



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY  
FACULTY OF MANAGEMENT SCIENCES**

**DEPARTMENT OF ACCOUNTING, ECONOMICS & FINANCE**

<b>QUALIFICATION: BACHELOR OF ACCOUNTING</b>	
<b>QUALIFICATION CODE: 07BOAC</b>	<b>LEVEL: 6</b>
<b>COURSE CODE: CMA612S</b>	<b>COURSE NAME: COST AND MANAGEMENT ACCOUNTING 202</b>
<b>SESSION: JANUARY 2020</b>	<b>PAPER: PRACTICAL AND THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>SECOND OPPORTUNITY QUESTION PAPER</b>	
<b>EXAMINERS:</b>	H Namwandi, K Tjondu and A Makosa
<b>MODERATOR:</b>	K Boamah

<b>INSTRUCTIONS</b>
<ul style="list-style-type: none"><li>• This examination paper is made up of four (4) questions.</li><li>• Answer All the questions and in blue or black ink.</li><li>• Show all your workings.</li><li>• Start each question on a new page in your answer booklet and show all your workings.</li><li>• 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.</li></ul>

**PERMISSIBLE MATERIALS**

Non-programmable calculator

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

**Question 1****(30 marks)**

WZ Limited (WZ) is a manufacturing company with two factories. The company's West factory currently produces a number of products. Four of the products use differing quantities of the same resources. Details of these four products and their resource requirements are as follows:

<b>Product</b>	<b>J N\$/unit</b>	<b>K N\$/unit</b>	<b>L N\$/unit</b>	<b>M N\$/unit</b>
Selling price	56.00	40.00	78.00	96.00
Direct labour (N\$8 per hour)	20.00	16.00	24.00	20.00
Direct material A (N\$3 per litre)	6.00	3.00	0	9.00
Direct material B (N\$5 per kg)	10.00	0	15.00	20.00
Variable overhead (note 1)				
Labour related	1.25	1.00	1.50	1.25
Machine related	1.25	2.00	0.75	1.00
<b>Total variable cost</b>	<b>38.50</b>	<b>22.00</b>	<b>41.25</b>	<b>51.25</b>
<b>Other data</b>	<b>Per unit</b>	<b>Per unit</b>	<b>Per unit</b>	<b>Per unit</b>
Direct material A (litres per unit)	2	1	-	3
Direct material B (kg per unit)	2	-	3	4
Labour hours per unit	2.5	2	3	2.5
Machine hours per unit	5	8	3	4
	<b>Units</b>	<b>Units</b>	<b>Units</b>	<b>Units</b>
Maximum demand per week	1 100	3 700	2 950	4 750

**Notes:**

1. An analysis of the variable overhead shows that part of it is driven by the number of labour hours and the remainder is driven by the number of machine hours.
2. Currently WZ purchases a component, "P", from an external supplier for N\$35 per component. A single unit of this component is used in producing "N", the company's only other product. Product "N" is produced in the company's other factory (East) and does not use any of the resources identified above. Product "N" currently yields a positive contribution. WZ could manufacture component "P" in its West factory, but to do so would require: 1 hour of direct labour, 0.5 machine hours, and 2kgs of direct material B. WZ purchases 500 components per week. WZ could not produce the component in its East factory.
3. The purchasing manager has recently advised you that the availability of direct materials A and B is likely to be restricted to 21 000 litres and 24 000 kilograms per week respectively. The restriction is unlikely to change for at least 10 weeks. No restrictions are expected on any other resources.
4. WZ does not hold inventory of either finished goods or raw materials.

REQUIRED		Marks
a)	Calculate: <ol style="list-style-type: none"> <li>i. The net cost or saving to WZ per unit of P by manufacturing the component internally.</li> <li>ii. Whether either direct material A or B will be a scarce resource during the next 10 weeks. Assume that 500 P components will be produced.</li> <li>iii. Whether WZ should continue to purchase the component P or whether it should manufacture it internally during the next 10 weeks.</li> </ol>	19
b)	Prepare a statement to show the optimum weekly usage of the West factory's available resources.	4
c)	<ol style="list-style-type: none"> <li>i. Assuming no other changes, calculate the purchase price of component P at which your advice in part a) above would change.</li> <li>ii. Explain two non-financial factors that should be considered before deciding whether or not to manufacture the component internally.</li> </ol>	2 2
d)	If you were to solve part b) above using linear programming, state the following: <ol style="list-style-type: none"> <li>i. The objective function</li> <li>ii. The inequality for the material A constraint</li> <li>iii. The inequality for the material B constraint</li> </ol>	3
<b>Total Marks</b>		<b>30</b>

**QUESTION 2****(25 Marks)**

Tree (Pty) Ltd, a small company, was established two years ago and manufactures a single wood product. It has enjoyed spectacular growth since its inception, with demand for the product continuously supply.

You are a business consultant. The managing director has asked you to undertake a full assessment of the organization's performance for the first six months of its financial year. Tree (Pty) Ltd's part-time accountant has prepared the following:

<b>Tree (Pty) Ltd</b>			
<b>Assessment of performance from 1 April 2018 to 30 September 2018</b>			
	Original budget# 1/04/2018 to 30/09/18	Actual results 1/04/2018 to 30/09/2018	Variance
	N\$	N\$	N\$
Sales	3 250 000	4 026 000	776 000 F
Less: Manufacturing costs	1 960 000	2 692 200	732 200 A
Raw materials (wood)	500 000	787 500	287 500 A
Direct labour	260 000	423 500	163 500 A
Overheads- factory	1 200 000	1 638 000	438 000 A
Closing inventory	-	(156 800)	156 800 F
Manufacturing profit	1 290 000	1 333 800	43 800 F
Add: Over-absorbed fixed overheads	-	288 000	288 000 F
Less: Overheads - administration	1 000 000	1 000 000	Nil
Profit	290 000	621 800	331 800 F

#Not flexed

The following information is relevant:

1. You may assume that the original budget and actual results presented above are correct.
2. The organization uses a standard absorption costing system and values its closing inventory at standard cost.
3. Budgeted sales and production were planned at 25 000 units. Tree (Pty) Ltd had no opening inventory of raw material, work-in-progress or finished inventory.
4. Actual unit sales exceeded budgeted unit sales by 32 per cent and there was a closing inventory of finished goods of 2 000 units. The actual selling price per unit remained unchanged during the six-month period. There was no inventory of raw material or work-in-progress at the end of the period.
5. On 1 April 2018 Tree (Pty) Ltd acquired a new lathe which was to reduce raw materials losses in the production process and improve operating efficiencies. Prior to the acquisition of the new lathe, the organization assumed a standard input loss of raw materials of 20 per cent. The revised standard loss on raw materials input with the new lather is 10 per cent. The organization budget took into account the revised standard.
6. The finished wood product is made to exact standard. Precisely 1.8 metres of wood output from the lathe is required to manufacture one unit of finished wood product. You may therefore assume that each unit of finished wood product actually used 1.8 metres of processed wood output from the lathe. Tree (Pty) Ltd purchased the raw materials wood (that is, wood which has not yet been processed through the lathe) for N\$10.50 per metre during the period 1 April to 30 September 2018.

7. The standard labour time to make one unit is one hour. The workers are paid according to an hourly rate. The actual labour hours worked during the six-month period totaled 38 500.
8. Budgeted factory overheads were estimated as follows:  
40% - variable  
60% - fixed
9. An analysis of the organisation's actual factory overheads during previous reporting periods showed the following:

Production (units)	20 000	40 000
Overheads (dollar)	N\$1 080 000	N\$1 440 000

The same actual overhead cost and volume relationships occurred in the current period.

	REQUIRED	MARKS
(a)	Calculate all relevant variances in as much detail as possible.  (Note: You are not required to calculate a fixed overhead volume capacity or volume efficiency variance)	(20)
(b)	Comment briefly on Tree (Pty) Ltd's performance and give possible reasons for only the sales and materials variances.	(5)
	<b>TOTAL MARKS</b>	<b>(25)</b>

### Question 2

**(25 marks)**

Makalani is a manufacturing company. It has a small permanent workforce, but it is also reliant on temporary workers, whom it hires on three-month contracts whenever production requirements increase. All buying of materials is the responsibility of the company's purchasing department and the company's policy is to hold low levels of raw materials in order to minimise inventory holding costs. Makalani uses cost plus pricing to set the selling prices for its products once an initial cost card has been drawn up. Prices are then reviewed on a quarterly basis. Detailed variance reports are produced each month for sales, material costs and labour costs. Departmental managers are then paid a monthly bonus depending on the performance of their department.

One month ago, Makalani began production of a new product. The standard cost card for one unit was drawn up to include a cost of N\$84 for labour, based on seven hours of labour at N\$12 per hour. Actual output of the product during the first month of production was 460 units and the actual time taken to manufacture the product totalled 1 860 hours at a total cost of N\$26 040.

After being presented with some initial variance calculations, the production manager has realised that the standard time per unit of seven hours was the time taken to produce the first unit and that a learning rate of 90% should have been anticipated for the first 1 000 units of production. He has consequently been criticised by other departmental managers who have said that, 'He has no idea of all the problems this has caused.'

REQUIRED		MARKS
(a)	Calculate the labour efficiency planning variance and the labour efficiency operational variance AFTER taking account of the learning effect. Note: The learning index for a 90% learning curve is $-0.1520$	(7)
(b)	Discuss the likely consequences arising from the production manager's failure to take into account the learning effect before production commenced.	(10)
(c)	The theory of learning curves is limited because it will only hold if a number of conditions apply. Briefly discuss those conditions.	(8)
<b>TOTAL MARKS</b>		<b>(25)</b>

**Question 4**

**(20 Marks)**

Wollongong wishes to calculate an operating budget for the forthcoming period. Information regarding products, costs and sales levels is as follows:

<b>Product</b>	<b>A</b>	<b>B</b>
Materials required		
X (kg)	2	3
Y (litres)	1	4
Labour hours required		
Skilled (hours)	4	2
Semi-skilled (hours)	2	5
Sales level (units)	2 000	1 500
Opening inventory (units)	100	200

Closing inventory of materials and finished goods will be sufficient to meet 10 per cent of demand. Opening inventory of material X was 300 kg and for material Y was 1000 litres. Material prices are N\$10 per kg for material X and N\$7 per litre for material Y. Labour costs are N\$12 per hour for the skilled workers and N\$8 per hour for the semi-skilled workers.

REQUIRED		MARKS
	Prepare the following budgets:	
	i. Production (units)	(8)
	ii. Materials usage (kg and litres)	(2)
	iii. Material purchases (kg, litre and N\$)	(10)
	iv. Labour (hours and N\$)	(5)
<b>TOTAL MARKS</b>		<b>(20)</b>

**THE END**