Principles of Management Accounting

(MAC2601)

TUTORIAL LETTER 103 – General exam guidelines and additional questions for practice

DEPARTMENT OF MANAGEMENT ACCOUNTING

BAR CODE

CONTENTS

1 INTRODUCTION

Dear Student

Enclosed in this tutorial letter please find the following:

- Some guidance on the general format of the May/June 2013 exam for MAC2601
- Additional questions for practicing some of the module contents

Kind regards,

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LECTURERS: MAC2601

2 GENERAL EXAM INFORMATION

- The MAC2601 May/June 2013 exam question paper will consist of:
  - 100 marks, of which:
    - 20% will be made up of multiple-choice questions
    - 80% will be made up of written questions
  - 8 questions, of which:
    - Question 1 will contain ten multiple-choice sub-questions of two marks each
    - Questions 2 – 8 will be written questions

- Question 1 (multiple-choice questions) will be a combination of theory and short calculations. Write down the number of each sub-question in your answer book with the respective correct alternative next to the number. No mark-reading sheet will be provided.

- Questions 2 – 8 (written questions) contain mostly calculations (by "calculations" we also include statements and accounts which may have to be prepared), but also some theory

- Questions 2 – 8 (written questions) vary between 10 and 15 marks each

- Questions 2 – 8 (written questions) are broken up into smaller sections (sub-sections) varying between 1 and 8 marks each

- Each of the twelve topics will be examined in either the multiple-choice questions, or the written questions, or both

- The duration of the paper is 2 hours. This means you have 1,2 minutes (72 seconds) per mark. However, remember that it takes some time to write down the required details, to page through the paper, etc. and rather plan to use slightly less than 1,2 minutes per mark.

- Show and clearly cross-reference **all** your workings, as this module is mainly based on principles and the markers often refer to calculations to award marks if the final answer is incorrect.

- Time management is very important. Proper time management is critical for your success. The following are a few hints with regard to time management and other exam techniques:

  - It is important to study ALL the study units. Do not SPOT – management accounting topics are easily integrated with each other and therefore it is highly probable that you will regret leaving out certain study units.

  - Practise by doing questions within the allocated time limits. You can practice time management techniques on the additional questions in section 3 of this tutorial letter – although these questions are not an indication of what will be asked in the exam, we have provided time limits for each of the questions so that you can also use them to practice time management.

  - In your practice questions and in the exam, do not exceed the allocated minutes per individual question. Move on to the next question if the time for a question is over – remember to apply the 1,2 minutes per mark also to sub-sections of questions so that you will not spend all your time for a question on only one or two sub-sections if there are more.

- Try to earn as many marks as possible as early as possible in attempting a question.

- On the day of the exam: Remember your watch and your non-programmable calculator.

- You will be provided with the necessary answer book in the examination venue. Make sure that you fill in your student number correctly on the front page of the answer book, but do not write your student number on every page, as this wastes precious time.

- Do not re-write the "required" of the question or write down any unnecessary headings that won't earn you any marks. Just make sure you number your answers exactly the same as in the question paper – you can answer the questions in a different order, but they have to have the same numbers as in the question paper.

- Know your formats & formulae by heart. You will not be given a formula sheet in the exam. The only formulae that might be provided in the MAC2601 exam are the two equations for simple regression analysis (only if relevant to any of the questions). Sometimes half a mark may be awarded for writing down the correct formula or format. However, most of the marks in a question are usually for application of principles, so do not simply write down a formula and leave out the substitution or calculations and expect a good mark for the question. Writing down the formula is still very important, as there are often different formulae that could be used to get to the same answer, and the marker needs to know which formula you have applied in order to award as many marks as possible to your calculations.

- Read the question carefully (both the "given" and the "required") - while this may seem obvious, you'd be surprised to see how many students fail to actually read and understand what the question is asking of them.

- You could prioritise the questions from easiest to hardest based on your experience of the different topics – if there is a certain topic that you feel will earn you more marks than another, you are welcome to attempt the question that you are the most comfortable with first. This way you might maximise your marks and increase your chances of passing. However, using the exact numbering as in the question paper and still answering all the questions are very important, independent of whether you do the questions in the same order as in the paper, or in a different order.

- It is very important that you do not exceed the allocated time per question. Move on to the next question when your time for a question is depleted. We know it could be difficult to leave the remainder of a question when time for that question is up before you have written down everything that you know with regard to the question, but we often see that students obtain excellent marks in one or two individual questions or some sub-sections and then fail the exam because they haven't attempted all the questions.

- Should you use less time than available for a specific question, move to the next question. Only if you have time left after your final question, return to those questions that you haven't completed within the allocated time.

- All of these tips sound simple in theory, yet require discipline to implement in practice.

- Do not underestimate the importance of revision and practice – be prepared for the exams. And don't let the real exam be the first exposure you get to time management!

- Apply these and other time-saving methods that you have discovered and practised!

3 ADDITIONAL QUESTIONS

The questions below have been provided for students to:

- Practice time management techniques
- Get additional practice applying some of the principles taught in the study guides

These extra questions are all written questions - we have not provided any additional multiple-choice questions as students already have quite a variety of multiple-choice questions in their assignments.

From enquiries, assignments, etc., the lecturers have noted that students are often struggling with some of the topics and we have decided to provide you with the opportunity for additional practice with regard to some of the principles addressed in these topics. Also, none of the assignments contain written questions on the topics in study guide 2 (topics 9 – 12) and we have therefore also provided additional questions about these four topics. Please note that these questions are NOT an indication of what will be asked in the exam – they are simply for additional practice.

All twelve topics will be examined!

QUESTION 1 – JOB COSTING (23 marks) (28 minutes)

Ntabalanga (Pty) Ltd. uses a job costing system. Manufacturing overheads are allocated to jobs on the basis of a predetermined rate of 50% of direct labour cost. The budget for April 2013 estimated that direct labour would be 12 500 hours at a budgeted rate of R50 per hour.

On 1 April 2013, the ledger of the company revealed the following information:

	R
Materials on hand	150 000
Finished goods	
• Job J	117 000
• Job L	6 000
Work in progress control account	
• Job M	64 000
• Job N	72 000
• Job P	56 000

The following transactions took place during April 2013:

1. Jobs Q and R were started in the current month.

2. Jobs N and R were completed during April 2013 and Job N was invoiced to a customer at a profit of 25% of cost price.

3. Material purchases amounted to R164 000.

4. Material issued:

	R
• Job N	26 000
• Job P	12 000
• Job Q	48 000
• Job R	60 000
Indirect material	16 000

5. Labour costs were as follows:

Direct labour	R
• Job M: 1 000 hours @ R44 per hour	44 000
• Job N: 2 000 hours @ R50 per hour	100 000
• Job P: 1 500 hours @ R50 per hour	75 000
• Job Q: 2 000 hours @ R48 per hour	96 000
• Job R: 1 000 hours @ R46 per hour	46 000
Indirect labour	98 000

6. Other costs incurred during the month:

• Rent of factory	30 000
• Selling and administrative costs	86 000
• Depreciation of machines	36 000

REQUIRED

Prepare the following general ledger accounts (properly balanced):

- Material control (this account is used for all direct and indirect materials) (2)
- Work in progress (WIP) control (9)
- Factory Salaries and Wages control account (this account is used for all direct and indirect labour) (1)
- Finished goods control (3½)
- Factory Overhead control (4)
- Cost of sales (1)
- Sales (1)
- Trading account (1½)

QUESTION 2 – PROCESS COSTING (212 marks) (254 minutes)

Applicable to PARTS A – H (scenarios 1 – 8)

Practice Company (Pty) Ltd. manufactures a single product and uses a process costing system. Materials are added at the beginning of the process and conversion takes place evenly throughout the process.

May 20x5			
Opening WIP (20% complete)	80 000 units	Material R320 000	CC R128 000
Put into production	140 000 units	Material R588 000	CC R1 663 000
Completed and transferred	180 000 units		
Closing WIP	20 000 units		

Normal wastage amounts to 5% of the inputs that reach the wastage point.

"CC" refers to conversion costs in this question.

PART A – Scenario 1 (26 marks) (31 minutes)

Additional information:

- Wastage occurs when the process is 20% complete.
- The company uses the weighted average method of inventory valuation.
- Closing WIP is 90% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 1. (7)
(b) Prepare the production cost statement for scenario 1. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 1. (8)
(d) Prepare the cost allocation statement for scenario 1. (8)

PART B – Scenario 2 (26 marks) (31 minutes)

Additional information:

- Wastage occurs when the process is 60% complete.
- The company uses the weighted average method of inventory valuation.
- Closing WIP is 90% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 2. (7)
(b) Prepare the production cost statement for scenario 2. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 2. (8)
(d) Prepare the cost allocation statement for scenario 2. (8)

PART C – Scenario 3 (26 marks) (31 minutes)

Additional information:

- Wastage occurs when the process is 15% complete.
- The company uses the weighted average method of inventory valuation.
- Closing WIP is 10% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 3. (7)
(b) Prepare the production cost statement for scenario 3. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 3. (8)
(d) Prepare the cost allocation statement for scenario 3. (8)

PART D – Scenario 4 (26 marks) (31 minutes)

Additional information:

- Wastage occurs at the end of the process.
- The company uses the weighted average method of inventory valuation.
- Closing WIP is 90% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 4. (7)
(b) Prepare the production cost statement for scenario 4. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 4. (8)
(d) Prepare the cost allocation statement for scenario 4. (8)

PART E – Scenario 5 (27 marks) (32 minutes)

Additional information:

- Wastage occurs when the process is 20% complete.
- The company uses the FIFO method of inventory valuation.
- Closing WIP is 90% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 5. (8)
(b) Prepare the production cost statement for scenario 5. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 5. (8)
(d) Prepare the cost allocation statement for scenario 5. (8)

PART F – Scenario 6 (27 marks) (32 minutes)

Additional information:

- Wastage occurs when the process is 60% complete.
- The company uses the FIFO method of inventory valuation.
- Closing WIP is 90% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 6. (8)
(b) Prepare the production cost statement for scenario 6. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 6. (8)
(d) Prepare the cost allocation statement for scenario 6. (8)

PART G – Scenario 7 (27 marks) (32 minutes)

Additional information:

- Wastage occurs when the process is 15% complete.
- The company uses the FIFO method of inventory valuation.
- Closing WIP is 10% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 7. (8)
(b) Prepare the production cost statement for scenario 7. (3)

(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 7. (8)
(d) Prepare the cost allocation statement for scenario 7. (8)

PART H – Scenario 8 (27 marks) (32 minutes)

Additional information:

- Wastage occurs at the end of the process.
- The company uses the FIFO method of inventory valuation.
- Closing WIP is 90% complete.

REQUIRED

(a) Prepare the quantity statement for scenario 8. (8)
(b) Prepare the production cost statement for scenario 8. (3)
(c) Calculate and allocate the Rand value of the normal loss for purposes of the cost allocation statement of scenario 8. (8)
(d) Prepare the cost allocation statement for scenario 8. (8)

QUESTION 3 – BUDGETING (10 marks) (12 minutes)

Rayi (Pty) Ltd. is a retail distributor of after-market automotive parts. The management accountant has prepared sales budgets for the six months from July to December 2013. These are presented below:

Month	July	August	September	October	November	December
Cash sales	35 000	50 000	30 000	25 000	35 000	20 000
Credit sales	495 000	450 000	430 000	525 000	425 000	520 000
Total sales	530 000	500 000	460 000	550 000	460 000	540 000

Additional information:

Collections from accounts receivable are as follows:

- 50% in the month of sale and is subject to a 2% settlement discount
- 30% one month after the month of sale
- 15% two months after the month of sale and the remainder is uncollectible.

Rayi (Pty) Ltd.'s inventory requirements are equal to 30% of the next month's total budgeted sales amount. (Inventory is purchased in the month preceding its expected sale.) The suppliers' terms of payment require that 45% be paid in the month of purchase and the balance is payable in the month after the month of purchase. All purchases are on credit.

January 2014 sales are expected to comprise credit and cash sales of R580 000 and R40 000 respectively. Rayi (Pty) Ltd. Is expected to have a bank overdraft of R50 000 on 31 October 2013. The bank overdraft is as result of a dividend payment to be made in October.

Selling and administrative costs amount to 50% of the monthly total sales and includes depreciation of R20 000 per month.

REQUIRED

Prepare a cash budget for Rayi (Pty) Ltd. by month for November and December 2013. (10)

QUESTION 4 – STANDARD COSTING (15 marks; 18 minutes)

The following information applies to Another Example (Pty) Ltd. for the 20x7 financial year:

Standards **per unit** of the final product	
Direct materials	R24
Direct labour (R90 per hour)	R18
Variable manufacturing overheads (vary with hours worked)	R10
Selling price	R70

Actual results	
Direct materials (5kg per unit)	?
Direct labour (R94 per hour)	R1 034 000
Variable manufacturing overheads (vary with hours worked)	R500 000
Sales (50 000 units of the final product were produced and sold)	R3 400 000

Variances already calculated	
Material quantity variance (unfavourable)	R100 000
Total material variance (favourable)	R50 000

REQUIRED

(a) Calculate the actual price per kilogram of direct material. (3)

(b) Calculate the following variances:
- (i) Labour rate variance (2)
- (ii) Labour efficiency variance (2)
- (iii) Total labour variance (2)
- (iv) Variable manufacturing overhead rate variance for overheads that vary with hours worked (2)
- (v) Variable manufacturing overhead efficiency variance for overheads that vary with hours worked (2)
- (vi) Selling price variance (2)

QUESTION 5 – RELEVANT COSTING (13 marks) (16 minutes)

Best Shampoo (Pty) Ltd. is a company that manufactures hair shampoo for men. The shampoo manufactured by the company cleanses and fortifies hair, leaving it smooth and healthy-looking. The company has requested you as a management accounting pundit to assist them with their production structure. The following information relates to the different types of shampoo the company manufactures. A maximum of 250 production hours are available to the company on a monthly basis.

	Soothing Care	**Sensitive Care**	**Classic Care**
Expected monthly demand	8 000 units	12 000 units	7 000 units
Selling price per unit (R)	60	65	70
Production costs			
Variable manufacturing costs per unit (R)	20	25	15
Variable selling costs per unit (R)	5	3	4
Fixed cost (per unit based on production capacity)(R)	3,5	3,5	3,5
Labour hours required to meet demand for product	100	100	70

Additional information:

Best Shampoo also incurs administrative expenses on a monthly basis to operate the business. Administrative expenses allocated based on production capacity is as follows for the different types of shampoos: Soothing Care R5 per unit, R3 per unit for Sensitive Care and R2 per unit for Classic Care.

REQUIRED:

1. Identify the limitation **(1)**
2. Calculate the contribution per unit of the product **(3)**
3. Calculate contribution per unit of the limiting factor **(3)**
4. Identify the order in which labour hours should be used to manufacture shampoos **(3)**
5. Allocate labour hours to the shampoos until there are no labour hours left **(3)**

QUESTION 6 – SENSITIVITY ANALYSIS (20 marks) (24 minutes)

Huge Concerts (Pty) Ltd. is a South African based company in the entertainment sector based in Rosebank, Johannesburg. The main activity of the company is to invite famous and mostly Grammy award winning artists to perform in South Africa. When the artists are in South Africa they usually perform in the large South African cities of Johannesburg, Cape Town and Durban.

Huge Concerts have been pondering over the decision to bring a well known American artist into the South African shores for some time now. The company took a firm decision to invite in November 2013 an American artist called Sianna. The CEO of Huge Concerts is excited about Sianna coming to South Africa and even boasted to a friend about it.

Huge Concerts (Pty) Ltd. requested you to assist them with cost volume profit and profitability analysis.

A cost volume table was also prepared and you are provided with the following cost structure for Huge Concerts (Pty) Ltd. for the 2013 months listed below:

Month	**Cost**	**Tickets sold**
May	R120 000	20 000
June	R150 000	30 000
July	R140 000	26 000
August	R 90 000	15 000
September	R100 000	18 000
October	R130 000	25 000

Variable costs consist of the cost of a pack that revellers at the concert will be provided with at the entrance of the venue. The pack includes a bottle of wine and a snack. The proposed selling price of a ticket to go and see Sianna is R35.

REQUIRED

The Chief Executive of Huge Concerts has requested you to calculate the following:

1. The number of tickets that Huge Concerts have to sell in order to break even (7)
2. How many tickets have to be sold to earn R20 000 target profit (3)
3. What profit will result if 3 000 tickets are sold (3)
4. What selling price have to be charged to show profit of R40 000 on the sale of 3 000 tickets (4)
5. How many additional tickets have to be sold to cover R10 000 additional fixed costs of billboard advertisements next to the M2 highway and still break even (assume selling price of R35) (3)

4 SOLUTIONS TO ADDITIONAL QUESTIONS

QUESTION 1 – JOB COSTING

Material Inventory Control

Opening balance	^150 000	WIP[7]	^146 000
Creditors	^164 000	Factory overhead control	^16 000
		Balance b/d	152 000
	314 000		314 000
Balance b/f	152 000		

WIP Control

Opening balance	[1]192 000	Finished goods	[2]377 000
Materials control	^146 000	Balance b/d	502 500
Factory Salaries & Wages control	[3]361 000		
Factory overhead control	[4]180 500		
	879 500		879 500
Balance b/f	502 500		

Finished Goods Control

Opening balance	[5]123 000	COS	[6]248 000
WIP	^377 000	Balance b/d	252 000
	500 000		500 000
Balance b/f	252 000		

Factory Salaries and Wages Control

Salaries payable	459 000	WIP	^361 000
		Factory overhead control	^98 000
	459 000		459 000

[1]64 000 + 72 000 + 56 000 ✔ ^

[2]N:248 000 (72 000 + 26 000 + 100 000 + (100 000 x 50%))
+ R: 129 000 (60 000 + 46 000 + (46 000 x 50%)) ✔ ✔ ✔ ^

[3]44 000 + 100 000 + 75 000 + 96 000 + 46 000 ✔ ✔ ^

[4]361 000 x 50% ✔

[5]117 000 + 6 000 ✔

[6]72 000 + 26 000 + 100 000 + 50 000 ✔ ✔

[7]26 000 + 12 000 + 48 000 + 60 000

QUESTION 1 – JOB COSTING (continued)

Factory Overhead Control

Materials control	^16 000	WIP (361 000 x 50%)	✔ 180 500
Factory salaries & wages control	^98 000		
Creditors[9]	66 000		
COS[8]	✔ 500		
	180 500		180 500

Cost of Sales (COS)

Fin. Goods	^248 000	Trading account	247 500
		Factory overhead control	^ 500
	248 000		248 000

[8]Over-applied overheads

[9]30 000 + 36 000 ✔

Sales

Trading account	310 000	Debtors	[10]310 000
	310 000		310 000

Trading Account

Cost of sales	^247 500	Sales	^310 000
Profit and loss (I/s)	^ 62 500		
	310 000		310 000

[10]248 000 x 125% ✔

QUESTION 2 – PROCESS COSTING

PART A

(a) Quantity statement

Physical units			Equivalent units			
Input		Output	Raw materials		Conversion cost	
(units)	Details	(units)	Units	%	Units	%
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed and transferred	180 000√	180 000^	100	180 000^	100
	Normal loss	① 7 000√	7 000^	100	1 400^	20
	Abnormal loss	② 13 000^	13 000^	100	2 600^	20
	Closing WIP	20 000^	20 000^	100	18 000^	90
220 000		220 000	220 000		202 000	

① 220 000 – 80 000 = 140 000
140 000 x 5% = 7 000
② Balancing figure

(b) Production cost statement

	Total	Material	Conversion cost
	R	R	R
Opening WIP	448 000	320 000	128 000
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000	908 000	1 791 000
Equivalent units - per quantity statement		220 000	202 000
Equivalent cost per unit	R13,00 =	R4,13	+ R8,87

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (7 000^ x R4,13^) + (1 400^ x R8,87^)

= R28 910 + R12 418

= R41 328

MATERIAL

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 213 000 x R28 910	24 431
Abnormal loss	13 000^	13 000 / 213 000 x R28 910	1 764
Closing WIP	20 000^	20 000 / 213 000 x R28 910	2 715
TOTAL	213 000	√For dividing by total and multiplying by 28 910	**28 910**

CONVERSION COST

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 200 600 x R12 418	11 143
Abnormal loss	2 600^	2 600 / 200 600 x R12 418	161
Closing WIP	18 000^	18 000 / 200 600 x R12 418	1 114
TOTAL	200 600	√For dividing by total and multiplying by 12 418	**12 418**

(d) Cost allocation statement

	R
Completed and transferred	2 375 574
Material and conversion (13,00^ x 180 000^)	2 340 000
Normal loss (24 431^ + 11 143^)	35 574
Abnormal loss	78 677
Material (4,13^ x 13 000^)	53 690
Conversion cost (8,87^ x 2 600^)	23 062
Normal loss (1 764^ + 161^)	1 925
Closing WIP	246 089
Material (4,13^ x 20 000^)	82 600
Conversion cost (8,87^ x 18 000^)	159 660
Normal loss (2 715^ + 1 114^)	3 829
Total cost allocated	2 700 340
Rounding difference	(1 340)
Total cost per production cost statement	2 699 000

PART B

(a) Quantity statement

Physical units			Equivalent units			
Input		**Output**	**Raw materials**		**Conversion cost**	
(units)	**Details**	**(units)**	**Units**	**%**	**Units**	**%**
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed and transferred	180 000√	180 000^	100	180 000^	100
	Normal loss	① 11 000√	11 000^	100	6 600^	60
	Abnormal loss	② 9 000^	9 000^	100	5 400^	60
	Closing WIP	20 000^	20 000^	100	18 000^	90
220 000		220 000	220 000		210 000	

① 220 000 x 5% = 11 000
② Balancing figure

(b) Production cost statement

	Total	**Material**	**Conversion cost**
	R	**R**	**R**
Opening WIP	448 000	320 000	128 000
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000	908 000	1 791 000
Equivalent units - per quantity statement		220 000	210 000
Equivalent cost per unit	R12,66 =	R4,13	+ R8,53

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (11 000^ x R4,13^) + (6 600^ x R8,53^)

= R45 430 + R56 298

= R101 728

MATERIAL

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 209 000 x R45 430	39 126
Abnormal loss	9 000^	9 000 / 209 000 x R45 430	1 956
Closing WIP	20 000^	20 000 / 209 000 x R45 430	4 347
TOTAL	209 000	**Rounding difference = R1** √For dividing by total and multiplying by 45 430	**45 429**

CONVERSION COST

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 203 400 x R56 298	49 821
Abnormal loss	5 400^	5 400 / 203 400 x R56 298	1 495
Closing WIP	18 000^	18 000 / 203 400 x R56 298	4 982
TOTAL	203 400	√For dividing by total and multiplying by 56 298	**56 298**

(d) Cost allocation statement

	R
Completed and transferred	2 367 747
Material and conversion (12,66^ x 180 000^)	2 278 800
Normal loss (39 126^ + 49 821^)	88 947
Abnormal loss	86 683
Material (4,13^ x 9 000^)	37 170
Conversion cost (8,53^ x 5 400^)	46 062
Normal loss (1 956^ + 1 495^)	3 451
Closing WIP	245 469
Material (4,13^ x 20 000^)	82 600
Conversion cost (8,53^ x 18 000^)	153 540
Normal loss (4 347^ + 4 982^)	9 329
Total cost allocated	2 699 899
Rounding difference	(899)
Total cost per production cost statement	2 699 000

PART C

(a) Quantity statement

Physical units			Equivalent units			
					Conversion cost	
Input (units)	**Details**	**Output (units)**	**Raw materials Units**	**%**	**Units**	**%**
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed and transferred	180 000√	180 000^	100	180 000^	100
	Normal loss	① 6 000√	6 000^	100	900^	15
	Abnormal loss	② 14 000^	14 000^	100	2 100^	15
	Closing WIP	20 000^	20 000^	100	2 000^	10
220 000		220 000	220 000		185 000	

① 220 000 – 80 000 – 20 000 = 120 000
120 000 x 5% = 6 000
② Balancing figure

(b) Production cost statement

	Total	Material	Conversion cost
	R	**R**	**R**
Opening WIP	448 000	320 000	128 000
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000	908 000	1 791 000
Equivalent units - per quantity statement		220 000	185 000
Equivalent cost per unit	R13,81 =	R4,13	+ R9,68

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (6 000^ x R4,13^) + (900^ x R9,68^)

= R24 780 + R8 712

= R33 492

MATERIAL

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 194 000 x R24 780	22 992
Abnormal loss	14 000^	14 000 / 194 000 x R24 780	1 788
Closing WIP	-^	-	0
TOTAL	194 000	√For dividing by total and multiplying by 24 780	**24 780**

CONVERSION COST

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 182 100 x R8 712	8 612
Abnormal loss	2 100^	2 100 / 182 100 x R8 712	100
Closing WIP	-^	-	0
TOTAL	182 100	√For dividing by total and multiplying by 8 712	**8 712**

(d) Cost allocation statement

	R
Completed and transferred	2 517 404
Material and conversion (13,81^ x 180 000^)	2 485 800
Normal loss (22 992^ + 8 612^)	31 604
Abnormal loss	80 036
Material (4,13^ x 14 000^)	57 820
Conversion cost (9,68^ x 2 100^)	20 328
Normal loss (1 788^ + 100^)	1 888
Closing WIP	101 960
Material (4,13^ x 20 000^)	82 600
Conversion cost (9,68^ x 2 000^)	19 360
Normal loss (0^ + 0^)	0
Total cost allocated	2 699 400
Rounding difference	(400)
Total cost per production cost statement	2 699 000

PART D

(a) Quantity statement

Physical units			Equivalent units			
Input		**Output**	**Raw materials**		**Conversion cost**	
(units)	**Details**	**(units)**	**Units**	**%**	**Units**	**%**
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed and transferred	180 000√	180 000^	100	180 000^	100
	Normal loss	① 10 000√	10 000^	100	10 000^	100
	Abnormal loss	② 10 000^	10 000^	100	10 000^	100
	Closing WIP	20 000^	20 000^	100	18 000^	90
220 000		220 000	220 000		218 000	

① 220 000 – 20 000 = 200 000
200 000 x 5% = 10 000
② Balancing figure

(b) Production cost statement

	Total	**Material**	**Conversion cost**
	R	**R**	**R**
Opening WIP	448 000	320 000	128 000
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000	908 000	1 791 000
Equivalent units - per quantity statement		220 000	218 000
Equivalent cost per unit	R12,35 =	R4,13	+ R8,22

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (10 000^ x R4,13^) + (10 000^ x R8,22^)

= R41 300 + R82 200

= R123 500

MATERIAL

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 190 000 x R41 300	39 126
Abnormal loss	10 000^	10 000 / 190 000 x R41 300	2 174
Closing WIP	-^	-	0
TOTAL	190 000	√For dividing by total and multiplying by 41 300	**41 300**

CONVERSION COST

	Units	Calculation	R
Completed and transferred	180 000^	180 000 / 190 000 x R82 200	77 874
Abnormal loss	10 000^	10 000 / 190 000 x R82 200	4 326
Closing WIP	-^	-	0
TOTAL	190 000	√For dividing by total and multiplying by 82 200	**82 200**

(d) Cost allocation statement

		R
Completed and transferred		2 340 000
Material and conversion (12,35^ x 180 000^)	2 223 000	
Normal loss (39 126^ + 77 874^)	117 000	
Abnormal loss		130 000
Material (4,13^ x 10 000^)	41 300	
Conversion cost (8,22^ x 10 000^)	82 200	
Normal loss (2 174^ + 4 326^)	6 500	
Closing WIP		230 560
Material (4,13^ x 20 000^)	82 600	
Conversion cost (8,22^ x 18 000^)	147 960	
Normal loss (0^ + 0^)	0	
Total cost allocated		2 700 560
Rounding difference		(1 560)
Total cost per production cost statement		2 699 000

PART E

(a) Quantity statement

Physical units			Equivalent units			
			Raw materials		Conversion cost	
Input (units)	**Details**	**Output (units)**	**Units**	**%**	**Units**	**%**
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed from:					
	- Opening WIP	③ 80 000√	-^	0	64 000^	80
M and cc^	- Current production	100 000^	100 000	100	100 000	100
	Completed and transferred	180 000	100 000		164 000	
	Normal loss	① 7 000√	7 000^	100	1 400^	20
	Abnormal loss	② 13 000^	13 000^	100	2 600^	20
	Closing WIP	20 000^	20 000^	100	18 000^	90
220 000		220 000	140 000		186 000	

① 220 000 – 80 000 = 140 000
140 000 x 5% = 7 000
② Balancing figure
③ 20% >= 20%, therefore do not reduce the units in opening WIP

(b) Production cost statement

	Total	**Material**	**Conversion cost**
	R	**R**	**R**
Opening WIP	448 000		
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000		
Equivalent units - per quantity statement		140 000	186 000
Equivalent cost per unit	R13,14 =	R4,20	+ R8,94

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (7 000^ x R4,20^) + (1 400^ x R8,94^)

= R29 400 + R12 516

= R41 916

MATERIAL

	Units	Calculation	R
Completed and transferred (100 000 – 0)	100 000√	100 000 / 133 000 x R29 400	22 105
Abnormal loss	13 000^	13 000 / 133 000 x R29 400	2 874
Closing WIP	20 000^	20 000 / 133 000 x R29 400	4 421
TOTAL	133 000	^For dividing by total and multiplying by 29 400	**29 400**

CONVERSION COST

	Units	Calculation	R
Completed and transferred (164 000 – 64 000)	100 000√	100 000 / 120 600 x R12 516	10 378
Abnormal loss	2 600^	2 600 / 120 600 x R12 516	270
Closing WIP	18 000^	18 000 / 120 600 x R12 516	1 868
TOTAL	120 600	^For dividing by total and multiplying by 12 516	**12 516**

(d) Cost allocation statement

	R
Opening WIP	448 000
Material	320 000^
Conversion cost	128 000^
Current period equivalent production activities	1 918 643
Material (4,20^ x 100 000^)	420 000
Conversion cost (8,94^ x 164 000^)	1 466 160
Normal loss (22 105 + 10 378) ^	32 483
Completed and transferred	2 366 643
Abnormal loss	80 988
Material (4,20^ x 13 000^)	54 600
Conversion cost (8,94^ x 2 600^)	23 244
Normal loss (2 874 + 270) ^	3 144
Closing WIP	251 209
Material (4,20 x 20 000)^	84 000
Conversion cost (8,94^ x 18 000^)	160 920
Normal loss (4 421 + 1 868) ^	6 289
Total cost allocated	2 698 840
Rounding difference	160
Total cost per production cost statement	2 699 000

PART F

(a) Quantity statement

Physical units			Equivalent units			
			Raw materials		Conversion cost	
Input (units)	Details	Output (units)	Units	%	Units	%
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed from:					
	- Opening WIP	③ 76 000√	-^	0	60 800^	80
M and cc^	- Current production	104 000^	104 000	100	104 000	100
	Completed and transferred	180 000	104 000		164 800	
	Normal loss	① 11 000√	11 000^	100	6 600^	60
	Abnormal loss	② 9 000^	9 000^	100	5 400^	60
	Closing WIP	20 000^	20 000^	100	18 000^	90
220 000		220 000	144 000		194 800	

① 220 000 x 5% = 11 000
② Balancing figure
③ 20% < 60%, therefore reduce the units completed from opening WIP: 80 000 x (100% - 5%) = 80 000 x 95% = 76 000

(b) Production cost statement

	Total	Material	Conversion cost
	R	R	R
Opening WIP	448 000		
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000		
Equivalent units - per quantity statement		144 000	194 800
Equivalent cost per unit	R12,62 =	R4,08	+ R8,54

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (11 000^ x R4,08^) + (6 600^ x R8,54^)

= R44 880 + R56 364

= R101 244

MATERIAL

	Units	Calculation	R
Completed and transferred	104 000√	104 000 / 133 000 x R44 880	35 094
Abnormal loss	9 000^	9 000 / 133 000 x R44 880	3 037
Closing WIP	20 000^	20 000 / 133 000 x R44 880	6 749
TOTAL	133 000	^For dividing by total and multiplying by 44 880	**44 880**

CONVERSION COST

	Units	Calculation	R
Completed and transferred	164 800√	164 800 / 188 200 x R56 364	49 356
Abnormal loss	5 400^	5 400 / 188 200 x R56 364	1 617
Closing WIP	18 000^	18 000 / 188 200 x R56 364	5 391
TOTAL	188 200	^For dividing by total and multiplying by 56 364	**56 364**

(d) Cost allocation statement

	R
Opening WIP	448 000
Material	320 000^
Conversion cost	128 000^
Current period equivalent production activities	1 916 162
Material (4,08^ x 104 000^)	424 320
Conversion cost (8,54^ x 164 800^)	1 407 392
Normal loss (35 094 + 49 356) ^	84 450
Completed and transferred	2 364 162
Abnormal loss	87 490
Material (4,08^ x 9 000^)	36 720
Conversion cost (8,54^ x 5 400^)	46 116
Normal loss (3 037 + 1 617) ^	4 654
Closing WIP	247 460
Material (4,08 x 20 000) ^	81 600
Conversion cost (8,54^ x 18 000^)	153 720
Normal loss (6 749 + 5 391) ^	12 140
Total cost allocated	2 699 112
Rounding difference	(112)
Total cost per production cost statement	2 699 000

PART G

(a) Quantity statement

Physical units			Equivalent units			
			Raw materials		Conversion cost	
Input (units)	**Details**	**Output (units)**	**Units**	**%**	**Units**	**%**
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed from:					
	- Opening WIP	③80 000√	-^	0	64 000^	80
M and cc^	- Current production	100 000^	100 000	100	100 000	100
	Completed and transferred	180 000	100 000		164 000	
	Normal loss	① 6 000√	6 000^	100	900^	15
	Abnormal loss	② 14 000^	14 000^	100	2 100^	15
	Closing WIP	20 000^	20 000^	100	2 000^	10
220 000		220 000	140 000		169 000	

① 220 000 – 80 000 – 20 000 = 120 000
120 000 x 5% = 6 000
② Balancing figure
③ 20% >= 15%, therefore DO NOT reduce the units in opening WIP

(b) Production cost statement

	Total	**Material**	**Conversion cost**
	R	**R**	**R**
Opening WIP	448 000		
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000		
Equivalent units - per quantity statement		140 000	169 000
Equivalent cost per unit	R14,04 =	R4,20	+ R9,84

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (6 000^ x R4,20^) + (900^ x R9,84^)

= R25 200 + R8 856

= R34 056

MATERIAL

	Units	Calculation	R
Completed and transferred (100 000 – 0)	100 000√	100 000 / 114 000 x R25 200	22 105
Abnormal loss	14 000^	14 000 / 114 000 x R25 200	3 095
Closing WIP	0^	-	0
TOTAL	114 000	^For dividing by total and multiplying by 25 200	**25 200**

CONVERSION COST

	Units	Calculation	R
Completed and transferred (164 000 – 64 000)	100 000√	100 000 / 102 100 x 8 856	8 674
Abnormal loss	2 100^	2 100 / 102 100 x R8 856	182
Closing WIP	0^	-	0
TOTAL	102 100	^For dividing by total and multiplying by 8 856	**8 856**

(d) Cost allocation statement

	R
Opening WIP	448 000
Material	320 000^
Conversion cost	128 000^
Current period equivalent production activities	2 064 539
Material (4,20^ x 100 000^)	420 000
Conversion cost (9,84^ x 164 000^)	1 613 760
Normal loss (22 105 + 8 674) ^	30 779
Completed and transferred	2 512 539
Abnormal loss	82 741
Material (4,20^ x 14 000^)	58 800
Conversion cost (9,84^ x 2 100^)	20 664
Normal loss (3 095 + 182) ^	3 277
Closing WIP	103 680
Material (4,20 x 20 000) ^	84 000
Conversion cost (9,84^ x 2 000^)	19 680
Normal loss (0 + 0) ^	-
Total cost allocated	2 698 960
Rounding difference	40
Total cost per production cost statement	2 699 000

PART H

(a) Quantity statement

Physical units			Equivalent units			
			Raw materials		Conversion cost	
Input (units)	Details	Output (units)	Units	%	Units	%
	Input					
80 000	Opening WIP					
140 000	Put into production					
	Output					
	Completed from:					
	- Opening WIP	③ 76 000√	-^	0	60 800^	80
M and cc^	- Current production	104 000^	104 000	100	104 000	100
	Completed and transferred	180 000	104 000		164 800	
	Normal loss	① 10 000√	10 000^	100	10 000^	100
	Abnormal loss	② 10 000^	10 000^	100	10 000^	100
	Closing WIP	20 000^	20 000^	100	18 000^	90
220 000		220 000	144 000		202 800	

① 220 000 – 20 000 = 200 000
200 000 x 5% = 10 000
② Balancing figure
③ 20% < 100%, therefore reduce units completed from opening WIP

(b) Production cost statement

	Total	Material	Conversion cost
	R	R	R
Opening WIP	448 000		
Current production cost	2 251 000	588 000	1 663 000
Total	2 699 000		
Equivalent units - per quantity statement		144 000	202 800
Equivalent cost per unit	R12,28 =	R4,08	+ R8,20

√√√ (Based on principle; either 3 marks or zero)

(c) Calculation and allocation of the Rand value of the normal loss

NLR = NLM + NLC

= (10 000^ x R4,08^) + (10 000^ x R8,20^)

= R40 800 + R82 000

= R122 800

MATERIAL

	Units	Calculation	R
Completed and transferred	104 000√	104 000 / 114 000 x R40 800	37 221
Abnormal loss	10 000^	10 000 / 114 000 x R40 800	3 579
Closing WIP	0^	-	0
TOTAL	114 000	^For dividing by total and multiplying by 40 800	**40 800**

CONVERSION COST

	Units	Calculation	R
Completed and transferred	164 800√	164 800 / 174 800 x R82 000	77 309
Abnormal loss	10 000^	10 000 / 174 800 x R82 000	4 691
Closing WIP	0^	-	0
TOTAL	174 800	^For dividing by total and multiplying by 82 000	**82 000**

(d) Cost allocation statement

		R
Opening WIP		448 000
Material	320 000^	
Conversion cost	128 000^	
Current period equivalent production activities		1 890 210
Material (4,08^ x 104 000^)	424 320	
Conversion cost (8,20^ x 164 800^)	1 351 360	
Normal loss (37 221 + 77 309) ^	114 530	
Completed and transferred		2 338 210
Abnormal loss		131 070
Material (4,08^ x 10 000^)	40 800	
Conversion cost (8,20^ x 10 000^)	82 000	
Normal loss (3 579 + 4 691) ^	8 270	
Closing WIP		229 200
Material (4,08 x 20 000) ^	81 600	
Conversion cost (8,20^ x 18 000^)	147 600	
Normal loss (0 + 0) ^	0	
Total cost allocated		2 698 480
Rounding difference		520
Total cost per production cost statement		2 699 000

QUESTION 3 - BUDGETING

Cash budget:

	November	December
	R	**R**
Opening cash balance (given)	(50 000)^	132 350^
Total receipts	465 250	481 050
Cash sales (given)	35 000^	20 000^
Collections from debtors	430 250[1]	461 050[1]
Total cash available	415 250	613 400
Total payments	(282 900)	(422 800)
Purchases	72 900[1]	172 800[2]
Selling and administrative costs	210 000[3]	250 000[4]
Closing cash balance	132 350	190 600

[1]**Receipts from credit sales:**

	Credit sales	% collected	Amount
November			
			R
September	430 000	15%	64 500^
October	525 000	30%	157 500^
November	425 000	49%*	208 250[a] ✔
			430 250
December			
			R
October	525 000	15%	78 750^
November	425 000	30%	127 500^
December	520 000	49%*	254 800[b] ✔
			461 050

[a] 425 000 x 50% x 98%
[b] 520 000 x 50% x 98%
* 50% - (2% X 50%)

[2]**Payments for purchases:**	Credit purchases	% paid	Amount
November			
			R
November	162 000	45%	72 900^

December

			R
November	162 000	55%	89 100^
December	186 000	45%	83 700[c] ✔
			172 800

[c] R580 000 + R40 000 = R620 000 x 30% x45%

[3] R460 000 x 50% - R20 000 ✔

[4] R540 000 x 50% - R20 000 ✔

QUESTION 4 – STANDARD COSTING

(a) Material

AC or AQxAP		AQxSP		SQ allowed x AcProd x SP
	< f		u >	
5 x 50 000 x AP		5 x 50 000 x SP		R24 x 50 000 = 1 200 000

Purchase price var.	Quantity var. = R100 000(u) (given)
Total var. = R50 000(f) given	

Calculation of standard price (SP) per kilogram:

(5 x 50 000 x SP) – (R1 200 000)	= R100 000
250 000 SP	= R1 300 000
SP	= R1 300 000^ / 250 000^
SP	= R5,20 per kg

Purchase price variance	= Total variance - quantity variance
	= R50 000 (f) – R100 000 (u)
	= R150 000 (f)^

Calculation of actual price (AP) per kilogram:

(5 x 50 000 x AP)^–(5 x 50 000 x 5,20)^	= -R150 000
250 000 AP – 1 300 000	= -R150 000
250 000 AP	= R1 150 000
AP	= R1 150 000 / 250 000^
AP	= R4,60 per kg

(b) (i) – (iii) <u>Labour</u>

AC or AHxAR	AHxSR	SH allowed x AcProd x SR
R1 034 000^	(1 034 000 / 94)^ x 90^ = R990 000 ^(for ii)	18 / 90 x 50 000 x 90 = 0,2 X 50 000 x 90 = R900 000 ✔

< f u >

(i) Rate var. = R44 000(u)^	(ii) Efficiency var. = R90 000(u)^
(iii) Total var. = R44 000^ (u) + R90 000^ (u) = R134 000 (u) ✔	

(iv) – (v) <u>Variable manufacturing overheads</u>

AC or AHxAR	AHxSR	SH allowed x AcProd x SR
	< f u >	
R500 000^	1 034 000 / 94 x R10/(18/90) = 11 000^ x R50^ = 550 000 ^(for v)	18/90 x 50 000 x R50 = R500 000 ✔

(iv) Rate var. = R50 000 (f)^	(v) Efficiency var. = R50 000 (u)^
Total var.	

(vii) Sales

AIncome or AQxAP	AQxSP	This leg will not be required from MAC2601 students

> f u <

R3 400 000^ 50 000^ x R70^
= R3 500 000

(vi) Selling price var. = R100 000 (u)^	Quantity var.
Total var.	

QUESTION 5 – RELEVANT COSTING

1. Limiting factor

	Soothing Care	Sensitive Care	Classic Care
Demand	8 000	12 000	7 000
Production rate per labour hour	80	120	100
Hours required	100	100	70

Total hours required: 270 (100 + 100 + 70)
Available hours 250

Limitation: 20 **(√)**

2. Contribution per unit

	Soothing Care	Sensitive Care	Classic Care
Selling price	60	65	70
Variable manufacturing costs	(20)	(25)	(15)
Variable selling costs	(5)	(3)	(4)
Contribution per unit	35 **(√)**	37 (√)	51 **(√)**

3. Contribution per limiting factor

	Soothing Care	Sensitive Care	Classic Care
Contribution per unit (R)	35	37	51
Multiply by:			
Units per labour hour	80	120	100
Contribution per labour hour (R)	2 800 (√)	4 440 (√)	5 100 (√)

4. Identify the order in which the labour hours should be used to manufacture products

1. Classic R5 100 per labour hour (√)
2. Sensitive R4 440 per labour hour (√)
3. Soothing R2 800 per labour hour (√)

5. Allocate the labour hours

Labour hours available	250
1. Classic	70 (√)
Balance	180
2. Sensitive	100 (√)
Balance	80
3. Soothing	80 (√)

QUESTION 6 – SENSITIVITY ANALYSIS

1. High/Low method: 7 marks

Month	Cost	Activity
June	R150 000	30 000 √
August	R 90 000	15 000 √
Difference	R 60 000	15 000

R60 000 divided by 15 000 = R4 per unit √
Variable cost = R4 per unit

Fixed costs = R150 000 – (30 000*R4) √
= R30 000

Contribution per ticket

Selling price	=R35
Variable cost	= (R4)
Contribution per unit	= R31 √

Breakeven units= Fixed costs/ contribution per unit
= 30 000/31=R968 tickets per month

2 Marks: 1 Mark for R30 000 and 1 mark for dividing by R31 correct contribution
√ Bonus mark for calculating the correct breakeven point [Max: 7]

2. Tickets to be sold to obtain R20 000 target profit

= (Fixed costs+ target profit)/ contribution per unit
= (R30 000 (√) +R20 000 (√))/R31
= 1613 tickets (√)

3. Profit from the sale of 3 000 tickets

Contribution (3 000*R31)	= R93 000 (√)
Fixed costs	= (R30 000) (√)
Net profit	= R63 000 (√)

4. What selling price have to be charged to show profit of R40 000 on sale of 3 000 tickets

Total Revenue	= R82 000 (√)
Variable costs (3 000* R4)	= R12 000 (√)
Fixed costs	= R30 000 (√)
Target profit	= R40 000 (√)

Sales Revenue/ tickets to be sold= R82 000/3000 tickets= R27,33

5. How many additional tickets have to be sold to cover R10 000 additional fixed costs of billboard advertisements next to the M2 highway and still break even (SP = R35)

Additional fixed costs: R10 000(√) / R31 (√) contribution per unit= 323 tickets (√)

Alternative answer

R40 000 divide by R31 = 1 291 tickets
Additional tickets= 1 291 - 968 = 323 tickets
(R40 000 = R30 000 + R10 000)