



ECS2601

MAY / JUNE 2018

MICROECONOMICS				
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ECS2601

(490721)

May/June 2018

MICROECONOMICS

Duration 2 Hours

100 Marks

EXAMINERS FIRST SECOND

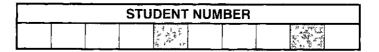
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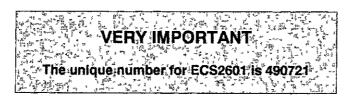
Use of a non-programmable pocket calculator is permissible

Closed book examination

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This paper consists of 17 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)

The table below lists the demand curve for sport bags for each member of the Jones family. Use this information to determine the Jones' aggregate family demand for sport bags.

Family Member	Demand
Michael	Q = 100 - 2P
John	Q = 50 - 5P
Haley	Q = 300
Katy	Q = 150 - P/2
David	Q = 0
Family	

How is a market demand curve different from an individual demand curve?
Which curve is likely to be more price elastic? (Assume that there are no network externalities)

(3)

(3)

(3)

Explain the difference between a movement along the demand curve and a shift of the demand curve

	3	ECS2601 05/06 2018
		(3)
1 4	Consider two goods, X and Y. The price of product X increases from R6 to R8 per unit. A the quantity demanded of product Y decreases from 200 to 190 units.	As a result,
141	Calculate the cross-price elasticity of demand, using the arc elasticity formula, given the above	ınformatıor
		(4)
142	Are goods X and Y substitutes or complements?	
		
		(2)

QUESTION 2 (10 Marks)

21	The Department of Agriculture is interested in analysing the domestic market for maize. The staff economists of the Department of Agriculture estimate the following equations for the demand and supply curves.
	$Q_d = 1600 - 125P$
	$Q_s = 400 + 165P$
211	What is the equilibrium price of maize under a completely free market?
	(3)
212	What is the equilibrium quantity of maize under a completely free market?
	(2)
22	Consider the market for wheat. Using the standard rule of demand and supply, explain how the equilibrium price and quantity would change in each of the following situations, ceteris paribus.
221	Considering the perceived negative health effects of wheat, people decide to eat less bread (wheat is an important ingredient in bread)
<u> </u>	
	(1)

222	Genetically modified wheat is grown on a large scale, resulting in an increased yield by farme	rs
223	Consumers expect the price of wheat to increase	(1)
		(1)
224	There is an increase in the price of barley (barley and wheat are substitutes in production)	
		(1)
225	Floods destroyed a substantial proportion of the wheat harvest and at the same time the avenue increased sharply (wheat is regarded as a normal product)	rage
_		
		(1)

QUESTION 3	(10 Marks)
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3 1	Explain what is meant by the term "utility"	
		(1)
3 2	Describe the concept of marginal utility	
·		
		(1)
3 3	When will a consumer be in equilibrium according to the utility approach?	
		(2)

The following table presents Odwa's marginal utility for each good while exhausting his income Calculate the marginal rate of substitution (MRS) If the price of tuna is twice the price of peanut butter, at what consumption bundle in the table is Odwa maximising his level of satisfaction?

Bundle	Marginal Utility of Peanut Butter	Marginal Utility of Tuna	Marginal Rate of Substitution
A	0 25	2 41	
В	0.31	1 50	
C	0 42	0 84	
(6 marks)	0 66	0 33	

QUESTION 4 (10 Marks)

41	A monopolist faces the following demand curve, marginal revenue curve, total cost curve and marginal cost curve for its product $Q = 250 - 4P$ $MR = 200 - 2Q$ $TC = 10Q$ $MC = 20$	
411	What is the profit-maximising level of output? Show all calculations	
		(4)
412	What is the profit-maximising price? Show all calculations	(')
		(0)
413	What is the total profit earned? Show all calculations	(3)
, , ,	What is the total profit earned. Show all calculations	
		(3)

QUESTION 5	(10 Marks)
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5 1	Explain the meaning strategies?	of a Nash equili	brium How does i	t differ from an equilib	orium in dominant
	<u> </u>		-		
			-		
5 2	Consider the forms	V I V II- ((2)
	generation super com successfully produce	puter for the milit for both markets sfully produce M,	ary (M) or for civilia simultaneousiv Al	mputers Each can progression of the progression of the produces of the following the f	ver, only one can the other might
			Firm Y		
	Firma X		M	С	
	Firma X	<u>M</u>	2,1	2,2	
3	Describe the difference	e between the Cou	urnot model and the	e Stackelberg model	(4)
					(4)

ROUGH WORK WILL NOT BE MARKED				

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 17 of your examination book, for example 1 [4]; 2 [3]; 3 [1]; and so forth.

- 1 Consider the following demand and supply functions Demand Qd = 800 80P, Supply Qs = -200 + 120P What are the equilibrium price and output?
 - 1 P = R3 and Q = 560
 - P = R10 and Q = 300
 - P = R5 and Q = 400
 - 4 P = R3 33 and Q = 500
- 2 The price of good A goes up and as a result, the demand for good B shifts to the left. From this we can infer that
 - 1 good A is a normal good
 - 2 good B is an inferior good
 - 3 goods A and B are substitutes
 - 4 goods A and B are complements
- An important determinant of the amount of grains that will be harvested by Ethiopian farmers next year is the amount of seeds planted this year. Given that foreign nations have guaranteed to donate five hundred tons of grain next year, this year the Ethiopian farmers will
 - 1 plant more seeds as the food aid establishes a minimum price for grain
 - 2 plant more seeds as the farmers' confidence is restored
 - 3 plant the same amount of seeds, as they would have without the food aid
 - 4 plant less seeds as the price of grain will be lower with the food aid
- 4 A Giffen good
 - 1 is always the same as an inferior good
 - 2 is the special subset of inferior goods in which the substitution effect dominates the income effect
 - 3 is the special subset of inferior goods in which the income effect dominates the substitution effect
 - 4 leads to a downward-sloping demand curve
- 5 Which of the following describes the Giffen good case? When the price
 - 1 is always the same as an inferior good
 - 2 is the special subset of inferior goods in which the substitution effect dominates the income effect
 - 3 is the special subset of inferior goods in which the income effect dominates the substitution effect
 - 4 leads to a downward-sloping demand curve

- An increase in the price of a product from R40,00 to R45,00 causes the quantity demanded to decrease from 2 400 to 2 000 units. Using the arc elasticity of demand, the price elasticity of demand is
 - 1 0.75
 - 2 -0 65
 - 3 115
 - 4 -1 55
- If the supply equation is given as $Q_{\gamma} = -300 + 15P$, the price elasticity of supply between R30 and R60 (calculated by using the arc elasticity of demand), is
 - 1 06
 - 2 18
 - 3 0 56
 - 4 20
- 8 The income elasticity of an inferior good is
 - 1 negative because when people get richer they increase their purchases of the good by smaller and smaller amounts
 - one because the increased income offsets the desire to consume less of the good because it is inferior
 - 3 greater than one because the richer you get, the less you consume of the good
 - 4 negative because higher income leads to a reduction in the amount consumed of the product
- 9 If people always spend 25 per cent of their incomes on housing, then the income elasticity of demand for housing is
 - 1 0 25
 - 2 100
 - 3 250
 - 4 indeterminate
- 10 Total economic well-being to society is the
 - 1 consumer surplus less the producer surplus
 - 2 sum of consumer surplus plus producer surplus
 - 3 ratio of consumer surplus to producer surplus
 - 4 total gains to consumers, producers and government

- 11 If the price of a good shown on the vertical axis of a budget graph is cut in half and the price of the good on the horizontal axis is cut by 25%, then the budget constraint
 - shifts left and becomes steeper
 - 2 shifts right and becomes steeper
 - 3 shifts left and becomes flatter
 - 4 shifts right and becomes flatter

Consider the following three market baskets to answer question 12

	Food	Clothing
Α	6	3
В	8	5
С	5	8

- 12 If preferences satisfy all four of the usual assumptions,
 - 1 A is on the same indifference curve as B
 - 2 B is on the same indifference curve as C
 - 3 A is preferred to C
 - 4 B is preferred to A
- 13 If the marginal cost is 50 and the average total cost is 75, we can be sure that
 - 1 marginal cost is rising
 - 2 average total cost is rising
 - 3 marginal cost is falling
 - 4 average total cost is falling
- 14 If a consumer must spend her entire income on some combination of two commodities but chooses to spend it all on just one of the commodities, then the
 - 1 other commodity is an economic bad
 - 2 other commodity must have zero marginal utility
 - 3 other commodity generates less utility per rand spent on the good
 - 4 two commodities must be perfect substitutes
- 15 Kate's income-consumption curve between Q_a and Q_b is given as $Q_a=Q_b$. Her budget constraint is given as $160=Q_a+4Q_b$

How much \mathcal{Q}_a will Kate consume to maximise utility?

- 1 0
- 2 32
- 3 40
- 4 80

16	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
- 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
- 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
 - Total variable cost is R4 250, total fixed cost is R700, total cost is R4 950

19 A firm never operates

- at the minimum of its average total cost (ATC) curve
- 2 at the minimum of its average variable cost (AVC) curve
- 3 on the downward-sloping portion of its ATC curve
- 4 on the downward-sloping portion of its AVC curve
- 20 What happens in a perfectly competitive industry when economic profit is greater than zero?
 - 1 New firms may enter the industry
 - 2 Firms may move along their long-run average cost (LRAC) curves to new outputs
 - 3 There may be pressure on prices to fall
 - 4 All of the above may occur
- Which of the following is not a necessary condition for long-run equilibrium under perfect competition?
 - 1 No firm has an incentive to enter the market
 - 2 No firm has an incentive to exit the market
 - 3 Prices are relatively low
 - 4 Each firm earns zero economic profit

- 22 If a perfectly competitive firm increases production from 10 to 12 units and the market price is R25 per unit, the total revenue for 12 units would be
 - 1 R10
 - 2 R25
 - 3 R250
 - 4 R300
- 23 The monopolist that maximises profit
 - 1 imposes a cost on society because the selling price is above marginal cost
 - 2 impose a cost on society because the selling price is equal to marginal cost
 - does not impose a cost on society because the selling price is above marginal cost
 - 4 does not impose a cost on society because price is equal to marginal cost
- 24 Which of the following statements about natural monopolies are TRUE?
 - 1 Natural monopolies have natural barriers to entry
 - 2 For natural monopolies, marginal cost is always below average cost
 - 3 For natural monopolies, average cost is always increasing
 - 4 Natural monopolies cannot be regulated

Use the following information to answer the next two questions

Maui Macadamia Inc. has a monopoly in the macadamia nut industry. The demand curve, marginal revenue and marginal cost curve for macadamia nuts are given as follows.

$$P = 360 - 4Q$$
 $MR = 360 - 8Q$ $MC = 4Q$

- 25 What is the profit-maximising level of output?
 - 1 0
 - 2 30
 - 3 45
 - 4 60
- 26 At the profit-maximising level of output, what is the level of consumer surplus?
 - 1 0
 - 2 1800
 - 3 2 700
 - 4 3 600

27 When a monopolist engages in perfect price discrimination

- 1 the marginal revenue curve lies below the demand curve
- 2 the demand curve and the marginal revenue curve are identical
- 3 marginal cost becomes zero
- 4 the marginal revenue curve becomes horizontal

Use the following game to answer question 28

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

28 What is the Nash equilibrium in the following game?

- 1 Both players play A
- 2 Both players play B
- 3 Player 1 plays B and player 2 plays A
- 4 Player 1 plays A and player 2 plays B

29 One who follows the Cournot duopoly strategy assumes that competing firms

- 1 treat each other's price as fixed when making an output decision
- 2 treat each other's quantity as fixed when making an output decision
- 3 will pick the strategy most damaging to each other
- 4 will collude informally rather than cut price

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

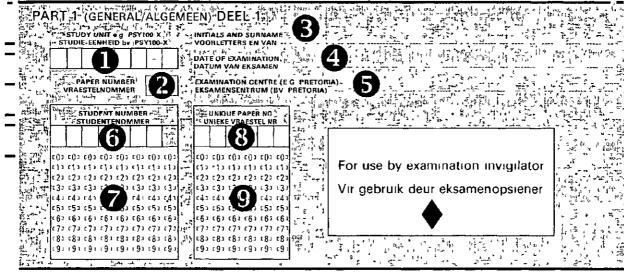
- 1 in response to a price increase is less elastic than the elasticity of demand in response to a price decrease
- 2 in response to a price increase is more elastic than the elasticity of demand in response to a price decrease
- 3 is constant regardless of whether price increases or decreases
- 4 is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

Von mesty in the property of t				
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		

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EKSAMEN-MERKLEESBLAD



IMPORTANT

- 1. USL ONLY AN HB PENCIL TO COMPLETE THIS SHELF
- 2. MARK LIKE THIS 😕
- 3 CHECK THAT YOUR INITIALS AND SURNAME HAS BEEN FILLED IN CORRECTLY
- 4 ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
- 5. 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
- 8 DO NOT FOLD

BELANGRIK

- GEBRUIK SLEGS IN HB POTLOOD OM HIERDIE BLAD TE VOLTOOI
- MERK AS VOLG 🔫
- KONTROLEER DAT U VOORLETTERS EN VAN REG INGEVUL IS
- VUL U STUDENTENOMMER VAN LINKS NA REGS IN
- 5 KONTROLEER DAT UIDIE KORREKTE STUDENTENOMMER VERSTREK HET
- KONTROLEER DAT DIE UNIEKE NOMMER REG INGEVUL IS
- MAAK SEKER DAT NET EEN ALTERNATIEF PER VRAAG GEMFRK IS
- MOENIE VOU NIE

