UNIVERSITY OF JOHANNESBURG

Department of Commercial Accounting

Cost and Management Accounting 1A

CCZ1-1

Last Assessment Opportunity
June 2016

Time: 3 hours **Marks:** 100

Assessors: Mrs M Vermaak
Mrs J West
Ms M Maselesele
Mr D du Plessis
Mr R Rhodes

Internal moderator: Mrs L Pelcher

INSTRUCTIONS:

- This paper consists of 13 pages (including the cover page and 2 pages of formulae.)
- Answer all questions. Show all calculations and workings clearly.
- Start each question on a new page.
- Do not use Tippex or write in pencil.
- Silent, non-programmable calculators may be used.
- Round all calculations appropriately as applicable

QUESTION	TOPIC	MARKS	TIME
1	Introduction	5	9 minutes
2	Cost classification & Calculation	10	18 minutes
3	Material	8	14 minutes
4	Material	12	22 minutes
5	Labour	20	36 minutes
6	Cost Behaviour	8	14 minutes
7	Overheads	22	40 minutes
8	CVP	15	27 minutes
		100	**180 minutes**

QUESTION 1 **5 MARKS**

Answer True or False to the following questions:

1.1	A fixed cost remains unchanged irrespective of the level of output.	(½)
1.2	A variable cost remains constant in total if the level of output changes.	(½)
1.3	A semi-variable cost changes when the level of output changes.	(½)
1.4	Rent paid on factory premises is an example of a fixed cost.	(½)
1.5	Indirect materials is an example of a fixed cost.	(½)
1.6	The salary of the financial accountant is a commercial cost.	(½)
1.7	The maintenance on factory machinery is a production cost.	(½)
1.8	The cost of tea and coffee served in the factory canteen is a commercial cost.	(½)
1.9	Telephone rental plus metered calls is a mixed cost.	(½)
1.10	Bonuses paid to factory workers is an administrative cost.	(½)

QUESTION 2 **10 MARKS**

Tracy has a small company manufacturing children's wooden furniture. She has given you the information below and asked that you help organise the data so that it makes sense for her management information.

Expense	**Total spent**
Wood carvers wage	R125 000
Rent paid for the production premises	R72 000
Electricity paid for the production premises	R12 500
Wood issued to the wood carvers	R26 000
Lease on the administration computer	R1 800
Advertising on the local radio station	R4 000
Audit fees paid	R2 000

REQUIRED:

(Show all formulas and calculations)

2.1 Calculate the prime costs (2)

2.2 Calculate the manufacturing overhead costs (2)

2.3 Calculate the conversion costs (2)

2.4 Calculate the total manufacturing costs (2)

2.5 Calculate the total non-manufacturing costs (2)

Question 3 **8 MARKS**

A company manufacturing flower boxes on a continuous basis requests that you assist them in determining the most economic order quantity of pre-cut wooden bases, one of their raw materials. The following information is available:

Normal lead time	3 weeks
Maximum lead time	5 weeks
Average weekly usage	1 082 bases
Annual storage cost per unit	R1.50
Cost of placing an order	R280
Production weeks per year	48 weeks

Note: The average weekly usage and the maximum weekly usage do not differ substantially.

REQUIRED:

(Show all formulas used as well as the calculations)

3.1 Economic Order Quantity (3)

3.2 Safety Inventory (3)

3.3 Average Inventory (Economic) (2)

QUESTION 4 **12 MARKS**

Photo First has decided to sell canvases in addition to their portrait painting service. They started keeping a record of the inventory by keeping an inventory ledger card.

Photo First uses a weighted average method (WAM) to value its material.

The following information is available for August 2015:

Aug 02 Inventory on hand 300 units at R75 per unit.

Aug 06 Invoice received from Frames Ltd for 560 units at a total cost of R50 400.

Aug 09 Issued to manufacturing department 260 units.

Aug 11 Delivery made from Paint All Ltd of 880 units at a cost of R105 per unit.

Aug 13 300 of the units received on the 11th Aug were returned to the supplier due to wrong colour delivered.

Aug 16 Manufacturing department returned 60 units issued to manufacturing on the 9th August.

REQUIRED:

4.1 Use the weighted average method (WAM) to determine the value of the closing inventory of the raw material on 16 August. Use an inventory ledger card in the following format to present your answer: (9)

Date	Description	Receipts			Issues			Balance		
		Units	Unit Price	Value	Units	Unit Price	Value	Units	Unit Price	Value

4.2 Prepare the inventory valuation using the FIFO method for the first three transactions. (3)

QUESTION 5 **20 MARKS**

Question 5.1

Mr. Munchies sells fast food. The kitchen staff work eight hour shifts. The normal working hours is 40 hours per week. The overtime premium for overtime is 1.5 times the normal rate, for overtime worked from Monday to Saturday. If employees work on a Sunday the premium is double the normal rate. Employees must first work the minimum hours per week before they can claim overtime.

Each employee receives a housing allowance of 10% of their normal pay. Employees also contribute 7.5% of their normal pay towards pension fund and R200 per week towards medical aid. The business is registered for UIF. The company contributes 6% towards the Pension fund and R150 per week towards medical aid. PAYE rate is 18%.

Mr. Munchies employs 5 staff members in the Kitchen who earn R85 per hour and 2 Front counter staff who earn R90 per hour. On average all staff work the same hours each week.

The timesheets for the last week in April 2016 is:

	1 Kitchen staff member	**1 Front counter staff member**
Monday	9	8
Tuesday	11	10
Wednesday	8	8
Thursday	10	10
Friday	8	8
Saturday	5	6
Sunday	2	4

REQUIRED:

5.1 Calculate the net wage payable for one front counter staff member. (8)

Question 5.2

The kitchen staff at Mr. Munchies work eight hour shifts. The normal working hours is 40 hours per week. Mr. Munchies contributes 6% towards the pension fund and R150 per week towards medical aid of all employees, and pays a housing allowance of 10% of the employee's normal wage. The employees receive a bonus of 25% of their annual normal pay when they take their annual leave of 2 weeks. In addition to their two weeks leave, all employees will be on leave for the week between the 25th and 31st of December (making their leave 3 weeks in total.). There will be 12 public holidays which fall during the week in 2016. Idle time is estimated to be 8%.

Mr. Munchies employs 5 staff members in the Kitchen who earn R85 per hour.

5.2 Calculate the labour recovery rate for kitchen staff.
(Hint: Start by calculating the Total Cost to Company.) (12)

QUESTION 6 **8 MARKS**

Daniel, the owner of Daniels car wash has found that his income changes depending on the number of cars he washes per month. Daniel wants to predict what his costs are going to be in the future, and has asked you to assist him with some calculations. He has given you the following information for the previous three months:

	January	**February**	**March**
No of cars washed	1 500	1 900	2 000
Income for the month	R61 000	R63 500	R76 000

REQUIRED:

6.1 Use the high-low method to calculate the variable cost per unit. (3)

6.2 Use the high-low method to calculate the fixed cost per month. (2)

6.3 Use the answers from question 6.1 and 6.2 to predict the total cost for April if Daniel washes 2 200 cars. (3)

QUESTION 7 **22 MARKS**

CupCakes CC started a year ago and specialises in baking gourmet cupcakes for any event or occasion. Cupcakes are baked on order and is based on the specifications and requirements of the customers. All the cupcakes are baked on the premises and the production takes place in two departments – Mixing and Baking. Mixing is labour intensive and Baking is highly automated. The warehouse department is a service department to the production departments

All cupcakes are decorated according to client specifications and the icing for each batch of cupcakes is therefore mixed individually. CupCakes CC only uses fresh ingredients and have negotiated with their suppliers to deliver all ingredients when needed within a two hour time frame. All suppliers require cash on delivery. CupCakes CC also spent a large amount on the marketing of their now famous cupcakes in the first month.

The success of CupCakes CC is due to chef Jean Pierre's innovative ideas for which he is rewarded with a substantial monthly salary. All other employees are paid on a weekly basis for the hours worked except the company's cost accountant, Julia who is also paid a fixed monthly salary.

The following information has been prepared by Julia, the company's cost accountant:

	Mixing	**Baking**	**Warehouse**	**Total**
Production overheads	R777 140	R1 054 333	R193 640	R2 205 113
Details of other costs:				
Rent of property (Floor area)				R1 409 400
Uniform expenses (no of employees)				R197 000

Additional information	**Mixing**	**Baking**	**Warehouse**
Number of machine hours	211 500	420 000	11 500
Number of employees	112	48	60
Labour hours	294 000	126 000	10 000
Floor area occupied (m^2)	3 000	1 500	500
Value of machinery	R240 000	R500 000	R40 000

REQUIRED:

7.1 Prepare a schedule of the primary allocation of overheads for CupCakes CC. (9)

7.2 Prepare a schedule of the secondary allocation of the service department to the production departments. The Baking department must be allocated 60% of the Warehouse costs and the Mixing department gets 40%. (5)

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7.3 Calculate an overhead recovery rate for each department. Make use of Machine hours for baking- and labour hours for mixing departments. (3)

7.4 Classify each of the following costs as a fixed- or variable cost over the short term:

- Butter icing used to decorate the cupcakes
- Rent of the property
- Monthly salary paid to the chef
- Electricity costs
- Delivery cost of ingredients. (5)

QUESTION 8 **15 MARKS**

An extract of WD Elements Ltd's statement of comprehensive income for last year appears below:

Sales		R1 500 000
Cost of sales:		575 000
Direct materials	R250 000	
Direct labour	150 000	
Variable production overhead	75 000	
Fixed production overhead	100 000	
Gross profit		925 000
Selling, general, and administrative costs:		
Variable	200 000	
Fixed	250 000	450 000
Net operating income		R 475 000

REQUIRED:

Round all calculations except percentages to the nearest whole number.

8.1 Calculate the marginal income in rand value MI(r). (3)

8.2 Calculate the marginal income ratio MI%. (1)

8.3 Calculate the break-even point in rand value. (2)

8.4 Calculate the sales value if a Profit of R750 000 is required. (3)

8.5 Calculate the sales value if a profit of 30% on sales is required. (3)

8.6 Draw the CVP Graph showing the following: (3)

- Fixed cost line
- Variable cost line
- Sales line
- Break-even point
- Area of Profit
- Area of Loss

[TOTAL MARKS 100]

Formula sheet for CCZ1-1

Material

EOQ

$$\sqrt{\frac{2 \times C \times U}{H + (P \times i)}} \qquad \sqrt{\frac{2 \times D \times O}{H + (P \times i)}}$$

Alternative EOQ

$$\sqrt{\frac{2 \times C \times U}{H}} \qquad \sqrt{\frac{2 \times C \times U}{H}}$$

Safety Inventory

Maximum weekly usage x (Maximum lead time – normal lead time)

Re-Order level

(Normal weekly usage x normal lead time) + Safety Inventory

Economic Average Inventory

(EOQ / 2) + Safety Inventory

Accounting Average Inventory

(Opening Inventory + Closing Inventory) ÷ 2

High-Low

Total cost (TC)

TC = TVC + FC

Total Variable Cost (TVC)

TVC = VC per unit x Units produced

Variable Cost per unit

$$\frac{\Delta \text{ Value } \textit{(High Value – Low Value)}}{\Delta \text{ Volume } \textit{(High units – Low Units)}}$$

Fixed Cost

FC = TC - TVC

CVP Analysis

Marginal Income in Rands (MI(r))

MI(r) = SP(u) *Selling price per unit* – VC(u) *Variable cost per unit*

Marginal Income Ratio (MI(%))

$$MI(\%) = \frac{MI(u)}{SP(u)} \times \frac{100}{1}$$

Break Even Units BE(u)

$$BE(u) = \frac{FC}{MI(r)}$$ *(Fixed Costs)*

Break Even Rand value BE(r)

$$BE(r) = \frac{FC}{MI(\%)}$$ *(Fixed Costs)*

Margin of Safety in units MoS(u)

MoS(u) = Sales Units – BE(u)

Margin of Safety in rands

MoS(r) = Sales in rands – BE(r)

OR = MoS(u) x SP *(selling price per unit)*

Margin of Safety Ratio

$$MoS(\%) = \frac{MoS(r)}{Sales} \times \frac{100}{1}$$

Sales, in rands, required for a fixed profit

$$SRP(r) = \frac{FC + P}{MI(\%)}$$ *(profit)*

Sales, in Units, required for a fixed profit

$$SRP(u) = \frac{FC + P}{MI(r)}$$ *(profit)*

Sales, in rands, required for a Profit percentage on sales value

$$SRPP(r) = \frac{FC + P}{MI(\%) - P\%}$$ *(profit)*