



ECS2601

MAY / JUNE 2017

MICROECONOMICS

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WARNING

A candidate who without authorisation takes into the examination venue any book, document or object which could assist him in the examination, and does not hand over such material to the invigilator before the official commencement of the examination, will be guilty of infringing the University's examination regulations and will be liable to punishment as determined by Council

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ECS2601

(469260)

May/June 2017

MICROECONOMICS

Duration

2 Hours

100 Marks

EXAMINERS

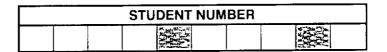
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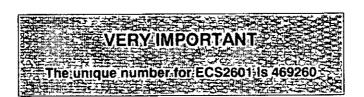
Use of a non-programmable pocket calculator is permissible

Closed book examination

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This paper consists of 21 pages, instructions for the completion of a mark-reading sheet and a special front page





SECTION A

Questions 1 to 5 of the examination question paper are **PRACTICAL** questions

Please answer ALL five questions **Section A** counts 55 marks out of a total of 100

Please answer the questions by showing all the steps

QUESTION 1 (15 Marks)

For each of the following questions, write whether the statement is **true** or **false** Fully explain your answer, using a diagram if appropriate

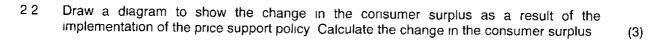
1 1	must be a normal good for Michael	(3)				
12	If good S and good F are perfect complements, you must be indifferent between these two bundles bundle one consists of one unit of good S and one unit of good F, and bundle two consists of two units of good S and one unit of good F					

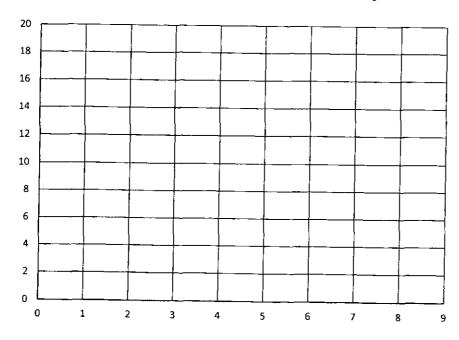
1 3	In a perfectly competitive market, firms take the market price as a given, which implies that the market demand is infinitely elastic	(3)
1 4	A risk averse individual that has to decide between two different lotteries will always prefer a lottery with less risk	(3)
1 5	A consumer finds two goods to be perfectly substitutable. Therefore, the optimal bundle for this consumer will always be a corner solution.	(3)
-		

QUESTION 2 (5 Marks)

Suppose the demand function for corn is, $Q_d = 10-2P$ and the supply function is, $Q_s = 3P-5$ The government is concerned that the market equilibrium price of corn is too low and would like to implement a price support policy to protect the farmers. By implementing the price support policy, the government sets a support price and purchases the extra supply at the support price. In this case, the government sets the support price at $p_s = 4$

21	Calculate the original market equilibrium price and quantity in the absence of the price support policy	(2)





	5	ECS2601 05/06 2017
QUES	ESTION 3 (10 Marks)	
3 1	Specify whether the following South African industries are monopolis monopolistic competitive industries	stic, oligopolistic or
311	1 The cellphone industry	
312	2 The restaurant industry	
313	3 The banking sector	
314	4 Estate wine producers	

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315	Car manufacturers	
316	Rail transport	
3 2	Suppose a firm in an oligopolistic industry faces the following kinked demand for its produ	(3)
	$Q_1 = 100 - P$ $Q_2 = 160 - 2P$	
	Where Q represents units of output and P the price of the product Suppose the firm's total cost is given by the following equation $TC = 100 + 30Q$	
321	What are the firm's profit-maximising price and output?	(3)

		-
322	What is the firm's marginal revenue equation?	(2)
		_
323	Between which values may marginal cost vary without causing a change in the equilibrium price and quantity?	(2)

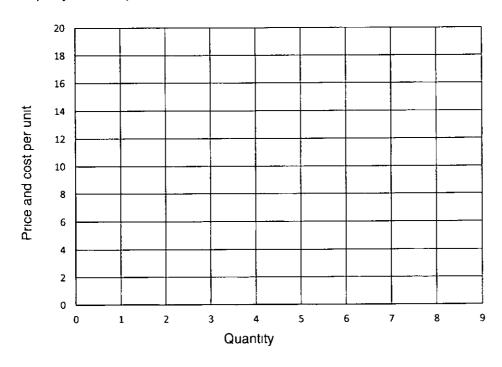
QUESTION 4 (25 Marks)

4.1 Consider and complete the following table that shows the cost structure of a firm

Units	Total fixed cost (TFC)	Total variable cost	Total cost (TC)	Average total cost (ATC)	Average variable cost (AVC)	Marginal Cost (MC)
0			20	-	-	
1		10				
2						6
3		24				
4				13 5		
5			66			
6						14
7		76				
8			114			

Use the set of axes below to complete the ATC, AVC and MC curves on the same set of axes. Ensure that you plot the MC values halfway between the whole values. For example, you would plot the MC value for the first unit halfway between 0 and 1.

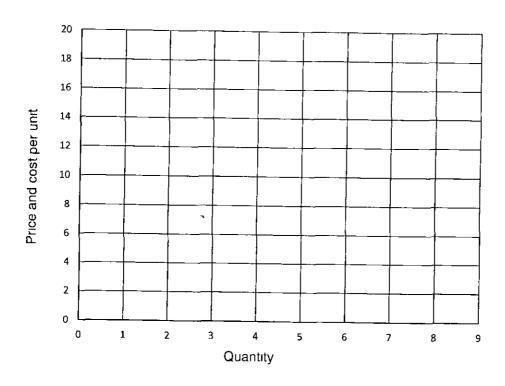
(5)



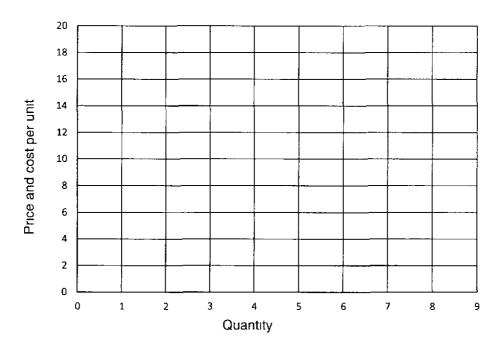
If the market price were R16 per unit, draw the corresponding demand, AR and MR curves along with the MC and ATC curves. Then indicate the equilibrium quantity that this firm would produce, as well as the total profit that the firm makes. From the table, also calculate the total profit.

(5)

[TURN OVER]



4 4	What would happen if the market price decreases to R12 per unit?					
	Again, indicate the corresponding demand, AR and MR curves on the same diagram. Then indicate the equilibrium quantity that this firm would produce, as well as the total loss that the firm makes. Why does the firm continue to produce in the short run?					
		_				
		_				



QUESTION 5 (5 Marks)

Two firms operating in the same market must choose between a collusion price and a cut price. Firm A's outcome is listed before the comma, and firm B's outcome after the comma. If each firm tries to choose a price that is best for it, regardless of the other firm's price, which actions would firm A and firm B choose?

Firm B cuts

Firm A cuts	6,6	24,0	
Firm A colludes	0,24	12,12	

Firm B colludes

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SECTION B

In this section questions 1 to 30 are MULTIPLE-CHOICE QUESTIONS

Answer ALL the questions in this section on the mark-reading sheet provided Carefully follow the instructions for the completion of mark-reading sheets. Also pay attention to the following

- (i) Only one of the alternatives options is correct
- (II) For a correct answer you will receive **one and a half mark**. No marks will be deducted for incorrect answers
- (III) Section B consists of 30 questions and counts 45 marks out of a grand total of 100 marks
- (iv) Place the completed mark-reading sheet in your examination book

Your mark-reading sheet may get lost and you MUST therefore also write down your answers to the questions in this section on page 21 of your examination book, for example 1 [4], 2 [3]; 3 [1]; and so forth.

- from R42 to R38 would be expected to
 - 1 increase total revenue by about 12%
 - 2 increase total revenue by about 2%
 - 3 decrease total revenue by about 2%
 - 4 decrease total revenue by about 10%
- Consider two perfect complements, a keyboard and a computer If the price of only the keyboard increases, then the substitution effect of the price change will be
 - 1 negative because keyboards are inferior goods
 - 2 positive because the consumer feels poorer
 - 3 zero because it is impractical to have more keyboards and fewer computers
 - 4 negative because keyboards and computers are perfect substitutes
- If the supply equation is given as $Q_c = -200 + 10P$, and the price increases from R40 to R50, what is the price elasticity of supply? (Calculate by using the arc elasticity of supply)
 - 1 06

1

- 2 18
- 3 0 56
- 4 20
- If a consumer in Uganda is always indifferent to one additional unit of cassava or two additional units of coffee (the coffee is on the horizontal axis), then the indifference curves will be
 - 1 straight lines with a slope of -1/2
 - 2 straight lines with a slope of -1
 - 3 straight lines with a slope of +1/2
 - 4 right angles whose corners occur on a ray from the origin with a slope of +2
- In which of the following cases would the income and substitution effects for books have the same sign?
 - 1 When books are a normal, ordinary good and the price of books increases
 - When books are an inferior, ordinary good and the price of books increases
 - 3 When books are a Giffen good and the price of books increases
 - 4 None of the above

- 6 Suppose the price of pasta increases and you view pasta as an inferior good. The substitution effect results in a change in pasta consumption and the income effect leads to a change in pasta consumption.
 - 1 positive, positive
 - 2 positive, negative
 - 3 negative, positive
 - 4 negative, negative
- In the short run, the number of machines a firm uses is fixed at 100 machines, but the firm can vary the number of workers it employs. The short-run costs of producing 500 units of output will be
 - 1 greater than the long-run costs of producing 500 units of output
 - 2 less than the long-run costs of producing 500 units of output
 - 3 equal to the long-run costs of producing 500 units of output
 - 4 (1) or (2) could be true
- 8 Isoquants that are downward-sloping straight lines exhibit a(n)
 - 1 increasing marginal rate of technical substitution
 - 2 decreasing marginal rate of technical substitution
 - 3 constant marginal rate of technical substitution
 - 4 marginal rate of technical substitution that cannot be determined
- Suppose a firm uses only capital and labour to produce output and the marginal products of capital and labour are both positive constants. Which one of the following statements is FALSE?
 - 1 The firm's production technology exhibits increasing returns to scale
 - 2 The firm's production technology is monotonic
 - 3 The firm's technical rate of substitution is constant
 - 4 The firm's isocost lines are downward sloping
- Suppose John's income-consumption curve, between Q_a and Q_b , is given as $Q_a = Q_b$ and his budget constraint is given as, $120 = Q_a + 4Q_b$

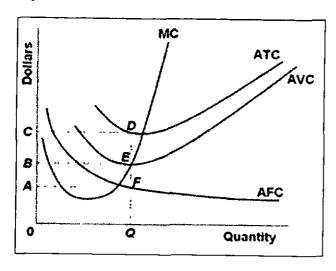
How much Q_a will John consume to maximise utility?

- 1 0
- 2 24
- 3 30
- 4 60

- 11 If a consumer's marginal rate of substitution equals two eggs for one hamburger
 - 1 the consumer's indifference curve must be positively sloped
 - the consumer's indifference curve must be convex with respect to the origin of the graph
 - the ratio of the consumer's marginal utility of one egg to that of one hamburger must equal to $\frac{1}{2}$
 - 4 All of the above are true

Use Figure 1 to answer question 12

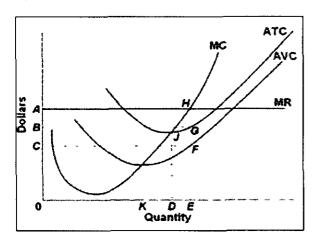
Figure 1



- 12 Refer to figure 1 At output level Q, the total variable cost is
 - 1 0*BEQ*
 - 2 BCDE
 - 3 0CDQ
 - 4 0AFQ

Use Figure 2 to answer question 13

Figure 2



- 13 Refer to the above diagram. To maximise profit or to minimise losses this firm will produce
 - 1 K units at price C
 - 2 D units at price J
 - 3 E units at price A
 - 4 E units at price B
- 14 Vuyo loves watching movies and the table below shows the marginal and total utility that he derives from watching DVDs on a Friday evening. Use the information provided and indicate which one of the following statements is **TRUE**

Number of DVDs	Marginal utility	Total utility
German watched	PERSONAL PROPERTY OF THE PERSONAL PROPERTY OF	
0		
	25	
1		
	18	
2		
	11	
3		
	3	
4		
	-5	
5		

- 1 Vuyo's additional utility from the consumption of the third DVD is 54
- 2 After the fourth DVD, Vuyo's demand for watching movies is satiated
- 3 Up to the fourth DVD, the total utility increases at an increasing rate
- 4 The column for total utility shows the law of increasing marginal utility

[TURN OVER]

- 15 An increase in men's wages will most likely cause
 - 1 an increase in labour force participation by married women due to the substitution effect
 - a decrease in labour force participation by married women due to the income effect
 - 3 no effect on the labour force participation by married women, although the substitution effect will increase the participation of married men
 - 4 an increase in labour force participation by married men, due to the income effect
- The shutdown decision can be restated in terms of producer surplus by saying what a firm should produce in the short run as long as the
 - 1 revenue exceeds the producer surplus
 - 2 producer surplus is positive
 - 3 producer surplus exceeds fixed cost
 - 4 producer surplus exceeds variable cost
- 17 When the price of one good changes, there is an income effect because
 - 1 one of the goods must be inferior
 - 2 the price change represents a change in real income
 - 3 of the diminishing marginal rate of substitution
 - 4 of the completeness of preferences
- Tim receives the following marginal utilities from his first five classes of the semester 100, 80, 60, 40 and 30. What is the total utility of his three favourite classes?
 - 1 60
 - 2 80
 - 3 200
 - 4 240
- 19 Emma expresses grief that she receives less additional utility from each additional Apple MacBook (laptop) Being an economist, she estimates that the total utility she receives from one, two and three MacBooks are 15 000, 27 000 and 36 000, respectively if the price of a MacBook is R15 000, what is the marginal utility for every rand spent on the second MacBook?
 - 1 18
 - 2 08
 - 3 27 000
 - 4 12 000

20 In which of the following market structures is there clear-cut mutual interdependence with respect to price-output policies?

- 1 Pure monopoly
- 2 Oligopoly
- 3 Monopolistic competition
- 4 Pure competition
- 21 Which one of the following industries most closely approximates pure competition?
 - 1 Agriculture
 - 2 Farm implements
 - 3 Clothing
 - 4 Steel
- 22 A purely competitive seller is
 - 1 both a "price maker" and a "price taker"
 - 2 neither a "price maker" nor a "price taker"
 - 3 a "price taker"
 - 4 a "price maker"
- At a firm's current output level of 200 units per week, it has 10 employees at a weekly wage of R500 each. Raw materials, which are ordered and delivered daily, cost R1 000 per week. The weekly cost of the firm's capital is R1 250. Which one of the following statements is TRUE?
 - 1 Total variable cost is R5 000, total fixed cost is R2 250, total cost is R7 250
 - 2 Total variable cost is R6 000, total fixed cost is R1 250, total cost is R7 250
 - 3 Total variable cost is R1 250, total fixed cost is R6 000, total cost is R7 250
 - 4 Total variable cost is R2 250, total fixed cost is R500, total cost is R2 750
- 24 Which one of the following statements about a firm's average cost curves is FALSE?
 - 1 Its SAC (short run average cost) curve will be constant if the price of an input that is fixed in the short run increases
 - 2 Its SAC curve will shift upwards if the price of an input that is variable in the short run increases
 - 3 Its SAC curve will generally lie above its LAC curve
 - Its LAC (long run average cost) curve will shift upwards if new firms enter the industry and there are external diseconomies of scale

- 25 Suppose that the price of labour (PL) is R10 and the price of capital (PK) is R30. What is the equation of the isocost line corresponding to a total cost of R100?
 - 1 $P_L + 20P_K$
 - 2 100 = 30(L+K)
 - 3 100 = 10L + 30K
 - 4 $100 + 30 P_1 + P_K$
- 26 If an entrepreneur is minimising cost for a given output level and the marginal product of labour is 5, the marginal product of capital is 15, and the price of capital is R300, then the price of labour
 - 1 must be R900
 - 2 must be R400
 - 3 must be R100
 - 4 is not possible to determine from the information given

Use the following game to answer question 27

	Player 2 picks A	Player 2 picks B
Player 1 picks A	3,5	1,4
Player 1 picks B	4,1	2,2

- 27 What is the Nash equilibrium in the following game?
 - Both players play B
 - 2 Both players play A
 - 3 Player one plays B and player 2 plays A
 - 4 Player one plays A and player 2 plays B
- Mr Barrett sold his house. Suppose the asking price was R1 720 000, and he decided that he would take no less than R1 700 000. After some negotiation, he sold the house for R1 705 000. His producer surplus is
 - 1 R5 000
 - 2 R10 000
 - 3 R15 000
 - 4 R20 000

29 In a Cournot duopoly model, one characteristic of the equilibrium position is that

- 1 both firms produce the same amount of output
- 2 one firm drives the other out of the market
- 3 the output is less than the single-price monopoly output would be if only one firm were in the market

21

4 the output is the same as the output that would exist in a competitive market

30 A weakness of the Stackelberg model is that

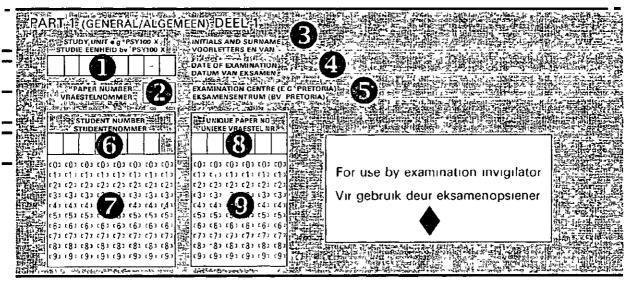
- 1 both firms behave naively rather than strategically
- 2 both firms behave strategically
- 3 one firm behaves strategically while the other behaves naively
- 4 there are no assumptions about how the firms will react to each other

You must write down your a		
1	11	21
2	12	22
3		
	13	23
4	14	24
5	15	25
6	16	26
7	17	27
8	18	28
9	19	29
10	20	30

EXAMINATION MARK READING SHEET

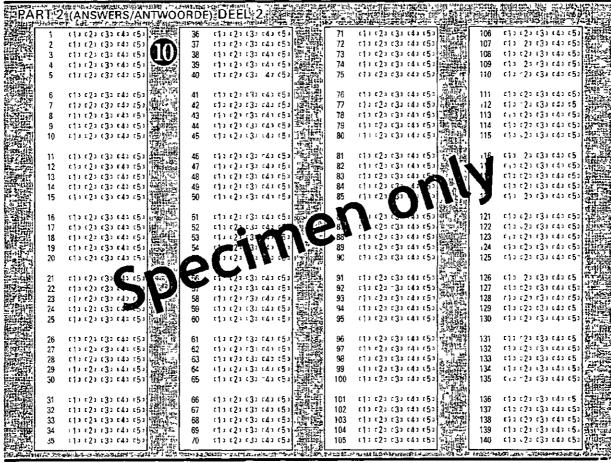


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- 1 USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
- 2. MARK LIKE THIS +2
- 3 CHECK THAT YOUR INITIALS AND SURNAME HAS BEEN FILLED IN CORRECTLY
- 4 ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
- CHECK THAT YOUR STUDENT NUMBER HAS BEEN FILLED IN CORRECTLY
- 6 CHECK THAT THE UNIQUE NUMBER HAS BEEN FILLED IN CORRECTLY
- 7 CHECK THAT ONLY ONE ANSWER PER QUESTION HAS BEEN MARKED
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- 6 KONTROLEER DAT DIE UNIEKE NOMMER REG INGEVUL IS
- MAAK SEKER DAT NET EEN ALTERNATIEF PER VRAAG GEMERK IS
- 8 MOENIE VOU NIE



MARK READING SHEET INSTRUCTIONS

Your mark reading sheet is marked by computer and should therefore be filled in thoroughly and correctly

USE ONLY AN HB PENCIL TO COMPLETE YOUR MARK READING SHEET

PLEASE DO NOT FOLD OR DAMAGE YOUR MARK READING SHEET

Consult the illustration of a mark reading sheet on the reverse of this page and follow the instructions step by step when working on your sheet

Instruction numbers **1** to **1** refer to spaces on your mark reading sheet which you should fill in as follows

Write your paper code in these eight squares, for instance

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The paper number pertains only to first-level courses consisting of two papers

WRITE 0 1 for the first paper and 0 2 for the second If only one paper, then leave blank

- Fill in your initials and surname
- 4 Fill in the date of the examination
- Fill in the name of the examination centre
- WRITE the digits of your student number HORIZONTALLY (from left to right) Begin by filling in the first digit of your student number in the first square on the left, then fill in the other digits, each one in a separate square
- In each vertical column mark the digit that corresponds to the digit in your student number as follows
 [-]
- WRITE your unique paper number HORIZONTALLY

 NB Your unique paper number appears at the top of your examination paper and consists only of digits (e.g. 403326)
- In each vertical column mark the digit that corresponds to the digit number in your unique paper number as follows [-]
- Question numbers 1 to 140 indicate corresponding question numbers in your examination paper. The five spaces with digits 1 to 5 next to each question number indicate an alternative answer to each question. The spaces of which the number correspond to the answer you have chosen for each question and should be marked as follows. [-]
- For official use by the invigilator Do not fill in any information here

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