



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2023/2024

THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR  
OF SCIENCE IN FINANCE

### BFS 3352: MANAGEMENT FOR FINANCIAL INSTITUTIONS

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

#### QUESTION ONE (30 MARKS)

- a) Explain three main application of learning curve (6 marks)
- b) High-tex Engineering Company Limited wishes to set flexible budgets for each of its operating departments. A separate maintenance department performs all routine and major repair works on the company's equipment and facilities. The company has determined that maintenance department performs all routine and major repair works on the company's equipment and facilities. The company has determined that maintenance cost is primarily a function of machine hours worked in the various production departments.
- The maintenance cost incurred and the actual machine hours worked during the months of January, February, March and April 2023 were as follows:

Month	Machine hours in	Maintenance
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Foundation of Innovations

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	<b>Production departments</b>	<b>department's Costs</b>
		<b>Sh.</b>
January	800	350
February	1,200	450
March	400	150
April	1,600	550

**Required:**

- a) Determine the cost estimation function using:
- i High-low method. (5 marks)
  - ii Regression analysis (5 marks)
- b) Using the regression function estimate:
- i The maintenance costs that would have been incurred if the machine hours were expected to be 900 in the month of May 2023. (2 marks)
- c. Assume that ABC Ltd makes four components with the following information:

	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
Production (units)	1000	2000	4000	3000
Unit marginal costs				
Direct material	4	5	2	4
Direct labour	8	9	4	6
Variable O/H	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>
	<u>14</u>	<u>17</u>	<u>7</u>	<u>12</u>

Attribute	Fixed Cost	sub-contractor price
	<b>Sh.</b>	<b>Sh.</b>
TO	W 1000	W 12
	X 5000	X 21
	Y 6000	Y 10
	Z 8000	Z 14

Committed Fixed Costs are Sh.30000

**Required**

Advice the company on the components to buy or make if any. (12 marks)

## QUESTION TWO (20 MARKS)

The Hatari Weapons Ltd. desires to submit a tender for 32 “string-to-surface” rockets required by Vita Ltd. It is estimated that each rocket will cost approximately Sh.40,000,000 for material and variable overhead costs. Total fixed costs will amount to approximately Sh.1, 600,000 over the two years it will take to build the rockets all of which would have to be recovered against this contract.

The company, as a result of past experience, anticipates it could expect a 75 per cent learning curve and that the steady state would not be achieved during this production run. Building the first rocket would require approximately 400,000 hours of direct labour at a direct labour cost of Sh.150 per hour. Variable overhead costs which vary with direct labour amount to Sh.50 per direct labour hour.

Eight rockets will be built during the first year of the contract and the remaining 24 will be completed during the second year. The Hatari Weapons Ltd. always adds 25 per cent profit margin to the estimated costs of the contract for which they tender.

### Required:

- a) Calculate the total labour hours that will be required to build the 32 rockets. (8 marks)
- b) Draw up a quotation showing the total price to be quoted, with details of the constituent parts of the cost structure and the profit added. (12 marks)

## QUESTION THREE (20 MARKS)

- a) Explain the disadvantages of standard costing. (6 marks)
- b) Assume that you are planning to sell badges at the forthcoming Nairobi Show at Sh.11 each. The badges cost Sh.5 to produce and you incur Sh.2, 400 to rent a booth in the Show ground.

### Required:

- i. Compute the breakeven point in units and in shillings (4 marks)
- ii. Compute the number of units that must be sold to earn a before tax profit of 25 % (5 marks)
- iii. Compute the number of units that must be sold to earn an after tax profit of Sh.1800, assuming that the tax rate is 30 %. (5 marks)

#### QUESTION FOUR (20 MARKS)

Nyundo Ltd manufactures a product whose standard variable cost is given below:

Direct materials (2 kg @ Sh 3)	6
Direct labour (0.75 hours @ Sh 4)	3
Variable overheads	1

The company treats fixed costs as period costs and therefore they are not charged to products.

The following information relates to the month of March 2001.

	1/3/2001	31/3/2001
	Sh	Sh
Stocks (all at standard cost)		
Raw materials	12,000	6,000
Finished goods	36,000	42,500

The following information is available for the month of March 2001:

	Sh
Sales @ Sh 20 per unit	200,000
Material purchases @ Sh 3.50 per kg	42,000
Direct labour cost (8000 hours)	30,000
Variable overheads	12,000
Material price variance (adverse)	21,000

The management is wondering whether they could have performed better.

#### Required:

Calculate the following variances in each case stating two possible causes:

- a) Material usage variance (6 marks)
- b) Labour rate variance. (4 marks)
- c) Labour efficiency variance. (4 marks)
- d) Variable overhead expenditure variance: (3 marks)
- e) Variable overhead efficiency variance. (3 marks)

**QUESTION FIVE (20 MARKS)**

Farmers Limited had received an order for a piece of special machine from Naivasha Flowers Limited. Just as farmers completed the machine, Naivasha Flowers Limited was declared bankrupt, defaulted on the order, and forfeited 10% deposit paid on the selling price of Sh. 72,000,000. Farmers Limited engineering department manager identified the costs already incurred in the production of the special machine for Naivasha Flowers limited as follows:

	Sh. '000'	Sh. '000'
Direct materials used		16,600
Direct labour incurred		21,400
Overhead applied:	10,700	
Variable	5,350	
Fixed		16,050
Fixed administrative expenses		
Total cost		<u>5,405</u>
		<u>59,455</u>

**The following additional information is provided:**

1. Narok Corporation would be interested in buying the special machine if it is reworked to Narok's corporation specifications. Farmers Limited has offered to sell the reworked special machine to Narok Corporation as special order for a net price of Shs. 68,400,000. Narok Corporation has agreed to pay the net price when it takes delivery in two months time.

2. The additional identifiable costs to rework the machine to the specifications of Narok Corporation are as follows:

	<b>Sh. '000'</b>
Direct materials	6,200
Direct labour	
	<u>4,200</u>
	<u>10,400</u>

3. Farmers limited can convert the special machine to a standard model. The standard model sells for Sh. 62,500,000. The additional identifiable cost to convert the special machine to the standard model are:

	<b>Sh.</b>
Direct materials	<b>'000'</b>
Direct labour	2,850
	<u>3,300</u>
	<u>6,150</u>

4. Farmers Limited can sell the machine as it is (i.e. without modifications) for a net price of Sh.52,000,000. However, the potential buyer of the unmodified machine wants it after 60 days. They buyer offers Sh. 7,000,000 down payment with the final payment upon delivery.
5. The sales commission rate on sales of standard models is 2% while the sales commission rate on special orders is 3%. All sales commissions are calculated on the net price (i.e. list price less cash discount, if any).
6. Normal credit terms of sales of standard models are 2/10 net 30. Customers take the discounts except in rare instances. Credit terms for special orders are negotiated with the customer.
7. The applicant rates of the manufacturing overhead and the fixed selling and administrative costs are as follows:

**Manufacturing:**

Variable	50% of direct labour
Fixed	25% of direct labour

**Selling and administrative: (fixed)** 10% of the total of direct materials, direct labour and manufacturing overheads.

8. Normal time required for rework is one month.
9. A surcharge of 5% of the sales price is placed on all customer requests for minor modifications of standard models. Conversion of a special machine to a standard model is not a minor modification.
10. Farmers Limited normally sells a sufficient number of standard models for the company to operate at a volume in excess of a breakeven point.
11. Farmers Limited does not consider the time value of money in the analysis of special orders and projects whenever the time period is less than one year because the effect is not significant.

**Required:**

- (a) Determine the total contribution in shillings for each of the three alternatives  
(12 marks)
- (b) If Narok Corporation makes a counter offer, what is the lowest price farmers limited should accept for the reworked machine from Narok Corporation? Explain your answer.  
(3 marks)
- (c) Discuss the influence that fixed factory overhead costs should have on the sales quoted by Farmers Limited for special orders when:
  - (i) A firm is operation at or below the breakeven point (3 marks)
  - (ii) A firm's special orders constitute efficient utilization of unused capacity above the breakeven volume. (2 marks)