UNIVERSITY EXAMINATIONS

UNIVERSITEITSEKSAMENS

UNISA university of south africa

ACN306Y

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MANAGEMENT ACCOUNTING TECHNIQUES AS AN AID IN DECISION-MAKING

Duration 2 Hours 100 Marks

EXAMINERS

FIRST	MRS S KLOPPER	MRS AM RAATH
SECOND	MRS PR BERRY	PROF HM VAN DER POLL
EXTERNAL	MRS MM ODENDAAL	

Use of a non-programmable pocket calculator is permissible

Closed book examination

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue

This paper consists of 8 pages

PLEASE NOTE

1 All questions must be answered and calculations must be shown
2 Ensure that you are handed the correct examination script (blue) by the invigilator
3 Each question attempted must be commenced on a separate page
4 You may not answer your examination paper in pencil or red pen
5 Ignore taxation and the time value of money, except when specifically stated
6 A combined final mark of 50% is required to pass this module This final mark is calculated as follows (10% x average mark obtained for compulsory assignment 01 and assignment 02) + (90% x mark obtained in this examination), subject to a subminimum of 40% for this paper

PROPOSED TIMETABLE

Question	Topic	Marks	Minutes
1	Multiple choice questions	21	25
2	Network analysis	22	26
3	Cost-volume-profit analysis	22	26
4	Correlation and regression analysis	18	22
5	Stock and production models	17	21
		100	120

QUESTION 1 (21 marks, 25 minutes)

This question should be answered in your answer book This question consists of 7 multiple choice questions Each question has only one correct answer The marks per question are indicated in brackets after each question

Please list the question numbers below one another, from 1 1 to 1 7, with your corresponding answer next to it, for example

1 1 a
1 2 b

1 1 Consider the following statements with regard to decision trees

1 A square denotes an event node

2 A circle denotes a decision node

3 A decision node indicates that a choice has to be made between one or more alternatives

4 A decision node must always be followed by an event node

Indicate which of the above statements are **true**

(a) Statements 1 and 2
(b) Statements 1, 2 and 3
(c) Statement 3
(d) All of the above statements
(e) None of the above options (3)

1 2 Gigga (Pty) Limited has supplied you with the following information

Budgeted direct labour hours	15 000
Actual direct labour hours	16 000
Budgeted factory overhead costs	R37 500
Actual factory overhead costs	R41 600

Overheads are recovered on the basis of direct labour hours

Factory overheads are under- or over-recovered by

(a) R2 500 under-recovered
(b) R2 500 over-recovered
(c) R1 600 over-recovered
(d) R1 600 under-recovered
(e) None of the above options (3)

QUESTION 1 (continued)

1 3 You have extracted the following information from the accounting records of Marsh Limited for the year ended 30 September 2012

		Units
Opening inventory		6 000
Production for the year		58 000
Sales		54 000
		R
Opening inventory (65% fixed)		26 000
Manufacturing overheads	- fixed	110 000
	- variable	116 000
Administrative costs	- fixed	70 000
	- variable	58 000

The company uses the average method for the valuation of inventory

The value of closing inventory according to the absorption costing approach amounts to

(a) R35 313
(b) R39 375
(c) R44 375
(d) R55 313
(e) None of the above options (3)

The following information must be used for the purpose of answering questions 1.4 to 1 5, bearing in mind that questions must be considered independently from each other.

Carwen CC manufactures wooden toys The company has manufactured two wooden cars and the direct labour cost amounted to R9 000 The direct labour hours for the first two cars were as follows

	Hours
First car	80
Second car	72

The learning curve was calculated at 95% and is expected to continue for the first 16 cars built An order for six more cars has just been received Since the first two cars were manufactured the price of labour increased by 10%

1 4 The cumulative average time per car (rounded to two decimals), for the manufacture of the first eight cars is

(a) 68,59 hours
(b) 58,32 hours
(c) 548,72 hours
(d) 466,56 hours
(e) None of the above options (3)

QUESTION 1 (continued)

1 5 The total labour cost (rounded to the nearest rand) for the manufacture of the next six cars is

(a) R23 490
(b) R25 839
(c) R20 158
(d) R22 173
(e) None of the above options (3)

1 6 Peanut Ltd has the following information available for August 2012

	R
Direct materials	80 000
Direct labour	50 000
Variable overheads	75 000
Fixed overheads	190 000

The conversion costs are

(a) R125 000
(b) R205 000
(c) R315 000
(d) R395 000
(e) None of the above options (3)

1 7 Consider the following statements regarding the newer concepts in Management Accounting

1 Quality costs are not visible in traditional management accounting systems because it is combined with other costs, mostly overheads

2 Target costing is a system of profit planning and cost management that is price led, customer focused, design centered and cross functional

3 The measurements used in TOC are throughput (T), investment (I) and operating expense (OE) Throughput (T) contribution is defined as sales less direct material costs

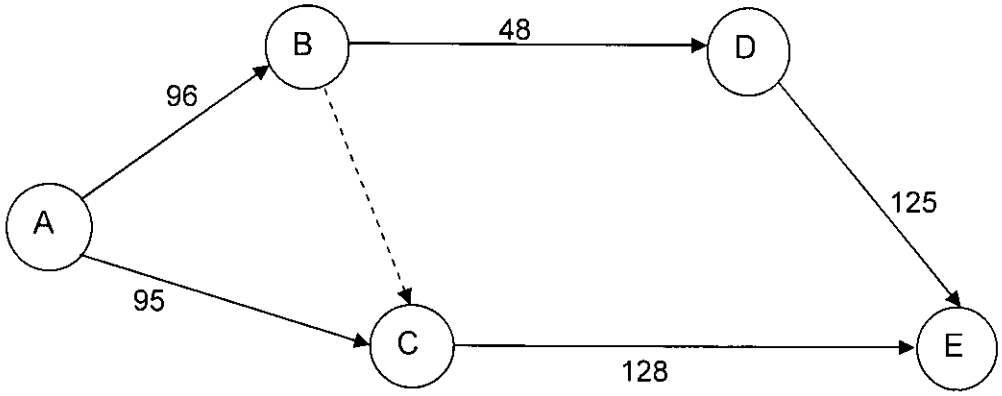
4 The ultimate goal of ERP system is to get the right information to the right people at the right time ERP systems can allow organisations to achieve higher levels of profitability

Indicate which of the above statements are **true**

(a) Statements 1, 2 and 3
(b) Statements 1, 3 and 4
(c) Statements 2, 3 and 4
(d) All of the above statements
(e) None of the above options (3)
[21]

QUESTION 2 (22 marks, 26 minutes)

Moraig Construction has just signed a contract with Strewn Enterprises for the construction of a machine The management accountant constructed the following network diagram for the project



The duration and variable cost under normal and accelerated circumstances of the various activities have been estimated as follows

Activity	Estimated time (hours)		Estimated variable implementation costs		Cost slope
	Normal	Accelerated	Normal R	Accelerated R	R
A → B	96	64	244 000	308 000	2 000
A → C	95	90	120 000	135 000	?
B → C	0	0	0	0	0
B → D	48	32	110 000	126 000	1 000
C → E	128	?	172 000	193 600	1 200
D → E	125	85	133 000	193 000	1 500
			779 000	955 600	

The accelerated duration of activity C → E is uncertain The estimated hours are as follows
Most optimistic time 98 hours
Most likely time 107 hours
Most pessimistic time 134 hours

Fixed costs are absorbed at a rate of R1 750 per hour and are not regarded as committed fixed costs Other direct costs for the project amount to R250 000

REQUIRED:

(a) Calculate the cost slope for activity A → C (2)

(b) Calculate the expected duration of the accelerated activity C→E (3)

(c) Calculate the duration of the various routes and determine the critical path (2)

(d) Set out the programme to be followed in order to reduce total project time in the most cost efficient manner and state the number of hours for completion of the project that will ensure minimum total costs (12)

(e) Calculate the accelerated cost of the project (3)

[22]

QUESTION 3 (22 marks; 26 minutes)

You are the newly appointed management accountant of Bakura Ltd You want to impress the financial director and so you gather the following information, which relates to **two independent situations**

A The following production costs per unit of product Smudge are available:

	R
Direct material	55
Direct labour	108
Production overheads	198
Total	361

The following are the costs for product Smudge for an average month.

	R
Direct labour costs	297 000
Variable production overheads	86 625

Additional information:

1 Production overheads are recovered on the basis of total direct labour costs

2 The current selling price is R470 per unit

3 Selling and administrative costs are fixed, and amount to R82 105 per month

REQUIRED

Calculate the current annual breakeven point in units (9)

B Extract of the variable budget for product Flee for October 2012:

	70%	100%
Sales (units)	63 000	?
Selling price per unit	R18	R18
Net profit	R54 000	R297 000

REQUIRED

(a) Calculate the variable cost per unit and total fixed costs (9)

(b) List any 4 assumptions of cost-volume-profit analysis (4)
[22]

QUESTION 4 (18 marks; 22 minutes)

You are the newly appointed financial accountant of Africa1 Hospital You are preparing an analysis of costs in the different departments The admission department's cost and the number of patients admitted during the immediate preceeding six months are provided in the table below

Month	Number of patients	Cost of admission department			
	x	y	xy	x^2	y^2
May	1 800	158 000	284 400 000	3 240 000	24 964 000 000
June	1 900	161 500	306 850 000	3 610 000	26 082 250 000
July	1 950	163 250	318 337 500	3 802 500	26 650 562 500
August	1 850	159 750	295 537 500	3 422 500	25 520 062 500
September	1 750	156 250	273 437 500	3 062 500	24 414 062 500
October	1 700	154 500	262 650 000	2 890 000	23 870 250 000
$\sum$	**10 950**	**953 250**	**1 741 212 500**	**20 027 500**	**151 501 187 500**

Relevant equations:

$y = a + bx$

$\sum y = na + b\sum x$

$\sum xy = a\sum x + b\sum x^2$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2} - \sqrt{n\sum y^2 - (\sum y)^2}}$$

REQUIRED:

(a) Explain briefly if a coefficient of correlation of 0 85 is stronger than a coefficient of correlation of -0 85 (2)

(b) Calculate the fixed and variable elements of the total cost by using the least squares method (6)

(c) Determine how many patients the hospital expects to be admitted during November 2012 if the budgeted cost for the admission department is equal to R140 500 for November 2012 (3)

(d) Explain the difference between *simple regression analysis* and *multiple regression analysis* (4)

(e) Assume that the coefficient of correlation is 0 9 Determine the coefficient of determination and explain the significance thereof (3)

[18]

QUESTION 5 (17 marks; 20 minutes)

You friend owns a small pool shop which sells pool equipment and chemicals She has asked you to assist her with the purchase and storing of inventory After careful enquiry you determine the following with regard to the purchase of pool filters

Annual demand	110 units
Purchase price	R900
Order costs	R80
Stockholding costs	R5 per unit
Insurance costs	R9 per unit
Required after tax rate of return	15% per annum

Additional information

You have approached another supplier of the same pool filters and have negotiated a special price of R820 per pool filter on the condition that you place only 5 orders per annum The order cost will be R70 per order as well as a delivery cost of R40 per order You will need additional storage space which will cost R18 000 per annum

REQUIRED

(a) Calculate the number of orders if you use the economic order quantity model (7)

(b) Determine whether the economic order quantity model or the special price per pool filter should be accepted (10)
[17]