

QUESTION ONE

Read the Case Study below carefully and answer the questions that follow:

SMALL BIKE COMPANY. DECISION MAKING & COST CONTROL

The Small Bike Company is the idea of Charles Johnson. Charles has designed a portable bicycle that can be disassembled easily and placed in a suitcase. He is thinking about implementing the idea and going into production. Charles estimates that the fixed costs of producing between 1,000 and 3,000 portable bicycles will be \$50,000 annually. In addition, the variable cost per portable bicycle is estimated to be \$40 per bicycle.

Charles could outsource the suitcase production, which would reduce the fixed costs to \$40,000 annually and the variable costs to \$35 per bicycle. If the company makes less than 2,000 portable bicycles, there would be excess capacity that could be used to make 1,000 regular bicycles. There would be no additional fixed costs and the variable costs would be \$60 per regular bicycle. There is no other use of the space.

Assume Charles would like to make \$60,000 annually on his venture.

Required:

- a) Charles makes and sells 3,000 portable bicycles (with the suitcase), what price should Charles charge for each portable bicycle? **(3 marks)**
- b) If Charles decides to charge \$80 per portable bicycle while making the suitcase, what is the break-even number of portable bicycles? **(3 Marks)**
- c) If Charles makes 2,500 portable bicycles, should he consider buying the suitcases from an outside supplier if the supplier's price per suitcase is \$10 **(Should the Bicycles be made inhouse or be outsourced). (3 Marks)**
- d) Discuss the role of a management accountant in aiding decision-making and controlling costs within an organization. **(8 Marks)**
- e) MS Company Ltd. is a leading manufacturer of a certain consumer durable product. The company has two divisions - Engineering and Assembly. The output of the engineering division is transferred to the assembly division for further processing and assembling before being sold to the customer as complete product. Verification of the company's records reveals that the variable cost per unit of the product for engineering and assembly are Ksh.250 and Ksh.300 respectively. The fixed cost of engineering division is Ksh.15,000

and that of the assembly division is Ksh.10,000. The product variable cost per unit of engineering division is Ksh.400, and the total output is 100 units which are sold to customer on completion @ Ksh.2000 per unit. If the engineering division decides to charge its transfers to assembly division at cost plus 150%. (Assume Tax rate of 16%)

Required:

Calculate MS overall after-tax profit and the profits of its two divisions?

(8 Marks)

QUESTION TWO

- a) Describe five advantages of implementing a cost accounting system within an organization. (5 marks)
- b) EZ Rental Car offers rental cars in an off-airport location near a major tourist destination in Nairobi. Management would like to better understand the behaviour of the company's costs. One of those costs is the cost of washing cars. The company operates its own car wash facility in which each rental car that is returned is thoroughly cleaned before being released for rental to another customer. Management believes that the costs of operating the car wash should be related to the number of rental returns. Accordingly, the following data have been compiled:

Month	Rental Returns	Car wash costs
January	55	101
February	61	126
March	33	109
April	42	129
May	73	153
June	37	214
July	49	212
August	55	199
September	36	218
October	52	183
November	54	98
December	46	110

Required:

Using least-squares regression,

- i. Estimate the fixed cost and variable cost elements of monthly car wash costs. (7 Marks)
- ii. Calculate the coefficient of regression and comment. (3 marks)

QUESTION THREE

a) A car manufacturing company has two manufacturing divisions in different countries.

Division A in Kenya manufactures engines for the cars. It has a capacity to manufacture 10,000 units each year. The variable cost of production is Ksh. 8,000 and the division can sell 8,000 engines externally to customers within India at Ksh.11,000. Other division, Division B is in Italy that requires 5,000 engines every year to assemble them further into cars.

It purchases these engines from a vendor in Belgium at a price that is equivalent to Ksh.9,000. If Division B were to purchase these units from Division A, transfer price would be Ksh. 10,000. Since no selling expenses need to be incurred on internal sales, variable cost of such transfers would be Ksh.7,000. If Division A accepts the internal order from Division B, it will have to curtail some of its external sales.

Given that the tax rate is 30% in Kenya and 40% in Belgium. Determine if company will benefit overall if Division B purchases from Division A. (9 Marks)

b) Discuss how variance analysis helps in management decision-making. (6 Marks)

QUESTION FOUR

- a) XYZ Company wishes to make decision on the pricing of its single product line. The state of demand for the Company's product could be high, moderate or low. Three alternative selling prices have been identified for the Company's product: sh 6, sh 8 and sh 12.

State of Demand	Alternative Selling Prices		
	sh 6	sh 8	sh 10
High	16,000	14,000	12,500
Moderate	14,000	12,500	12,000
Low	10,000	8,000	6,000

The variable cost per unit of product is sh 3 while the total fixed cost for the period is sh 20,000. The probabilities of the states of demand are 0.2, 0.5, and 0.3 for High demand, Moderate demand, and Low demand respectively.

Required: Advise the company on the best price to set. Using

- i. Maximax criterion (3 Marks)
 - ii. Maximax criterion (3 Marks)
 - iii. Maximin criterion (3 Marks)
 - iv. Expected Monetary Value (3 Marks)
- b) Elaborate any three assumptions CVP-Analysis (3 Marks)

QUESTION FIVE

- a) Describe any three advantages of participatory budgets (3 Marks)

- b) Basic analysis ltd produces and sells one product only, the BBT, the standard cost for one unit being as follows:

	Sh.	Sh.
Direct material A - 10 kg at Sh. 20 per kg	200	
Direct material B - 5 litres at Sh. 6 per litre	30	
	30	
Fixed production overhead	<u>50</u>	
Total standard cost		<u>310</u>

The fixed overhead included in the standard cost is based on an expected monthly output of 900 units.

During April Year 1 the actual results were as follows.

Production	800 units
Material A	7,800 kgs used, costing Sh.159,900
Material B	4,300 litres used costing Sh.23,650
Direct wages	4,200 hrs worked for Sh.24,150
Fixed production overhead	Sh.47,000

Required: Calculate

- | | |
|--|-----------|
| a) Price variances for each material A and B | (4 Marks) |
| b) Usage variances for each material A and B | (4 Marks) |
| c) Labour rate variances | (2 Marks) |
| d) Efficiency variance | (2 Marks) |

QUESTION SIX

- a) A manufacturing company has acquired new machine for producing product P at a rate of 25 units per hour with a 98% rate of efficiency. The company requires to produce at least 1800 units of P per day. The 10 old machines that the company has produce 15 units of P with a 95% efficiency.

The cost of operating the new machine is Sh. 4 per hour and Sh. 3 per hour for the old ones. The cost incurred due to inefficiency is Sh. 2 per unit; It is government policy that at least 2 of the new machines must be indulged into production.

The company wishes to optimally allocate the machines in order to minimize the total manufacturing cost if the total available hours for production in a day are 8 hours. Using the linear programming, determine the cost minimizing units and plot the graph. (10 Marks)

- b) Material and meaningful variances that are investigated for further management action. List five considerations involved in the investigation. (5 Marks)