hotel on the best booking option using the following decision theory techniques:

- (i) Expected monetary value (EMV). (3 marks)
- (ii) Expected opportunity loss (EOL). (3 marks)
- (iii) A research company has offered to give more insight to the hotel management on the likely booking situations that might arise.

Determine the maximum amount the hotel should pay to the research company.

(4 marks)

(Total: 20 marks)



## QUESTION TWO

- (a) (i) Describe four benefits of product life cycle costing. (4 marks)
- (ii) JAES Ltd. is considering the purchase of a new machine for Sh.3,500,000. The company feels quite confident that it could sell the goods produced by the machine so as to yield annual cash surplus of Sh.1,000,000. There is however some uncertainty as to the machines working life.

A recently published trade association survey shows that in total the members of the association own 250 of such machines and have found the lives of the machines to vary as provided below:

Machine useful life (years)	3	4	5	6	7
Number of machines	20	50	100	70	10

Assuming a discount rate of 10%, the net present value (NPV) for each different machine life is as follows:

Machine useful life (years)	3	4	5	6	7
Net Present Value (Sh.)	(1,010,000)	(330,000)	290,000	860,000	1,370,000

### Required:

Advise the management of JAES Ltd. whether they should buy the machine. (8 marks)

- (b) Lenga Ltd. has a production capacity of 80,000 units and currently sells 20,000 units at Sh.1,000 each. The demand for the company's product is sensitive to the selling price and it has been observed that with every reduction of Sh.100 in the selling price, the demand is doubled.

### Required:

- (i) Evaluate the target cost at full capacity assuming profit margin on sales is taken as 25%. (4 marks)
- (ii) Ascertain the cost reduction scheme if at present 40% of total cost is variable with the same margin of profit assumed in (b) (i) above. (4 marks)

(Total: 20 marks)

## QUESTION THREE

- (a) Discuss the following concepts as applied in management accounting:

- (i) Throughput accounting. (3 marks)
- (ii) Environmental management accounting. (3 marks)

- (b) ABC Ltd. intends to review the selling price of one of its products branded "Reno". In the recent past, the monthly average sales of "Reno" has been 50,000 units at a standard selling price of Sh.60 per unit.

An analysis of the expected monthly demand with a price increase of either Sh.5 or Sh.10 per unit of this product is given below:

Market condition	Probability	Estimated demand with price increase of:	
		Sh.5	Sh.10
Optimistic	0.30	55,000	40,000
Most likely	0.50	40,000	25,000
Pessimistic	0.20	30,000	16,000

### Additional information:

1. The current unit variable cost is Sh.50. However, it is expected to vary in the next production period as follows:

Economic condition	Probability	Sh.
High	0.20	55
Medium	0.60	52
Low	0.20	47



2. The fixed cost of production is currently at Sh.335,000 per month. It is expected to vary as follows in the next production period:

- Increase by Sh.80,000 with a probability of 0.20
- Increase by Sh.60,000 with a probability of 0.60
- Increase by Sh.40,000 with a probability of 0.20

**Required:**

Using a probability tree simulation:

- Determine the selling price that the company should adopt to maximise profitability. (10 marks)
- The probability that the company will at least break even for each of the price increase of Sh.5 and Sh.10 per unit of product "Reno". (4 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

(a) Sawasawa Ltd. manufactures 3 units of product "Zed" per day. The sale of this product depends upon demand which has the following distribution:

Sales (units)	Probability
270	0.10
280	0.15
290	0.20
300	0.35
310	0.15
320	0.05

**Additional information:**

- The production cost and the sales price of each unit are Sh.4,000 and Sh.5,000 respectively.
- Any unsold unit is to be disposed of at a loss of Sh.1,500 per unit.
- There is a penalty of Sh.500 per unit if the demand is not met.
- The following random numbers are given:

10, 99, 65, 99, 95 01, 79, 11, 16 and 20.

**Required:**

Estimate the total profit or loss for Sawasawa Ltd. for the next 10 days. (10 marks)

(b) Beta Division, which is part of Mega Group, is considering an investment opportunity with the following information:

- An initial investment of Sh.45 million in equipment at the beginning of year 1 which will be depreciated on a straight line basis over a three year period with a nil residual value at the end of year 3.
- Net operating cash inflows in each of years 1-3 will be Sh.12.5 million, Sh.18.5 million and Sh.27 million respectively.
- The management accountant of Beta Division has estimated that the net present value (NPV) of the investment would be Sh.1,937,000 using a cost of capital of 10%.
- A bonus scheme which is based on short-term performance evaluation is in operation in all divisions within the Mega Group.

**Required:**

- Compute the residual income of the proposed investment. (3 marks)
- Comment on the values obtained in reconciling the short term and long term decision views likely to be adopted by divisional management regarding the viability of the proposed investment. (3 marks)

(c) Blade Ltd. uses decision tree analysis to evaluate potential projects. The Company has been exploring the launch of a new product which it believes has a 70% probability of success. The company is however considering undertaking an advertising campaign costing Sh.500,000 which would increase the probability of success to 95%. If successful, the product would generate income of Sh.2,000,000 otherwise Sh.700,000 would be received.

**Required:**

Using decision tree, advise the management of Blade Ltd. on the maximum amount of cash that the company should be prepared to pay for advertising. (4 marks)

**(Total: 20 marks)**



**QUESTION FIVE**

Hi-Tech Ltd. intends to launch a locally manufactured printer in the coming month of December 2020. The research and development department of the company has provided the following information relating to the production of the printer:

	Sh.	Sh.
Selling price per printer		17,500
<b>Variable production cost:</b>		
Direct materials (800 grams at Sh.7,500 per kg)	6,000	
Direct labour (75 minutes at Sh.3,000 per hour)	3,750	
Variable overheads (60% of direct labour)	<u>2,250</u>	<u>(12,000)</u>
Contribution per printer		<u>5,500</u>

**Additional information:**

1. Production of the printer is scheduled to commence on 1 December 2020.
2. The company plans to produce and sell 3,000 printers per month.
3. A direct material loss of 10% is expected with no resale value.
4. The annual fixed cost attributable to the production of the printers is Sh.60 million. This cost accrues evenly throughout the year.
5. A learning curve effect of 95% is expected.

**Required:**

- (a) Determine the standard labour cost for the month of December 2020. (6 marks)
- (b) Prepare a budget for the month of December 2020 showing the budgeted profit. (4 marks)
- (c) Assume the actual results for the month of December 2020 for the production level of 3,000 printers are as follows:

Sales (3,000 at Sh.18,000 each)	54,000
Direct materials (2,700 kgs at Sh.7,000 per kg )	18,900
Direct labour (1,700 hours at Sh.3,250 per hour)	5,525
Variable overheads	3,400
Fixed costs	<u>5,075</u>
	<u>21,100</u>

**Required:**

Reconcile the budget profit in (b) above with the actual profit showing clearly all the operating variances. (10 marks)  
**(Total: 20 marks)**

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