AFRICA UNIVERSITY
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"Investing in Africa's Future"

COLLEGE OF BUSINESS PEACE LEADERSHIP & GOVERNANCE

NMAC 307: STRATEGIC MANAGEMENT ACCOUNTING

END OF SECOND SEMESTER EXAMINATIONS

NOVEMBER 2021

LECTURER: DR E. MUGUTI

DURATION: 5 HOURS

INSTRUCTIONS

Answer any one question
The marks allocated to each question are shown at the end of the question.
Show all your workings where it is required.
Credit will be given for presentations that are neat, logical and grammatically well-constructed.

QUESTION 1 (60 MARKS)

PART A (30 MARKS)

Clean Soaps (Pvt) Ltd (Clean Soaps) produces various kinds of soaps and detergents and have been operating in Kadoma, Zimbabwe for more than 10 years. Intending to maximise its overall profits, the company has focused on three main types of soaps and detergents; Bathing Soap, Washing Powder and Cleaning Detergents. As a result of the improvement in the economy, Clean Soaps has recently received orders from new customers. Unfortunately, the production director is concerned about the company's production capacity to meet the expected demand. Details extracted from the company's budgets and other relevant information are provided below:

	Bathing Soap	**Washing Powder**	**Cleaning Detergents**
Selling price per unit (ZWL$)	2,80	5,30	2,40
Material Cost per unit (ZWL$)	1,00	1,50	0,80
Labour Cost per unit (ZWL$)	0,60	0,90	0,30
Annual Demand (Units)	265,000	120,800	200,000

Additional Information

1. Total budgeted production overheads for the year are expected to be ZWL$422,500. Twenty per cent (20%) of all production overheads are variable and are allocated to products based on labour hours. Fixed production overheads are considered to be period costs.

2. The company has budgeted to pay its workers a fixed rate of ZWL$24 per hour and has included 13,000 labour hours for the year in its budget.

Required:

(a) State the costing approach that Clean Soaps can use in determining the optimum production plan in cases where an organisation has short-term constraints and justify why it is most appropriate. **(5 marks)**

(a) Prepare calculations to determine whether Clean Soaps will have sufficient production capacity to meet budgeted demand for its products. **(6 marks)**

(c) Compute the optimal production plan for Clean Soaps and show the annual profit expected. **(15 marks)**

(d) Briefly explain the following terms, providing practical Zimbabwean company examples to illustrate your answer:

(i) Sunk cost.
(ii) Opportunity cost. **(4 marks)**

PART B (30 MARKS)

Bread World Ltd is a Zimbabwean registered company that manufactures a special kind of bread (soft-bread), which it sells in bulk to bakeries throughout the country. The only variable cost is raw material, which consists of three grades of raw wheat.

The standard cost of the raw materials used in the manufacture of each 100 kgs of soft-bread is as follows:

Raw Material	**Kgs**	**Standard price per Kg (ZWL$)**
Material A	25	2
Material B	60	3
Material C	40	4
Total Input	**125**	
Normal Loss (20% of input)	(25)	
Output (Soft-Bread)	**100**	

In preparing its budget for 2020, the company assumed that there would be a market in Zimbabwe for 50,000 kg of soft-bread. The budget also assumed a selling price of ZWL$6 per kg for Bread World's product.

However, during 2020 Bread World was adversely affected by diminishing consumer confidence in wheat products. Bread World only sold 33,000 kg of soft-bread.

The Managing Director of Bread World. recently explained how her company attempted to respond to the difficulties which it faced in 2020: "First, we reduced our selling price from ZWL$6 to ZWL$5,90. Second, we took advantage of falling market prices for some of the types of wheat which we use as a raw material for our product."

The actual raw materials used by Bread World in 2020 were as follows:

Raw Material	**Kgs**	**Actual price per Kg (ZWL$)**
Material A	8,800	1.70
Material B	19,200	3
Material C	12,000	4
Total Input	**40,000**	

Bread World had no opening or closing stocks of raw materials or finished product.

Required:

(a) Compute Bread World's budget and actual total contribution for 2020. **(5 marks)**
(b) Calculate the following variances for Bread World Ltd:
(i) Raw materials price; **(4 marks)**
(ii) Raw materials yield; **(4 marks)**
(iii) Raw materials mix; **(4 marks)**
(iv) Sales price. **(4 marks)**
(v) Sales volume **(4 marks)**
(c) Critically evaluate the performance of Bread World in 2020 and how it can be improved, supporting your answer by reference to the variances which you have calculated. **(5 marks)**

END OF EXAMINATION

QUESTION 2 (60 MARKS)

PART A (40 MARKS)

Pamire Ltd (Pamire) is a large diversified Zimbabwean registered company with several departments. It is concerned over the performance of one of its departments, department Polax. Pamire is concerned that department Polax has not been able to meet its sales target in recent years and is considering either to curtail the level of production or to shut down the department.

The following information has been made available:

Budgeted Sales and Production in Units	50,000 units
	ZWL$
Sales	500,000
Less Production Costs	
Material Aroma: 1kg per unit	(50,000)
Material Bica: 1 litre per unit	(25,000)
Labour: 1 hour per unit	(125,000)
Variable overhead	(100,000)
Fixed overhead	(50,000)
Non-production costs	(50,000)
Budgeted profit	**100,000**

Additional Information

(i) There are 50,000kg of Material Aroma in inventory. This originally cost ZWL$1 per kg.
Material Aroma has no other use and unless it is used by the division it will have to be dis- posed of at a cost of ZWL$500 for every 5,000 kg.

(ii) There are 30,000 litres of material Bica in inventory. Any unused material can be used by another department to substitute for an equivalent amount of a material, which currently costs ZWL$1.25 per litre. The original cost of material Bica was ZWL$0.50 per litre and it can be replaced at a cost of ZWL$1.50 per litre.

(iii) All production labour hours are paid on an hourly basis. Rumours of the closure of the department have led to a large proportion of the department's employees leaving the organisation. Uncertainty over its closure has also resulted in management not replacing these employees. The department is therefore short of labour hours and has sufficient to produce 25,000 units. Output in excess of 25,000 units would require the department to hire contract labour at a cost of ZWL$3.75 per hour. If the department is shut down the present labour force will be deployed within the organisation.

(iv) Included in the variable overhead is the depreciation of the only machine used in the department. The original cost of the machine was ZWL$200,000 and it is estimated to have a life of 10 years.

Depreciation is calculated on a straight-line basis. The machine has a cur- rent resale value of ZWL$25,000. If the machinery is used for production, it is estimated that the resale value of the machinery will fall at the rate of ZWL$100 per 1,000 units produced.
All other costs included in variable overhead vary with the number of units produced.

(v) Included in the fixed production overhead is the salary of the manager of department Polax which amounts to ZWL$20,000. If the department were to shut down the manager would be made redundant with a redundancy pay of ZWL$25,000. All other costs included in the fixed production overhead are general factory overheads and will not be affected by any decision concerning department Polax.

(vi) The non-production cost charged to department Polax is an apportionment of the total non-production costs incurred by the department.
(vii) The marketing manager suggests that either:
(a) A sales volume of 25,000 units can be achieved with a selling price of ZWL$9.00 per unit and an advertising campaign of ZWL$25,000; or
(b) A sales volume of 35,000 units can be achieved at a selling price of ZWL$7.50 with an advertising campaign costing ZWL$35,000.

Required
(a) As the management accountant of Pamire you have been asked to determine the best option available the organisation. The options to be compared are;
(i) Reduce production to 25,000 units. **(10 marks)**
(ii) Reduce production to 35,000 units. **(10 marks)**
(iii) Shut down department Polax. **(10 marks)**
(b) Explain any 5 non-quantifiable factors that Pamire should consider before deciding to shut-down department Polax. **(5 marks)**

(c) Explain the relevance of opportunity costs in decision-making, giving appropriate examples from the Pamire Case Study above.
(5 marks)

PART B (20 MARKS)

(a) Maramba Motors (Pvt) Ltd (Maramba) assembles and sells many types of diesel engines. It is considering extending its product range to include petrol engines.

An engine is produced by assembly workers assembling a variety of components. Production overheads are currently absorbed into product costs on an assembly labour hour basis.

Maramba is considering a target costing approach for its new petrol engine product.

Required:

(i) Briefly describe the target costing process that Maramba should undertake in relation to the petrol engines **(3 marks)**

(ii) Explain the benefits to Maramba of adopting a target costing approach at such an early stage in the product development process of the petrol engines**.** **(4 marks)**

(iii) Assuming a cost gap was identified in the process, outline possible steps Maramba could take to reduce this gap**. (5 marks)**

(b)

Matambira Ltd manufactures fishing rods that have a price of ZWL$125 each. Each rod has a cost of ZWL$90. A competitor is introducing a new fishing rod that will sell for ZWL$110. Management believes it must lower the price to ZWL$110 in order to compete in the highly cost-conscious fishing rod market. The Marketing department believes that the new price will allow Matambira Ltd to maintain the current sales level of 200,000 rods per year.

Required:

(i) Determine the target cost for the new price if target operating income is 25% of sales. **(2 marks)**

(ii) Calculate the target cost per unit if the selling price is reduced to ZWL$110 and the company wants to maintain its same income level. **(6 marks)**

QUESTION 3 (60 MARKS)

PART A (30 MARKS)

(a) Murahwa Limited operates a small factory in the Graniteside Industrial Area in Harare. The factory makes two types of Timber; namely, (i) Bamboo Timber and (ii) Cedar Timber and has the following constraints on weekly production.

Operative time	240 labour hours
Raw material A	500kg
Raw material B	400 litres

Bamboo Timber uses 2 labour hours, 5kg of A and 5 litres of B to make each unit.
Cedar Timber uses 3 labour hours, 5kg of A and 4 litres of B to make each unit.

The contributions to profit from each unit of Bamboo Timber and Cedar Timber are ZWL$150 and ZWL$100, respectively.

It is known that all production can be sold.

Required:

(i) Represent the above situation as a linear programming model, if the object is to maximise total weekly profit. (Denote the units of Bamboo Timber and Cedar Timber produced each week by x and y respectively). **(5 marks)**

(ii) Show the constraints from (a) above on a graph, using a spreadsheet and indicate the feasible region. **(5 marks)**

(iii) Determine the product mix which will maximise weekly profit, and the maximum weekly profit, in (a) above. **(5 marks)**

(iv) Determine the slack, if any, on the constraints in (a)? **(5 marks)**

(v) In the situation above, selling prices and the costs of materials are expected to change, with the effect that the profit contributions on Bamboo Timber and Cedar Timber become ZWL$120 and ZWL$180 respectively. Explain with supporting calculations how this change the above answers? **(5 marks)**

(b)

Assume you are the Management Accountant of Concrete Ltd, a fast-rising Zimbabwean company that manufactures and sells bulding materials. The Managing Director of Concrete Ltd has argued that break-even analysis is not important since the ultimate goal of a business is to increase shareholder's wealth, not to break-even.

Required:

Write a brief Memo to the Managing Director in response to her remarks.

(5 marks)

PART B (20 MARKS)

(a) Rairo Mapani Ltd is a Zimbabwean registered company which is comprised of two divisions, Railing and Towing. The Railing Division manufactures a single product which has the following standard production cost per unit, based on a budgeted output of 12,000 units in a given period:

	ZWL$per unit
Direct materials	16
Direct labour	12
Production overheads:	
Variable	10
Fixed	22

In a typical period, The Railing Division incurs additional non-production costs of ZWL$20,000 for selling 2,500 units to the external market for ZWL$72 per unit. The remainder of the Railing Division's output is internally transferred to the Towing Division as an intermediate product. The Towing Division's unit standard cost of converting the intermediate product into its final product is as follows:

	ZWL$ per unit
Direct labour	9
Production overheads: Variable	5
Production overheads: Fixed	8

The Towing Division incurs additional non-production costs of ZWL$57,000 per period for selling its final product to the external market for ZWL$118 per unit.

Required

(a) Calculate the profits for each of The Railing Division and the Towing Division for a period, using the following **transfer prices**:

(i) Market price **(6 marks)**
(ii) Standard variable production costs. **(4 marks)**
(iii) 120% of full standard production costs **(4 marks)**

(b) Explain any 2 practical problems that Rairo Mapani might face in setting the transfer price and how these challenges may be overcome. **(6 marks)**

PART C (10 MARKS)

Pick one Zimbabwean Manufacturing company and describe how it can manage its production processes without the use of budgets. **(10 marks)**

END OF PAPER