**UNISA** | university of south africa

# MICROECONOMICS 2601

**100 Marks**                                  **2 Hours**

## FI Concession Assessment 21 August 2017

| STUDENT NUMBER |
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| IDENTITY NUMBER |
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| Question No | Marks | | |
|---|---|---|---|
| | Examiners | | |
| | **1** | **2** | |
| Section A | | | |
| Section B | | | |
| Total: A + B | | | |

# August 2017: FI Assessment test for ECS2601

Print the assessment, complete all the questions scan it and send it back by e-mail.

The duration of the test is 2 hours. The remaining hour is to allow you adequate time to access the test and return it. All tests that have not been received back by **13:00** am South African time on **21 August 2017** will not be marked. No exceptions will be made.

Please see below the declaration that you have to complete to certify that the completed test that you submit is your own work. You are allowed to use all your study material to complete the test but it must be your own work – you are not allowed to ask any other person to help you to complete the test. You should arrange for all your study material to be available on the date that you need to complete the test. You are not allowed to use other sources, except for the prescribed study material and your own notes and summaries to complete the assessment. You are not allowed to contact your lecturer to ask questions about the test while it is in progress. If you think that there is a problem with a question in the test, you should indicate this problem in writing on the test.

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**DEPARTMENT OF ECONOMICS**
**FI ASSESSMENT OPPORTUNITY**

**DECLARATION BY STUDENT**

**Full names:** ……………………………………………………………………

**Student no:** ……………………………………………………………………

**Telephone number**: …………………………………………………………….

**E-mail**: ………………………………………………………………………….

**Date of submission:** ……………………………………………………………

> *I declare that the work I am submitting for assessment is my own work and that I received no help from any other person to complete the assessment.*
>
> *I declare that I did not use any other sources except for the prescribed study material and my own notes to complete this assessment.*

…………………………………….. *(Signature)*

ID number: ………………………………………………

Signed on ………………………. (date) at ............…………………..(place).

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**This assessment consists of 18 pages and two (2) sections: A and B**

**ALL the sections are compulsory.**

Answer **Section A** in the space provided below every question and **Section B** in the table provided below the questions.

**SECTION A (55 marks)**

**SECTION B (45 marks)**

## 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                                                                    (4 marks)

Use the following information to answer question 1.1 and 1.2.

The demand for microeconomic books is: $Q_d = 120 - P$

The supply of microeconomic books is: $Q_s = 5P$

1.1   What is the equilibrium price of books?

(2 marks)

1.2   What is the equilibrium quantity of books?

(2 marks)

### QUESTION 2                                                                    (15 marks)

2.1   The average monthly income of households in a certain town increases from R2 500 to R3 000. As a result, the quantity demanded of white bread rolls increases from 1 000 to 1 300 units per day, the quantity demanded of whole grain bread rolls decreases from 800 to 700 units per day and the quantity demanded of McDonald's (hamburgers) increases from 400 to 600 burgers per day.

2.1.1   Use the arc elasticity formula to calculate the income elasticity of demand for white bread rolls, whole grain bread rolls and McDonald's, respectively.

_____
_____
_____
_____
_____
_____
_____
_____
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_____
_____
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_____
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_____

(9 marks)

2.1.2   Classify each of these three products as normal or inferior. Explain your answers in each case.

_____
_____
_____
_____
_____
_____

(3 marks)

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

_____
_____
_____
_____
_____

(3 marks)

**QUESTION 3**

The following table presents Odwa's marginal utility for each good while exhausting his income. Calculate the Marginal Rate of Substitution. If the price of tuna is twice the price of peanut butter, at what consumption bundle in the table is Odwa maximizing his level of satisfaction?

| Bundle | Marginal Utility of Peanut Butter | Marginal Utility of Tuna | Marginal Rate of Substitution |
|--------|-----------------------------------|--------------------------|-------------------------------|
| A | 0.25 | 2.41 | |
| B | 0.31 | 1.50 | |
| C | 0.42 | 0.84 | |
| D | 0.66 | 0.33 | |

Consider the following table that shows the cost structure of a firm:

| Units | Total Fixed Cost (TFC) | Total Variable Cost (TVC) | Total Cost (TC) | Average Total Cost (ATC) | Average Variable Cost (AVC) | Marginal Cost (MC) |
|---|---|---|---|---|---|---|
| 0 | | | 20 | - | - | |
| | | | | | | |
| 1 | | 10 | | | | |
| | | | | | | 6 |
| 2 | | | | | | |
| | | | | | | |
| 3 | | 24 | | | | |
| | | | | | | |
| 4 | | | | 13.5 | | |
| | | | | | | |
| 5 | | | 66 | | | |
| | | | | | | 14 |
| 6 | | | | | | |
| | | | | | | |
| 7 | | 76 | | | | |
| | | | | | | |
| 8 | | | 114 | | | |

4.1 Complete the table.

(10 marks)

4.2 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.
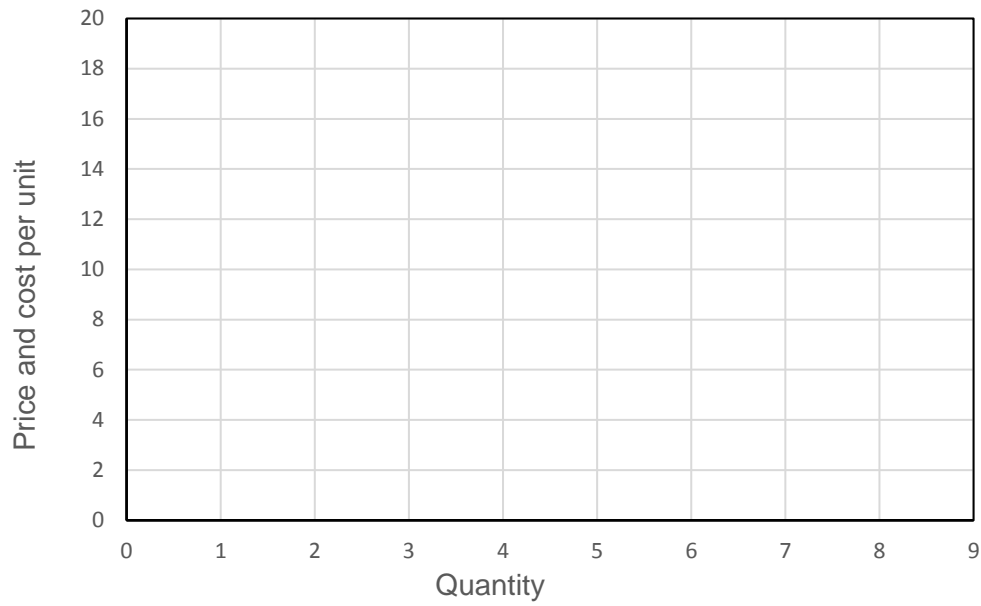
4.3 If the market price were R16 per unit, draw the corresponding demand, AR and MR curves along with the MC and ATC curves. Then indicate the equilibrium quantity that this firm would produce, as well as the total profit that the firm makes. From the table, also calculate the total profit.

_____

_____

_____

_____

_____

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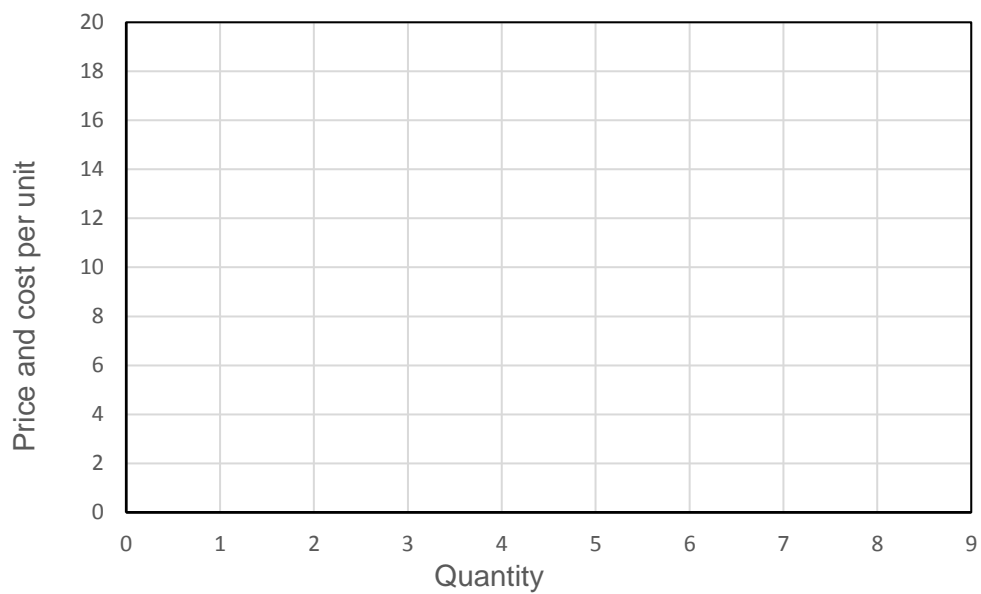
4.4 What would happen if the market price decreases to R12 per unit?
Again, indicate the corresponding demand, AR and MR curves on the same diagram. Then indicate the equilibrium quantity that this firm would produce, as well as the total loss that the firm makes. Why does the firm continue producing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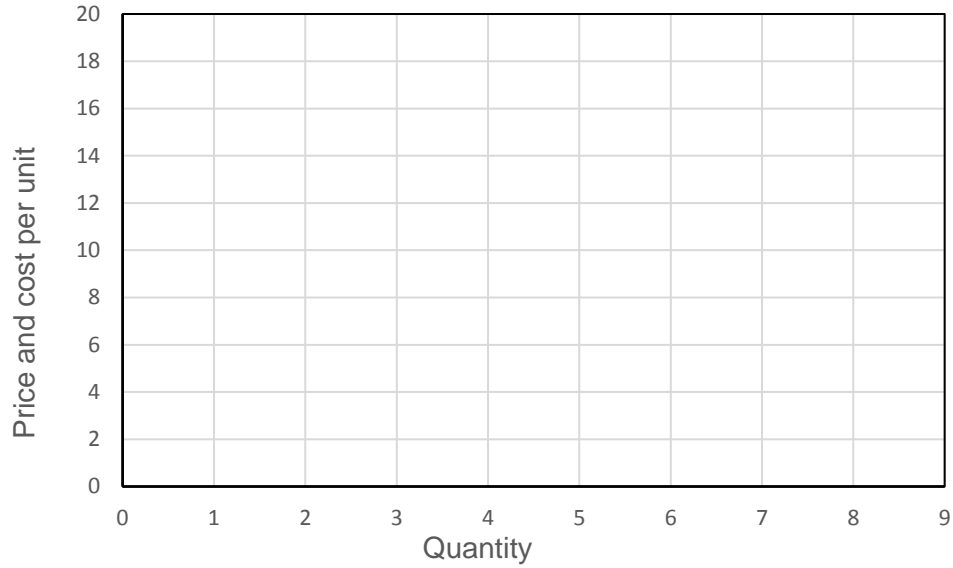


(5 marks)

**QUESTION 5** **(5 marks)**

Two firms at the OR Tambo International airport have franchises to carry passengers to and from hotels in downtown Johannesburg. These two firms, Metro Uber and Urban Uber, operate nine passenger cars. These duopolists cannot compete with price, but they can compete through advertising. Their payoff matrix is below:

| | | Urban Uber | |
|---|---|---|---|
| | | **Increase Advertising** | **Don't Increase Advertising** |
| **Metro Uber** | **Increasing Advertising** | 25, 15 | 30, 0 |
| | **Don't Increase Advertising** | 15, 20 | 40, 5 |

5.1   Does each firm have a dominant strategy? If so, explain what that strategy is.

<br>
<br>
<br>
<br>

(2.5 marks)

5.2   What is the Nash Equilibrium? Explain where the Nash equilibrium occurs in the payoff matrix.

<br>
<br>
<br>
<br>

(2.5 marks)

**ROUGH WORK / ROFWERK**

In Section B 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 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.

1.  Consider the following demand and supply functions: Demand: Qd = 600 - 30P and Supply: Qs = -300 + 120P. What is the equilibrium price and output?

    1.  P = R2 and Q = 540.
    2.  P = R10 and Q = 300.
    3.  P = R6 and Q = 420.
    4.  P = R3.33 and Q = 500.

2.  Which of the following would shift demand curve for new text books to the right?

    1.  A fall in the price of paper used in publishing texts.
    2.  A fall in the price of equivalent used text books.
    3.  An increase in the number of student attending university.
    4.  A fall in the price of new text books.

3.  If there is an excess supply in the market and the price decreases, which of the following combinations of events will occur?

    1.  There will be a fall in quantity supplied and a rise in quantity demanded.
    2.  There will be a fall in quantity supplied and a rise in demand.
    3.  There will be a fall in supply and a rise in quantity demanded.
    4.  There will be a fall in supply and a rise in demand.

4.  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.  1.15.
    4.  -1.55.

5. If the supply equation is given as $Q_s = -100 + 10P$ the price elasticity of supply between R20 and R30, calculated using the arc elasticity of supply, is …

1. 0.6.
2. 1.0.
3. 1.67.
4. 2.0.


6. Which of the following factors **DOES NOT** help to explain why most indifference curves between consumer products slope down to the right and are curved rather than straight?

1. The principle of diminishing marginal utility.
2. The fact that both products are regarded as desirable.
3. The fact that most pairs of products are not perfect substitutes.
4. The fact that the further an indifference curve is from the origin, the more total utility it represents.


7. If indifference curves are concave to the origin, which assumption on preferences is violated?

1. Diminishing marginal rates of substitution.
2. The transitivity of preferences.
3. More is preferred to less.
4. Completeness.


8. If a consumer is always indifferent between an additional one grapefruit or an additional two oranges, then when oranges are on the horizontal axis 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 of a slope of +2.


9. A consumer considers two products. Product A, with a price of R5 and consumer's marginal utility of 100 utils and Product B, with a price of R10 and consumer's marginal utility of 160 utils. Which of the following statements is **TRUE** regarding the products?

1. The consumer will maximize his/her utility by consuming from both product A and B.
2. The consumer would gain more utility from product A and B, by consuming more of product A and less of product B.
3. The consumer would gain more utility from product A and B, by consuming less of product A and more of product B.
4. The consumer could only gain more utility from product A and B by consuming more of both products.

10. Lwazi views apples and oranges as perfect substitutes in his consumption, and MRS = 1 for all combinations of the two goods in his indifference map. Suppose the price of apples is R2 per bag, the price of oranges is R3 per bag, and Lwazi's budget is R30 per week. What is Lwazi's utility maximizing choice between these two goods?

    1.  4 bags of apples and 6 bags of oranges.
    2.  5 bags of apples and 5 bags of oranges.
    3.  10 bags of oranges and no apples.
    4.  15 bags of apples and no oranges.

11. If the total cost is R1000 and the average fixed cost is R16 when 25 units of output are produced, then the average variable cost at that level of output is …

    1.  R16.
    2.  R24.
    3.  R40.
    4.  Impossible to determine.

12. Assume that average product for six workers is fifteen. If the marginal product of the seventh worker is eighteen …

    1.  marginal product is rising.
    2.  marginal product is falling.
    3.  average product is rising.
    4.  average product is falling.

13. What describes the graphical relationship between average product and marginal product?

    1.  Average product cuts marginal product from above, at the maximum point of marginal product.
    2.  Average product cuts marginal product from below, at the maximum point of marginal product.
    3.  Marginal product cuts average product from above, at the maximum point of average product.
    4.  Marginal product cuts average product from below, at the maximum point of average product.

14. Carolyn knows average total cost and average variable cost for a given level of output. Which of the following costs can she **NOT** determine given this information?

    1.  Total cost.
    2.  Average fixed cost.
    3.  Variable cost.
    4.  Carolyn can determine all of the above costs given the information provided.

15. A firm producing six units of output has an average total cost of R200 and has to pay R300 to its fixed factors of production. The average variable cost …

    1. R50.
    2. R150.
    3. R200.
    4. R300.


16. If a perfectly competitive firm increases production from 10 to 11 units and the market price is R20 per unit, the total revenue for 11 units would be …

    1. R10.
    2. R20.
    3. R210.
    4. R220.


17. Michael decides that he would pay as much as R3 200 for a new laptop computer. He buys the computer and realises consumer surplus of R800. How much did Michael pay for his computer?

    1. R800.
    2. R2 400.
    3. R3 200.
    4. R4 000.


18. Suppose Ruhan, Jayde and Chloe all purchase small whiteboard markers for their rooms at R200 each. Ruhan's willingness to pay was R450, Jayde's willingness to pay was R350, and Chloe's willingness to pay was R300. The total consumer surplus for these three would be ...

    1. R200.
    2. R500.
    3. R900.
    4. R1 100.


19. A perfect competitor found that it could produce a maximum output of 100 units each day, which it can sell at the market price or AR of R100, but even at this rate, it would make a loss. Considering this information, under what circumstances would it definitely make a smaller loss if it shut down and produced nothing?

    1. At an output level of 100 units a day, its average variable cost (AVC) would be above R100.
    2. At an output level of 100 units a day, its average fixed cost (AFC) would be above R100.
    3. At an output level of 100 units a day, its short-run average cost (SAC) would be above R100.
    4. At an output level of 100 units a day, its short-run marginal cost (SMC) would be above R100.

20. If a competitive firm's marginal cost curve is U shaped then its short run supply curve is …

1. U shaped as well.
2. the downward sloping portion of the marginal cost curve.
3. the upward sloping portion of the marginal cost curve.
4. the upward sloping portion of the marginal cost curve that lies above the short run average variable cost curve.


21. Second-degree price discrimination is the practice of charging ...

1. the reservation price to each customer.
2. different prices for different blocks of the same good or service.
3. different groups of customers different prices for the same products.
4. each customer the maximum price that he or she is willing to pay.


22. Marginal revenue (MR) for a single-price monopolist will …

1. have the same slope as the demand curve.
2. be zero when price is zero.
3. be negative if the firm is incurring economic losses
4. always be positive if the firm is profit maximizing.


23. Which is **NOT** true of state owned and managed natural monopolies?

1. The state is better able to price at marginal cost (MC) because it can use its taxing power to cover the losses that result from the MC pricing.
2. X-inefficiency is common because the incentives for profit are missing.
3. Bureaucrats frequently maximize the operating budgets of their departments rather than function with a profit-maximization objective.
4. The wise state government will set price equal to average total cost (ATC) so that losses will not have to be borne by the taxpayer.


24. In the kinked demand curve model, if one firm reduces its price …

1. other firms will also reduce their price.
2. other firms will compete on a non-price basis.
3. other firms will raise their price.
4. Both (a) and (b) are correct.


25. If a firm is producing where its short-run marginal cost (SMC) = price and the long-run marginal cost (LMC) is less than long-run average cost (LAC), then it would do better in the long run by …

1. increasing output with its existing plant until LMC equals price.
2. increasing plant size until LMC and SMC are identical and equal to price.
3. decreasing plant size until LAC, short-run average cost (SAC) and price are equal.
4. doing nothing because it is already at the long-run profit maximizing point.

26. 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.

27. In a prisoner's dilemma with prisoners A and B, if they both confess, A gets 5 years and B gets 8 years. If both remain silent, A gets 2 years and B goes free. If one confesses and the other does not, the one who confesses gets 1 year and the other gets 15 years. Which statement is true of this case?

    1. There is a dominant strategy for both A and B.
    2. There is no dominant strategy for either A and B.
    3. There is a dominant strategy for A but not for B.
    4. There is a dominant strategy for B but not for A.

28. With reference to question 27, which one of the following statements is **TRUE**?

    1. A Nash equilibrium exists as the question stands.
    2. A Nash equilibrium does not exist as the questions stands, but if the penalties for both remaining silent were doubled, a Nash equilibrium would exist.
    3. If the penalties were changed so that if both parties confessed, they would go free, then it would be the dominant strategy for both to confess.
    4. Both statement 2 and 3 are correct but statement 1 is incorrect.

29. A weakness of the Stackelberg mode 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. In a Nash equilibrium, …

    1. each player has a dominant strategy.
    2. no players have a dominant strategy.
    3. at least one player has a dominant strategy.
    4. players may or may not have dominant strategies.

| You must write down your answers for section B 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. |