

ECS2601

OCTOBER / NOVEMBER 2017

MICROECONOMICS

STUDENT NUMBER											

IDENTITY NUMBER											

FOR USE BY EXAMINATION INVIGILATOR

Section	Marks	
	1	2
Examiners		
Total		

Subject

Number of paper

Date of examination

Examination centre

WARNING

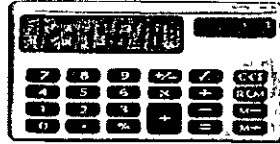
A candidate who without authorisation takes into the examination venue any book, document or object which could assist him in the examination, and does not hand over such material to the invigilator before the official commencement of the examination, will be guilty of infringing the University's examination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

Rough work may be done only on the examination question paper and must be labelled as such

No notes may be made on any part of the body, such as the hands, or on any garment

This page/paper is the property of the University and under no circumstances may the candidate retain it or take it out of the examination venue

NB PLEASE COMPLETE THE ATTENDANCE REGISTER ON THE BACK PAGE, TEAR OFF AND HAND TO THE INVIGILATOR



ECS2601 (469090) October/November 2017
MICROECONOMICS

Duration 2 Hours

100 Marks

EXAMINERS
FIRST
SECOND

MS A BREYTENBACH
PROF C HARMSE

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 18 pages, instructions for the completion of a mark-reading sheet and a special front page

STUDENT NUMBER									

VERY IMPORTANT
The unique number for ECS2601 is 469090

[TURN OVER]

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 (25 marks)

- 1 1 The average monthly income of households in a certain town increases from R2 000 to R2 500
As a result, the quantity demanded of white bread increases from 1 000 to 1 100 units per day, the
quantity demanded of brown bread decreases from 2 000 to 1 900 units per day and the quantity
demanded of KFC (friend chicken) increases from 300 to 500 pieces per day
- 1 1 1 Use the arc elasticity formula to calculate the income elasticity of demand for white bread, brown
bread and KFC, respectively

(9)

- 1 1 2 Classify each of these three products as normal or inferior Explain your answer in each case

[TURN OVER]

(3)

1 1 3 Classify each of these three products as a necessity or a luxury. Explain your answer in each case.

(3)

1 2 Assume that a firm hires 20 labourers at a rate of R60 per labourer per day. The average product of the 20 labourers is three units per day and the last labourer adds one unit per day to the total product. The fixed cost of production is R360.

1 2 1 What is the total production of the 20 labourers?

(2)

1 2 2 What is the total cost of producing the output as calculated in question 1 2 1?

(2)

1 2 3 What is the average total cost if 60 units are produced?

(2)

[TURN OVER]

1 2 4 What is the marginal cost of the 60th unit of output?

(2)

1 2 5 What is the average variable cost if 60 units are produced?

(2)

QUESTION 2 (10 marks)

2 1 Define/describe the following concepts

2 1 1 Monopoly

2 1 2 Oligopoly

2 1 3 Collusion

2 1 4 Interdependence between firms

[TURN OVER]

2.1.5 Monopolistic competition

(5)

2.2 Consider the following table and complete it

Q	Total revenue (TR)	Total cost (TC)	Total profit	Average revenue (AR)	Average total cost (ATC)	Marginal revenue (MR)	Marginal cost (MC)
0	0	50					
1	300	300					
2	575	525					
3	825	725					
4	1 050	900					
5	1 250	1 050					
6	1 425	1 225					
7	1 575	1 425					
8	1 700	1 650					
9	1 800	1 900					
10	1 875	2 175					

(5)

[TURN OVER]

QUESTION 3 (10 marks)

- 3 1 The following table shows the marginal and total utility that Thomas derives from the consumption of pizza slices during an all-you-can-eat lunch at the university's cafeteria. Use the information provided to answer the questions that follows.

(5)

Number of pizza slices eaten	Total utility	Marginal utility
0	0	
1	40	
2	72	
3	99	
4	123	
5	141	
6	149	
7	149	
8	142	

- 3 1 1 What is Thomas' additional utility from the consumption of a fourth pizza slice?

(1)

- 3 1 2 What is Thomas' additional utility from the consumption of a sixth pizza slice?

(1)

[TURN OVER]

3 1 3 What happens to the total utility as Thomas eats more and more pizza?

(1)

3 1 4 What happens to the marginal utility as Thomas eats more and more pizza?

(2)

QUESTION 5 (10 marks)

5 1 Describe the difference between the Cournot model and the Stackelberg model

(4)

5 2 Two firms operating in the same market must choose between a collusion price and a cut price. Firm A's profit 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 B colludes
Firm A cuts	18,18	30,6
Firm A colludes	6,30	24,24

[TURN OVER]

(6)

[TURN OVER]

SECTION B**MULTIPLE-CHOICE QUESTIONS**

In this section, **ALL** the questions must be answered on the attached **mark-reading sheet**. **Carefully follow the instructions for the completion of mark-reading sheets.** Also pay attention to the following

(i) Suppose a question reads as follows

1 A simultaneous increase in supply and demand must result in

- [1] a price increase
- [2] a price decrease
- [3] an increase in quantity
- [4] a change in the law of demand
- [5] None of the above

The correct statement is [3] and you must therefore mark [3] on the **mark-reading sheet**

- (ii) Only one of the alternatives per question is correct. You must therefore not mark more than one alternative for each question
- (iii) For each correct answer you will receive **1½ marks**. No marks will be deducted for incorrect answers
- (iv) Section B consists of 30 questions and counts 45 marks out of a grand total of 100 marks
- (v) **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 for this section on page 18 in your examination book, for example 1 [4]; 2 [3], 3 [1], etc

[TURN OVER]

SECTION B

In this section questions 1 to 30 are **MULTIPLE-CHOICE QUESTIONS**. All the questions must be answered in the table provided. Also pay attention to the following:

- (i) Only one of the alternatives per question is correct
- (ii) For a correct answer you will receive **one and a ½ marks**. 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

- 1 Which of the following statements about the market demand curve for a product is **FALSE**?
- 1 The market demand curve represents the individual demand curves of all consumers added together
 - 2 The market demand curve may shift if there is a change in the behaviour of some households that consume the product
 - 3 The market demand curve may shift if there is a change in the price of the product
 - 4 The market demand curve may shift if there is a change in the number of consumers who buy the product
- 2 If two perfect complements, a keyboard and a computer, are being considered and the price of only the keyboard is increased, 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
- 3 If the supply equation is given as $Q_s = -300 + 15P$, the price elasticity of supply between R30 and R60 (calculated by using the arc elasticity of demand), is
- 1 0.6
 - 2 1.8
 - 3 0.56
 - 4 2.0
- 4 If a consumer in Ghana is always indifferent to one additional unit of cocoa beans or two additional units of oil palms (the oil palms are 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 $+2$

[TURN OVER]

5 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
- 2 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 that Anna has R5 pocket money to spend on cookies and rusks. Both cookies and rusks cost R1 each at the local bakery. The following table presents Anna's total utilities of cookies and rusks respectively. Use the information provided and indicate which one of the following statements is correct.

Units	Total utility from cookies	Total utility from rusks
0	0	0
1	10	14
2	18	24
3	24	32
4	28	38

- 1 When spending her total pocket money of R5 on cookies and rusks, Anna is in equilibrium when she buys two cookies and two rusks
- 2 Anna will be in equilibrium if her total utility is equal to 66 utils
- 3 When spending her total pocket money of R5 on cookies and rusks, Anna is in equilibrium when she buys two cookies and three rusks
- 4 If the price of cookies increases to R1,50, Anna will buy more cookies and fewer rusks

7 A consumer finds that for product A, the price is R5 and the consumer's marginal utility is 100 utils, while for product B, the price is R10 and the consumer's marginal utility is 160 utils. Which of the following statements is **TRUE**?

- 1 The consumer is maximizing utility from A and B
- 2 The consumer would gain more utility from A and B by consuming more A and less B
- 3 The consumer would gain more utility from A and B by consuming less A and more B
- 4 The consumer could only gain more utility from A and B by consuming more of both products

8 Isoquants that are downward-sloping straight lines exhibit a(n)

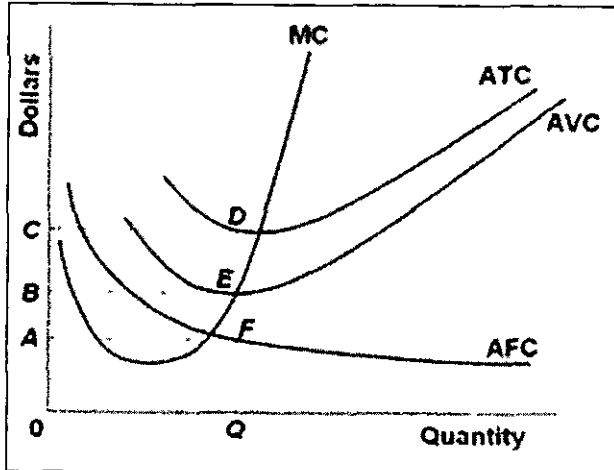
- 1 increasing marginal rate of technical substitution
- 2 decreasing marginal rate of technical substitution
- 3 constant marginal rate of technical substitution
- 4 marginal rate of technical substitution that cannot be determined

[TURN OVER]

- 9 Mr Messi's income-consumption curve between Q_a and Q_b is given as $Q_a = Q_b$. His budget constraint is given as $160 = Q_a + 4Q_b$. How much Q_a will Mr Messi consume to maximise utility?
- 1 0
 - 2 32
 - 3 40
 - 4 80
- 10 If a consumer's marginal rate of substitution equals two Cheeseburgers for one Hawaiian pizza
- 1 the consumer's indifference curve must be positively sloped
 - 2 the consumer's indifference curve must be convex with respect to the origin of the graph
 - 3 the ratio of the consumer's marginal utility of one Cheeseburger to that of one Hawaiian pizza must equal to $\frac{1}{2}$
 - 4 All of the above are true

Use Figure 1 to answer question 11

Figure 1

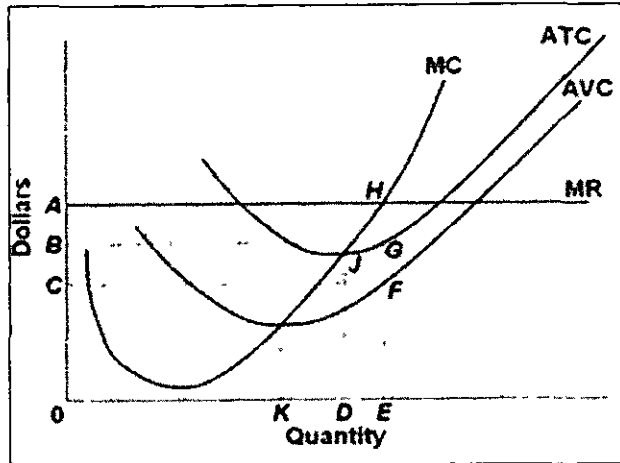


- 11 Refer to the above diagram. At output level Q , the total variable cost is
- 1 $0BEQ$
 - 2 $BCDE$
 - 3 $0CDQ$
 - 4 $0AFQ$

[TURN OVER]

Use Figure 2 to answer question 12

Figure 2



- 12 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
- 13 A firm's average fixed cost is R20 if it produces six units of output If it produces four units, its average fixed cost will be
- 1 R15
 - 2 R18
 - 3 R20
 - 4 R30
- 14 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
 - 2 no effect on the labour force participation by married women, although the substitution effect will increase the participation of married men
 - 3 an increase in labour force participation by married men, due to the income effect
 - 4 a decrease in labour force participation by married women due to the income effect

[TURN OVER]

- 15 The shutdown decision can be restated in terms of producer surplus by saying that a firm should produce in the short run as long as the
- 1 producer surplus is positive
 - 2 revenue exceeds the producer surplus
 - 3 producer surplus exceeds fixed cost
 - 4 producer surplus exceeds variable cost
- 16 When a buyer's willingness to pay for a good is equal to the price of the good the
- 1 buyer's consumer surplus for that good is maximized
 - 2 buyer will buy as much of the good as the buyer's budget allows
 - 3 price of the good exceeds the value that the buyer places on the good
 - 4 buyer is indifferent between buying the good and not buying it
- 17 Suppose that the first four units of a variable input generate total outputs of 100, 250, 350 and 400 respectively. The marginal product of the third unit of input is
- 1 50
 - 2 100
 - 3 150
 - 4 350
- 18 Joshua expresses grief that he receives less additional utility from each additional Apple MacBook (laptop). Being an economist, he estimates that the total utility he 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 1.8
 - 2 0.8
 - 3 27 000
 - 4 12 000
- 19 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

[TURN OVER]

- 20 Which one of the following industries most closely approximates pure competition?
- 1 Agriculture
 - 2 Farm Implements
 - 3 Clothing
 - 4 Steel
- 21 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"
- 22 At a firm's current output level of 300 units per week, it has 10 employees at a weekly wage of R700 each. Raw materials, which are ordered and delivered daily, cost R2 000 per week. The weekly cost of the firm's capital is R2 250. Which one of the following statements is **TRUE**?
- 1 Total variable cost is R7 000, total fixed cost is R4 250, total cost is R11 250
 - 2 Total variable cost is R9 000, total fixed cost is R2 250, total cost is R11 250
 - 3 Total variable cost is R2 250, total fixed cost is R9 000, total cost is R11 250
 - 4 Total variable cost is R4 250, total fixed cost is R700, total cost is R4 950
- 23 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
 - 4 Its LAC (long run average cost) curve will shift upwards if new firms enter the industry and there are external diseconomies of scale
- 24 Suppose that the price of labour (P_L) is R15 and the price of capital (P_K) is R45. What is the equation of the isocost line corresponding to a total cost of R115?
- 1 $P_L + 30P_K$
 - 2 $115 = 45(L+K)$
 - 3 $115 = 15L + 45K$
 - 4 $115 = 45P_L + P_K$

[TURN OVER]

- 25 If an entrepreneur is minimising cost for a given output level and the marginal product of labour is 15, the marginal product of capital is 45, and the price of capital is R900, then the price of labour
- 1 must be R900
 - 2 must be R400
 - 3 must be R300
 - 4 is not possible to determine from the information given

Use the following game to answer question 26

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

- 26 What is the Nash equilibrium in the following game?
- 1 Both players play A
 - 2 Both players play B
 - 3 Player one plays B and player 2 plays A
 - 4 Player one plays A and player 2 plays B
- 27 Mr Tendai Mtawarira sold his penthouse. The asking price was R2 820 000, and he decided that he would take no less than R2 800 000. After some negotiation, he sold the penthouse for R2 805 000. His producer surplus is
- 1 R5 000
 - 2 R10 000
 - 3 R15 000
 - 4 R20 000
- 28 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
 - 4 the output is the same as the output that would exist in a competitive market

[TURN OVER]

29 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

30 The kinked demand curve model of oligopoly assumes that the elasticity of demand

- 1 in response to a price increase is less elastic than the elasticity of demand in response to a price decrease
- 2 in response to a price increase is more elastic than the elasticity of demand in response to a price decrease
- 3 is constant regardless of whether price increases or decreases
- 4 is perfectly elastic if price increases and perfectly inelastic if price decreases

You must write down your answers for section A in the space provided below.

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