



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMMERCE, HUMAN SCIENCE AND EDUCATION
DEPARTMENT OF ECONOMICS, ACCOUNTING & FINANCE**

QUALIFICATION: BACHELOR OF ACCOUNTING	
QUALIFICATION CODE: 07BOAC	LEVEL: 6
COURSE CODE: CMA612S	COURSE NAME: COST & MANAGEMENT ACCOUNTING 202
SESSION: NOVEMBER 2023	PAPER: PRACTICAL AND THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINERS:	H Namwandi, H Kangala, S Lishokomosi & S Tjitjo
MODERATOR:	E Kangootui

<p style="text-align: center;">INSTRUCTIONS</p> <ul style="list-style-type: none">• This question paper is made up of four (4) questions.• Answer All the questions in blue or black ink only.• You are advised to pay due attention to expression and presentation. Failure to do so will cost you marks.• Start each question on a new page in your answer booklet and show all your workings.• Questions relating to this paper may be raised in the initial 30 minutes after the start of the paper. Thereafter, candidates must use their initiative to deal with any perceived error or ambiguities and any assumption made by the candidate should be clearly stated.

PERMISSIBLE MATERIALS

Non-programmable calculator

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

Question 1**25 Marks**

Stay Clean manufactures and sells a small range of kitchen equipment. Specifically, the product range contains a dishwasher (DW), a washing machine (WM) and a tumble dryer (TD). The TD is of a rather old design and has for some time generated negative a contribution. It is widely expected that in one year's time, the market for this design of TD will cease, as people switch to a washing machine that can also dry clothes after the washing cycle has completed.

Stay Clean is trying to decide whether or not to cease the production of TD now or in 12 months' time when the new combined washing machine/drier will be ready. To help with this decision, the following information has been provided:

- The normal selling prices, annual sales volumes and total variable costs for the three products are as follows:

	DW	WM	TD
Selling price per unit	N\$200	N\$350	N\$80
Material cost per unit	N\$70	N\$100	N\$50
Labour cost per unit	N\$50	N\$80	N\$40
Contribution per unit	N\$80	N\$170	(N\$10)
Annual sales	5 000 units	6 000 units	1 200 units

- It is thought that some of the customers that buy a TD also buy a DW and a WM. It is estimated that 5% of the sales of WM and DW will be lost if the TD ceases to be produced.
- All the direct labour force currently working on the TD will be made redundant immediately if TD is ceased now. This would cost N\$6 000 in redundancy payments. If Stay Clean waited for 12 months the existing labour force would be retained and retained at a cost of N\$3 500 to enable them to produce the new washing/drying product. Recruitment and training costs of labour in 12 months' time would be N\$1 200 in the event that redundancy takes place now.
- Stay Clean operates a just-in-time (JIT) policy and so all material costs would be saved on the TD for 12 months if TD production ceased now. Equally, the material costs relating to the lost sales on the WM and DW would also be saved. However, the material supplier has a volume-based discount scheme in place as follows:

Total annual expenditure (N\$)	Discount
0 – 600 000	0%
600 001 – 800 000	1%
800 001 – 900 000	2%
900 001 – 960 000	3%
960 001 and above	5%

- Stay Clean uses this supplier for all its materials for all the products it manufactures. The figures given above in the cost per unit table for material cost per unit are net of any discount Stay Clean already qualifies for.
- The space in the factory currently used for the TD will be sublet for 12 months on a short-term lease contract if production of TD stops now. The income from that contract will be N\$12 000.

- The supervisor (currently classed as an overhead) supervises the production of all three products spending approximately 20% of his time on the TD production. He would continue to be fully employed if the TD ceases to be produced now.

REQUIRED:		Marks
(a)	Calculate and recommend whether or not it is worthwhile ceasing to produce the TD now rather than waiting 12 months (ignore any time value of money adjustment)	(18)
(b)	Briefly describe three issues that Stay Clean should consider if it decides to outsource the manufacture of one of its future products.	(3)
(c)	Explain the terms 'sunk cost' and 'opportunity cost'.	(4)
Show all your workings!		
Total		25

Question 2

25 Marks

Golden Ltd produces 3 types of Chandelier lights – the Diamond X, the Pearly Y, and the Mirrored Z with the following details.

	Diamond X	Pearly Y	Mirrored Z
Selling Price (N\$)	350	400	300
Cost-to-profit ratio	80%	70%	75%

Golden Ltd has a production process that involves 3 stages in 3 departments. First, the products start in the production Assembly department where the structure of the lights is put together. Secondly, the products go through the Electrical department where the technical work is done enable technical functionality. Finally, the Accessories department then beautify and adds the distinct final touches for each chandelier by using diamonds for the Diamond X, Pearls for the Pearly Y, and mirrors to make the Mirrored Z. The following is a time allocation of the different Chandeliers spent in the company's 3 departments per unit:

	Assembling	Electrical	Accessories
Diamond X (hours per unit)	4	2	2
Pearly Y (hours per unit)	2	1	2
Mirrored Z (hours per unit)	6	4	1

Due to labour availability, the above departments have maximum limitations on the available hours. The Assembling department has 12,000 hours available, while the Electrical and Accessories departments have 11,000 and 9,000, respectively. Furthermore, Golden Ltd can only produce a total of 300 units of the Pearly Y chandelier, due to the limited supply of quality pearls.

REQUIRED:		Marks																																																						
(a)	Formulate a linear programming model that Golden Ltd can use to maximize profit using the following notations for the products: <ul style="list-style-type: none"> • X – Diamond X • Y – Pearly Y • Z – Mirrored Z 	(9)																																																						
(b)	Assist Golden Ltd in formulating the initial simplex tableau for the above model, using the above defined notations for the products. Use the following notations for slack variables: <ul style="list-style-type: none"> • S1 – Slack for the Assembling department • S2 – Slack for the Electrical department • S3 – Slack for the Accessories department • S4 – Slack for any demand or supply limits NB: You are not required to solve the initial table.	(9)																																																						
(c)	Interpret the final simplex tableau below, except for Column S4: NB: You are not required to interpret Column S4.	(7)																																																						
<table border="1"> <thead> <tr> <th>Variable</th> <th>X</th> <th>Y</th> <th>Z</th> <th>S1</th> <th>S2</th> <th>S3</th> <th>S4</th> <th>Solution</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>1</td> <td>0</td> <td>-1.5</td> <td>0.25</td> <td>0</td> <td>0</td> <td>-0.5</td> <td>2,850</td> </tr> <tr> <td>S2</td> <td>0</td> <td>0</td> <td>1</td> <td>-0.5</td> <td>1</td> <td>0</td> <td>0</td> <td>5,000</td> </tr> <tr> <td>S3</td> <td>0</td> <td>0</td> <td>-2</td> <td>-0.5</td> <td>0</td> <td>1</td> <td>-1</td> <td>2,700</td> </tr> <tr> <td>Y</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>300</td> </tr> <tr> <td>Contribution</td> <td>0</td> <td>0</td> <td>-105</td> <td>17.5</td> <td>0</td> <td>0</td> <td>85</td> <td>235,500</td> </tr> </tbody> </table>			Variable	X	Y	Z	S1	S2	S3	S4	Solution	X	1	0	-1.5	0.25	0	0	-0.5	2,850	S2	0	0	1	-0.5	1	0	0	5,000	S3	0	0	-2	-0.5	0	1	-1	2,700	Y	0	1	0	0	0	0	1	300	Contribution	0	0	-105	17.5	0	0	85	235,500
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Question 3

(25 marks)

Sardinia restaurant has been examining the profitability of its set menu. At the beginning of the year, the selling price was based on the following predicted costs:

		N\$
Starter	<i>Soup of the day</i>	
	100g of mushrooms @ N\$30 per kg	3.00
	Cream and other ingredients	2.00
Main course	<i>Roast beef</i>	
	Beef 0.10kg @ N\$150 per kg	15.00
	Potatoes 0.2kg @ N\$2.50 per kg	0.50
	Vegetables 0.3kg @ N\$9 per kg	2.70
	Other ingredients and accompaniments	2.3023
Dessert	<i>Fresh tropical fruit salad</i>	
	Fresh fruit 0.15kg @ N\$30 per kg	4.50

The selling price was set at N\$75 which produced an overall gross profit of 60%. During October 2023 the number of set menus sold was 860 instead of 750 budgeted: this increase was achieved by reducing the selling price to N\$70. During the same period an analysis of the direct costs incurred showed:

	N\$
90kg of mushroom	3 000
Cream and other ingredients	1 600
70kg of beef	11 480
180kg of potatoes	400
270kg of vegetables	2 500
Other ingredients and accompaniments	2 000
140kg of fresh fruit	4 500

There are no inventories of ingredients at the beginning or end of the month.

REQUIRED:		Marks
(a)	Calculate the budgeted profit for the month of October 2023.	(1)
(b)	Calculate the actual profit for the month of October 2023.	(1)
(c)	Prepare a statement that reconciles your answers (a) and (b) above, showing the variances in as much detail as possible (round off your final variances to be used for reconciliation to the nearest whole number).	(19)
(d)	Prepare a commentary going to the restaurant manager that identifies and discusses the two most significant variances.	(4)
Show all your workings!		
Total		25

Question 4

(25 marks)

A division of Bud plc is engaged in the manual assembly of finished products F1 and F2 from bought in components. These products are sold to external customers. The budgeted sales volume and prices for month 9 are as follows:

Product	Units	Price
F1	34 000	N\$50
F2	58 000	N\$30

Finished goods inventory holding budgeted for the end of month 9 is 1 000 units of F1 and 2 000 units of F2 with no stock at the beginning of that month. The purchased components C3 and C4 are used in the finished products in the quantities shown below. The unit price is for just-in-time delivery of the components. The company holds no component stocks.

	Components	
Product	C3	C4
F1 (per unit)	8 units	4 units
F2 (per unit)	4 units	3 units
Price (each)	N\$1.25	N\$1.80

The standard direct labour times and labour rates and the budgeted monthly manufacturing overhead costs for the assembly and finishing departments for month 9 are given below:

Product	Assembly	Finishing
F1 (per unit)	30 minutes	12 minutes
F2 (per unit)	15 minutes	10 minutes
Labour rate (per hour)	N\$10	N\$12
Manufacturing overhead cost for the month	N\$617 500	N\$204 000

Every month a predetermined direct labour hour recovery rate is computed in each department for manufacturing overhead and applied to items produced in that month.

The selling overhead of N\$344 000 per month is applied to products based on a predetermined percentage of the budgeted sales value in each month.

REQUIRED:		Marks
(a)	Prepare summaries of the following budgets for month 9: i. Component purchase and usage (units and value). ii. Direct labour (hours and value). iii. Departmental manufacturing overhead recovery rates. iv. Selling overhead recovery rate. v. Inventory value at the month end.	(4) (2) (1) (1) (1)
(b)	Tabulate the standard unit cost and profit of each of F1 and F2 in month 9.	(11)
(c)	Prepare a budgeted profit and loss account for month 9 which clearly incorporates the budgeted values obtained in (a) above.	(5)
Show all your workings!		
Total		25

THE END

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17/10/2023