

ECS2601

(478738)

May/June 2015

MICROECONOMICS

Duration 2 Hours

100 Marks

EXAMINERS ·
FIRST
SECOND

MS SY HO
PROF B MOYO

Use of a non-programmable pocket calculator is permissible.

Closed book examination

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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 478738

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SECTION A

Candidates must answer QUESTION 1 and then EITHER QUESTION 2 OR QUESTION 3. If you do more than two questions, only the first 2 questions will be marked. All questions carry equal marks, namely 20 marks per question. Section A therefore counts 40 marks out of a total of 100.

QUESTION 1 (20 marks)

- 1 (a) Consider the following baskets of goods

	FOOD	CLOTHING
A	8	3
B	6	6
C	3	8

If preferences satisfy all requirements, is A preferred to C or C to A? Explain your answer (4)

- (b) An island economy produces only two goods – coconuts and pineapples. There are five people (A, B, C, D and E) living on the island, with these preferences:

A has a strong preference for pineapples

B has a strong preference for coconuts

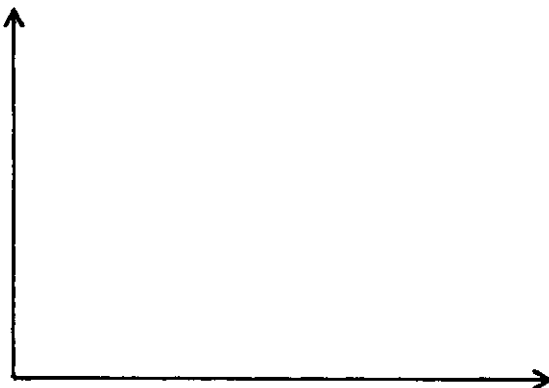
C doesn't care for pineapples (assigns no value to them)

D doesn't care for coconuts (assigns no value to them)

E will only consume pineapples and coconuts in the fixed proportion of one pineapple to one coconut

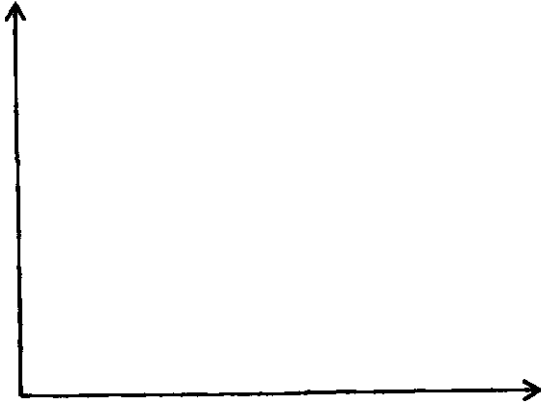
For each of these five individuals, construct a representative indifference curve with pineapples on the horizontal axis and coconuts on the vertical axis (10)

Person A

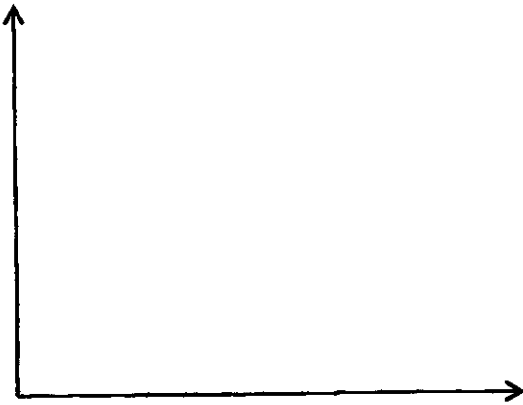


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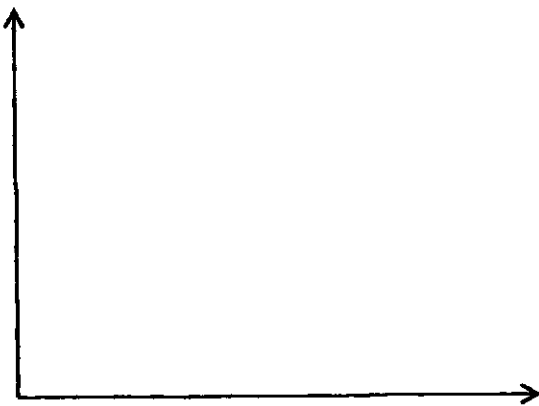
Person B



Person C



Person D



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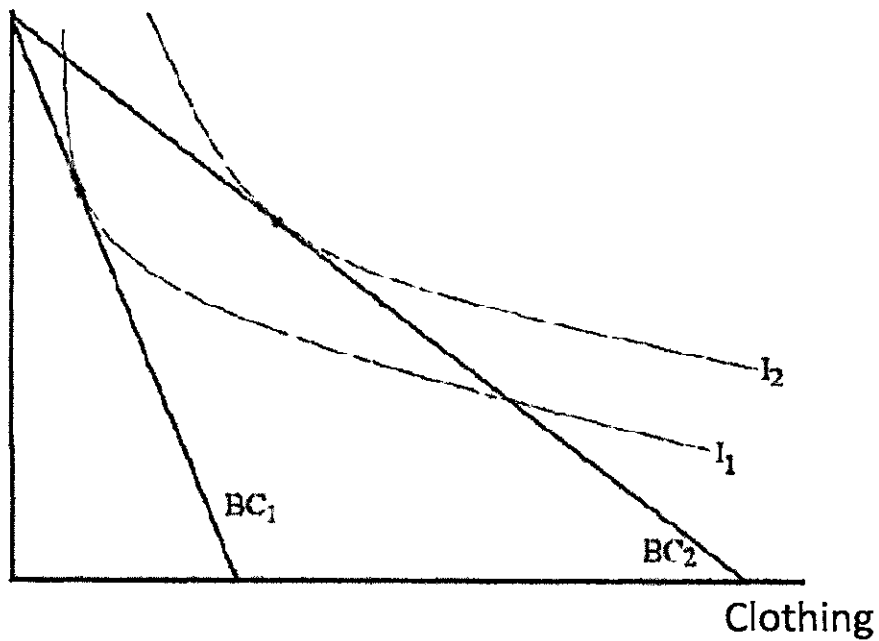
Person E



- (c) The diagram below depicts the change in optimal consumption bundles for Kgomotso when the price of bread decreases. Decompose the change into the income and substitution effects. Indicate the total effect, income effect and substitution effect in the diagram.

(6)

Food



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QUESTION 2 (20 marks)

2 (a) A fast-food restaurant currently pays R20 per hour for labour and R40 per hour to rent ovens and other kitchen machinery. The restaurant uses seven hours of labour time per unit of machinery time.

- (i) Determine whether the restaurant is minimising its cost of production when the ratio of marginal products (capital to labour) is 10 (4)

- (ii) If not, what adjustments are called for to improve the efficiency of resource use? (2)

- (b) (i) The following table contains information for a price taking competitive firm. Complete the table (12)

Output	Total Cost	Marginal Cost	Fixed Cost	Average Cost	Total Revenue	Average Revenue	Marginal Revenue
0			25			-	-
1	35						
2				30			
3		45					
4	185						
5				57			
6		120			150		

- (ii) Determine the profit maximising level of output (2)

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QUESTION 3 (20 marks)

- 3 (a) Suppose a firm can practice perfect, first-degree price discrimination. What is the lowest price it will charge, and what will its total output be? (4)

- (b) A monopolist faces the following demand curve, marginal revenue curve, total cost curve and marginal cost curve for his product

$$\begin{aligned} Q &= 200 - 2P \\ MR &= 100 - Q \\ TC &= 5Q \\ MC &= 5 \end{aligned}$$

- (i) What is the profit maximising level of output? Show your calculation (3)

- (ii) What is the profit maximising price? Show your calculation (3)

- (iii) What is the total profit earned? Show your calculation (3)

[TURN OVER]

- (c) The two leading South African manufacturers of high performance radial tires must formulate their advertising strategies for the coming year. Each firm has two strategies available: maintain current advertising, or increase advertising by 15%. The strategies available to the two firms, A and B, are presented in the payoff matrix below.

	Firm B increases advertising	Firm B maintains advertising
Firm A increases advertising	18, 18	30, 6
Firm A maintains advertising	6, 30	24, 24

The entries in the individual cells are profits measured in millions of rands. Firm A's outcome is listed before the semicolon (,) and Firm B's outcome is listed after the semicolon (,).

- (i) Which oligopoly model in the game theory is best suited for analysing this decision? (1)

- (ii) If each firm tries to choose a strategy that is best for it, regardless of the other firm's strategy, which strategy would firm A and firm B choose? Support your choice by using the given firm's payoffs (6)

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SECTION B

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) Suppose a question reads as follows

8 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 alternative per question is correct. Never mark more than one alternative for each question
- (iii) You will receive **two marks** for each correct answer. No marks will be deducted for incorrect answers
- (iv) Section B consists of 30 questions and counts 60 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 to the questions in this section on page 18 of your examination book, for example 1 [4]; 2 [3]; 3 [1]; and so on.

The following abbreviations may appear in this section:

P_x	=	price of good X	AR	=	average revenue
Q_B	=	quantity of good B	MR	=	marginal revenue
MRS	=	marginal rate of substitution	AP	=	average product
MRTS	=	marginal rate of technical substitution	MP	=	marginal product TP
MRT	=	marginal rate of transformation	MU_A	=	marginal utility of good A
MC	=	marginal cost	TR	=	total revenue
SAC	=	short-run average cost	ACC	=	average constant cost
LAC	=	long-run average cost	TC	=	total cost
LTC	=	long-run total cost	AVC	=	average variable cost
STC	=	short-run total cost	TCC	=	total constant cost
SMC	=	short-run marginal cost	TVC	=	total variable cost
LMC	=	long-run marginal cost			

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SECTION B: MULTIPLE-CHOICE QUESTIONS

- 1 The cross-price elasticity of a pair of complementary goods will be
- [1] positive
 - [2] negative
 - [3] zero
 - [4] positive or zero depending upon the strength of the relationship
- 2 When the government controls the price of a product, causing the market price to be below the free market equilibrium price,
- [1] some consumers gain from the price controls and other consumers lose
 - [2] all producers gain from the price controls
 - [3] both producers and consumers gain
 - [4] all consumers are better off
- 3 The slope of an indifference curve reveals
- [1] that preferences are complete
 - [2] the marginal rate of substitution of one good for another good
 - [3] the ratio of market prices
 - [4] that preferences are transitive
 - [5] None of the above
- 4 A consumer has R300,00 per day to spend on product A, which has a unit price of R8,00, and product B, which has a unit price of R15,00. What is the slope of the budget line if good A is on the horizontal axis and good B is on the vertical axis?
- [1] $-8/15$
 - [2] $-8/300$
 - [3] $-15/8$
 - [4] $8/15$
5. Alice spends no money on movies. This implies that
- [1] she does not derive any satisfaction from movies
 - [2] she is at a corner solution
 - [3] her MRS does not equal the price ratio
 - [4] Any of the above

[TURN OVER]

- 6 Sue views sausages and hotdog buns as perfect complements in her consumption, and the corners of her indifference curves follow the 45-degree line. Suppose the price of sausages is R50 per package (8 sausages), the price of buns is R30 per package (8 hotdog buns), and Sue's budget is R480 per month. What is her optimal choice in this scenario?
- [1] 8 packages of sausages and 6 packages of buns
 [2] 8 packages of sausages and 8 packages of buns
 [3] 6 packages of sausages and 8 packages of buns
 [4] 6 packages of sausages and 6 packages of buns
- 7 Assume that chicken is a normal good. If the price of chicken falls, then the substitution effect results in the person buying _____ of the good and the income effect results in the person buying _____ of the good.
- [1] more, more
 [2] more, less
 [3] less, more
 [4] less, less
- 8 Which of the following is true about the demand for petrol?
- [1] It is probably more price elastic in the long run, because prices will increase by a higher percentage.
 [2] It is probably more price elastic in the long run, because it is easier to find substitutes for petrol in the long run.
 [3] It is probably more price elastic in the short run, because prices will increase by a higher percentage.
 [4] It is probably more price elastic in the short run, because it is easier to find substitutes for petrol in the short run.
- 9 When labour usage is at 12 units, output is 48 units. From this we may infer that
- [1] the marginal product of labour is 4
 [2] the total product of labour is 1/4
 [3] the average product of labour is 4
 [4] None of the above

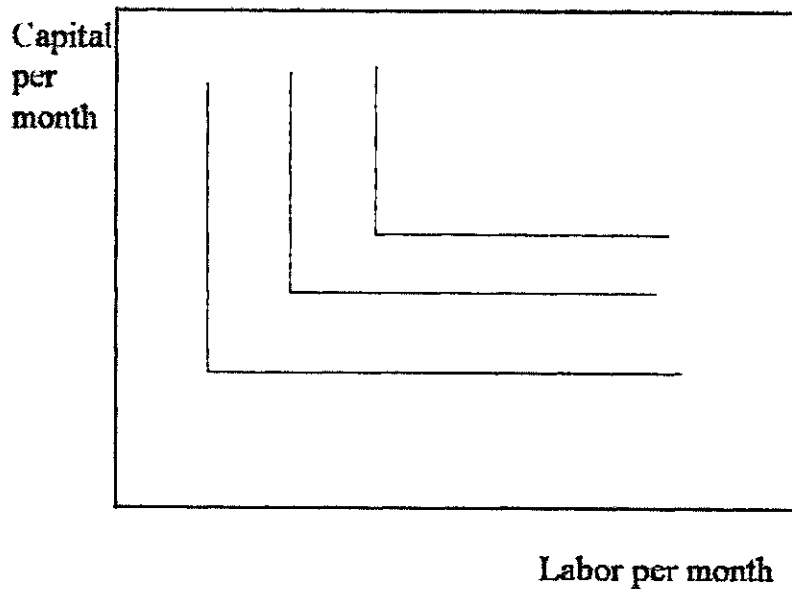
Refer to the following two statements to answer question 10.

- (I) "Decreasing returns to scale" and "diminishing returns to a factor of production" are two phrases that mean the same thing.
- (II) Diminishing returns to all factors of production imply decreasing returns to scale.
- 10 Which of the following is correct about statements (I) and (II)?
- [1] Both (I) and (II) are true
 [2] (I) is true and (II) is false
 [3] (I) is false and (II) is true
 [4] Both (I) and (II) are false

[TURN OVER]

- 11 An examination of the production isoquants in the figure 1 below reveals that

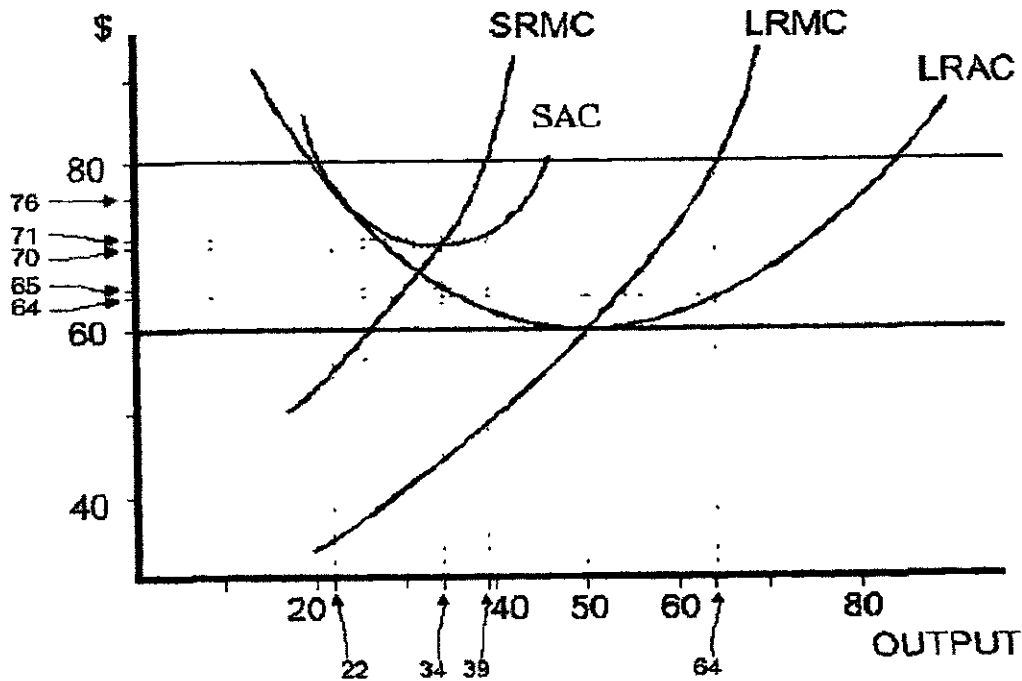
Figure 1



- [1] capital and labour are perfectly substitutable
 [2] capital and labour will be used in fixed proportions
 [3] the MRTS is constant
 [4] [2] and [3]
 [5] None of the above
- 12 When a product transformation curve is bowed outward, there are _____ in production
- [1] economies of scope
 [2] economies of scale
 [3] diseconomies of scope
 [4] diseconomies of scale
- 13 If a competitive firm has a U-shaped marginal cost curve then the profit maximising output
- [1] will always generate positive economic profit
 [2] will always generate positive producer surplus
 [3] is found where $MC = MR$ and MC is increasing
 [4] is found where $MC = MR$ and MC is decreasing
 [5] is found where $MC = MR$ and MC is constant

[TURN OVER]

Figure 2



14 Refer to figure 2 As the firm makes its long-run adjustment, which of the following statements must be true?

- [1] It takes advantage of increasing returns to scale
- [2] It suffers from decreasing returns to scale
- [3] It takes advantage of economies of scale
- [4] It takes advantage of increasing marginal products
- [5] It takes advantage of diseconomies of scale

15 Refer to figure 2 As the competitive industry, not just the firm in question, moves towards long-run equilibrium, at what level of output would the firm be forced to operate?

- [1] 22
- [2] 34
- [3] 38
- [4] 50
- [5] 64

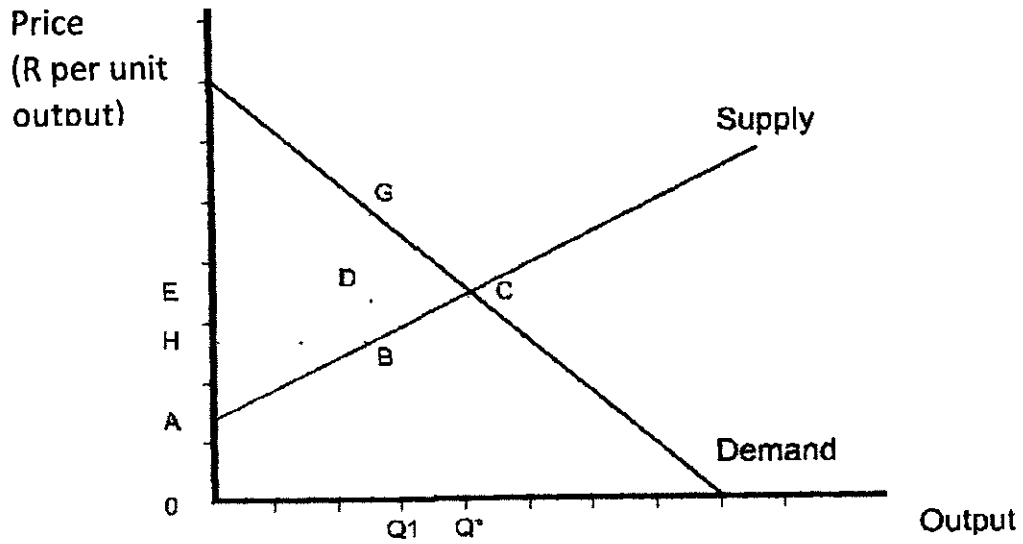
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- 16 A firm that has a kinked demand curve assumes that, if it raises its price, _____ of its competitors will raise their prices and that, if it lowers its price, _____ of its competitors will lower their prices
- [1] all, all
 - [2] none, all
 - [3] all, none
 - [4] none, none
- 17 When a firm charges each customer the maximum price that the customer is willing to pay, the firm
- [1] engages in a discrete pricing strategy
 - [2] charges the average reservation price
 - [3] engages in second-degree price discrimination
 - [4] engages in first-degree price discrimination
 - [5] engages in a price war
- 18 Suppose Nomsa, Noleen and Nothando all purchase small white board markers for their rooms for R1500 each. Nomsa's willingness to pay is R3500, Noleen's willingness to pay is R2500, and Nothando's willingness to pay is R3000. Total consumer surplus for three of them would be
- [1] R1500
 - [2] R3000
 - [3] R4500.
 - [4] R9000
- 19 Which of the following is a key assumption of a perfectly competitive market?
- [1] Firms can influence market price
 - [2] Commodities have few sellers
 - [3] It is difficult for new sellers to enter the market
 - [4] Each seller has a very small share of the market
 - [5] None of the above

[TURN OVER]

20 Refer to the graph in figure 3

Figure 3



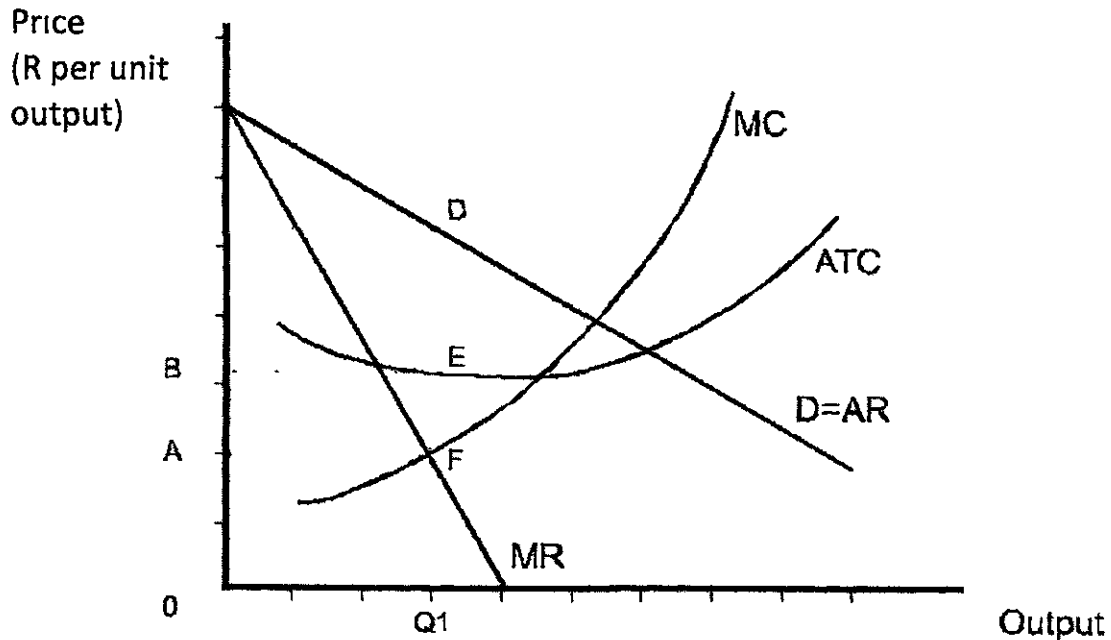
In figure 3 at price OE and quantity Q^* , the deadweight loss is

- [1] $OACQ^*$
- [2] $OECQ^*$
- [3] $OFCQ^*$
- [4] EFC
- [5] None of the above

[TURN OVER]

- 21 How much profit will the monopolist whose cost and demand curves are shown in figure 4 earn at output Q_1 ?

Figure 4



- [1] $0CDQ_1$
 [2] $0BEQ_1$
 [3] $0AFQ_1$
 [4] $ACDF$
 [5] $BCDE$
- 22 If current output is less than the profit maximising output, then the next unit produced
- [1] will decrease profits
 [2] will increase costs more than it increases revenue
 [3] will increase revenue more than it increases costs
 [4] will increase revenue without increasing costs
 [5] may or may not change profits
- 23 Although rice is a staple of the Japanese diet, the Japanese government has long restricted the importation of rice into Japan. The result of this import quota is to
- [1] decrease the price of rice to the Japanese people
 [2] decrease consumer surplus of Japanese rice consumers
 [3] decrease producer surplus of Japanese rice producers
 [4] secure a welfare gain for the Japanese people
 [5] increase the consumption of rice by the Japanese people

[TURN OVER]

- 24 As a manager of the firm, you calculate that the marginal revenue is R100 and the marginal cost is R250. You should
- [1] increase output
 - [2] do nothing since you don't have information about average fixed costs
 - [3] reduce output to where marginal revenue is equal to marginal costs
 - [4] increase output to where marginal revenue is equal to marginal costs
 - [5] maintain the current output unchanged
- 25 If a regulatory agency sets a price where $AR = AC$ for a natural monopoly, output will be
- [1] equal to the competitive level
 - [2] equal to the monopoly profit maximising level
 - [3] greater than the monopoly profit maximising level and less than the competitive level
 - [4] greater than the competitive level
- 26 Which oligopoly model has the same results as the competitive model?
- [1] The Cournot model
 - [2] The Bertrand model
 - [3] The Stackelberg model
 - [4] The kinked demand model or Sweezy model
- 27 In the kinked demand curve model, if one firm increases its price, other firms will
- [1] reduce their prices
 - [2] compete on a non-price basis
 - [3] raise their prices
 - [4] maintain their prices constant
 - [5] wage a price war
- 28 Which of the following is true?
- [1] In Bertrand oligopoly each firm believes that their rivals will hold their output constant if it changes its output
 - [2] In Cournot oligopoly firms produce an identical product at a constant marginal cost and engage in price competition
 - [3] In oligopoly a change in marginal cost never has an effect on output or price
 - [4] None of the above
- 29 All of the following are ways in which oligopoly differs from monopoly and perfect competition except
- [1] firms that consider each other's' actions when choosing price and quantity
 - [2] if there are a few but not infinitely many firms in the industry
 - [3] if firms act strategically
 - [4] if the firms are not subject to diminishing returns in the short-run

[TURN OVER]

30 All of the following are ways monopolistically competitive firms differentiate their products except

- [1] selling with slightly different physical characteristics
- [2] selling products at different locations
- [3] offering different levels of service that come with a product
- [4] creating a special image for the product with advertising
- [5] None of the above are exceptions

Your mark-reading sheet may get lost and you must therefore also write down your answers to the questions in section B in the spaces 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

PART 1 (GENERAL/ALGEMEEN) DEEL 1

STUDY UNIT e.g. PSY100-X
 STUDIE-EENHEID by PSY100-X

INITIALS AND SURNAME
 VOORLETTERS EN VAN

DATE OF EXAMINATION
 DATUM VAN EKSAMEN

PAPER NUMBER
 VRAESTELNOMMER

EXAMINATION CENTRE (E.G. PRETORIA)
 EKSAMENSENTRUM (BY PRETORIA)

STUDENT NUMBER
 STUDENTENOMMER

UNIQUE PAPER NO.
 UNIEKE VRAESTEL NR

For use by examination invigilator
 Vir gebruik deur eksamenopsiener

- IMPORTANT**
1. USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
 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**
1. GEBUIK SLEGS 'N HB POTLOOD OM HIERDIE BLAD TE VOLTOOI
 2. MERK AS VOLG.
 3. KONTROLEER DAT U VOORLETTERS EN VAN REG INGEVUL IS
 4. VUL U STUDENTENOMMER VAN LINKS NA REGS IN
 5. KONTROLEER DAT U DIE KORREKTE STUDENTENOMMER VERSTREK HET
 6. KONTROLEER DAT DIE UNIEKE NOMMER REG INGEVUL IS
 7. MAAK SEKER DAT NET EEN ALTERNATIEF PER VRAAG GEMERK IS
 8. MOENIE VOU NIE

PART 2 (ANSWERS/ANTWOORDE) DEEL 2

1	1) 2) 3) 4) 5)	36	1) 2) 3) 4) 5)	71	1) 2) 3) 4) 5)	106	1) 2) 3) 4) 5)
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