QUEEN'S UNIVERSITY FINAL EXAMINATION
FACULTY OF ARTS AND SCIENCE
DEPARTMENT OF ECONOMICS

Econ 110 Sections (003, 004) - Barber
December 10th 2019

INSTRUCTIONS TO STUDENTS:
This examination is 3 HOURS in length.
There are two sections to this examination.
Please answer all multiple choice questions on the scantron. Please answer all short answer questions in the booklet provided.

The following aids are allowed:
Casio FX-991 calculator

Put your student number on all pages of all answer booklets, including the front.
The exam has two parts: Part I consists of twenty (20) multiple choice questions. Each question is worth 2 marks for a total of 40 marks. Part II consists of short answer questions, marks are noted in parenthesis. There are a total of 50 marks in Part II. There is NO choice, please answer all the questions. The exam is 180 minutes, please budget your time carefully. **Make sure you fill in your scantron sheet in PENCIL, and mark TEST FORM A on your scantron sheet.** GOOD LUCK!

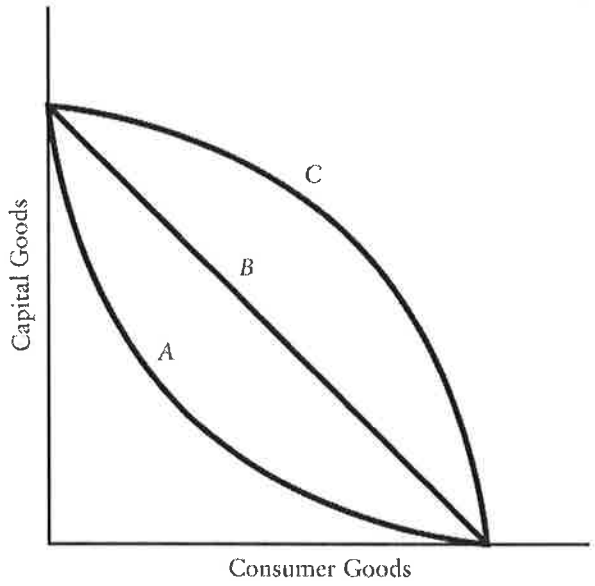
PLEASE NOTE:
Proctors are unable to respond to queries about the interpretation of exam questions.
Do your best to answer exam questions as written.

The table below illustrates that, in one day, Tristan can produce either 12 fishing lures or mow 3 lawns, while Thomas can produce either 6 fishing lures or mow 6 lawns.

	Fishing Lures	Mowed Lawns
Tristan	12	3
Thomas	6	6

1. Refer to the table above. Which of the following statements about Tristan's and Thomas's opportunity costs is correct?

   (a) Tristan has a higher opportunity cost of producing mowed lawns.
   (b) Thomas has a higher opportunity cost of producing mowed lawns.
   (c) Tristan has a higher opportunity cost of producing fishing lures.
   (d) Thomas has a higher opportunity cost of producing fishing lures.
   (e) Both A and D are correct.



2. Refer to the figure above. Which production possibilities boundaries are consistent with increasing opportunity costs?

   (a) boundaries A, B, and C
   (b) boundaries A and B
   (c) boundary C only
   (d) boundary A only
   (e) boundaries B and C

3. Steel is an important input to the production of cars. Tires and cars are used together by consumers. What will occur in the market for tires when there is an increase in the price of steel?

   (a) price rises, quantity falls
   (b) price rises, quantity rises
   (c) price falls, quantity rises
   (d) price falls, quantity falls
   (e) no change in price or quantity occurs

4. Assume that apples and oranges are substitute goods. Given the initial supply and demand curves for apples, a reduction in the price of oranges will tend to

   (a) increase the price of apples.
   (b) decrease the price of apples.
   (c) increase the demand for oranges.
   (d) decrease the demand for oranges.
   (e) increase the demand for apples.

5. Suppose we observe that movie theatre prices are less during the daytime than in the evening. If the supply of movies does not change between daytime and evening, then the most likely explanation for this difference in price is

   (a) the evening demand curve is to the right of the daytime demand curve.
   (b) the evening supply curve is to the right of the daytime supply curve.
   (c) the evening demand curve is to the left of the daytime demand curve.
   (d) the evening supply curve is to the left of the daytime supply curve.

6. Which of the following statements about price elasticity of demand is true?

   (a) It is higher for an entire group of related products than it is for a particular product in that group.
   (b) It usually increases over time.
   (c) It is a positive number because price and quantity demanded move in the same direction.
   (d) It is greater than one if the percentage increase in the commodity's price is greater than the percentage decline in quantity demanded.
   (e) It is very small when good substitutes are readily available for the commodity.

7. Suppose that the quantity demanded of paperback novels rises from 80 000 to 120 000 units per month when the price falls from \$11 to \$9 per unit. The price elasticity of demand for this product is

   (a) 1/3.

   (b) 3/2.

   (c) 1.

   (d) 2.

   (e) 2/3.

8. Suppose you are advising the government on changes in the gasoline market. The current price is \$1.00 per litre and the quantity demanded is 2.5 million litres per day. Long-run price elasticity of demand is constant at 0.8. If the supply of gasoline is reduced so that the price rises to \$1.50 per litre, then quantity demanded is predicted to fall in the long run by

   (a) 15%, and total expenditure will fall.

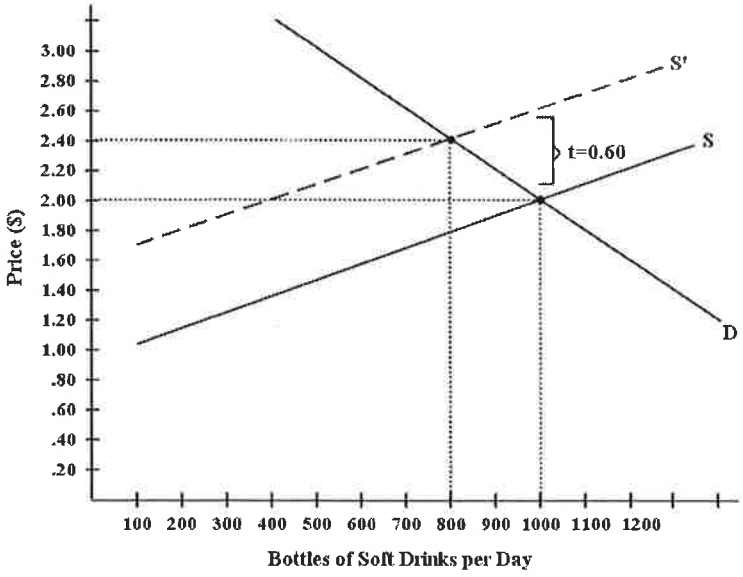
   (b) 32%, and total expenditure will rise.

   (c) 15%, and total expenditure will rise.

   (d) 12%, and total expenditure will fall.

   (e) 50%, and total expenditure will rise.

There have been proposals that a tax be imposed on sugar-laden soft drinks in an attempt to reduce their consumption. Assume for simplicity that all bottled soft drinks are the same size. Suppose the initial market equilibrium is P = \$2.00 and Q = 1000.



9. Refer to the figure above. Suppose the government imposes a tax of \$0.60 per soft drink purchased. Which of the following statements most accurately describes the economic incidence of this tax?

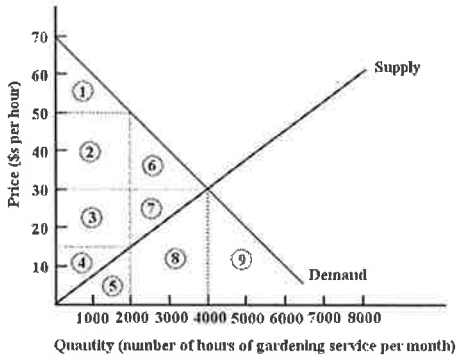
   (a) The seller bears more of the burden because supply is inelastic relative to demand.

   (b) The burden is shared equally between consumer and seller because the slopes of the supply and demand curves are the same.

   (c) The seller bears more of the burden because supply is elastic relative to demand.

   (d) The consumer bears more of the burden because demand is elastic relative to supply.

   (e) The consumer bears more of the burden because demand is inelastic relative to supply.



10. Refer to the figure above. Suppose this market for gardening services is in a free-market equilibrium. If the government then imposes a price floor of \$50 per hour for gardening services, the result would be

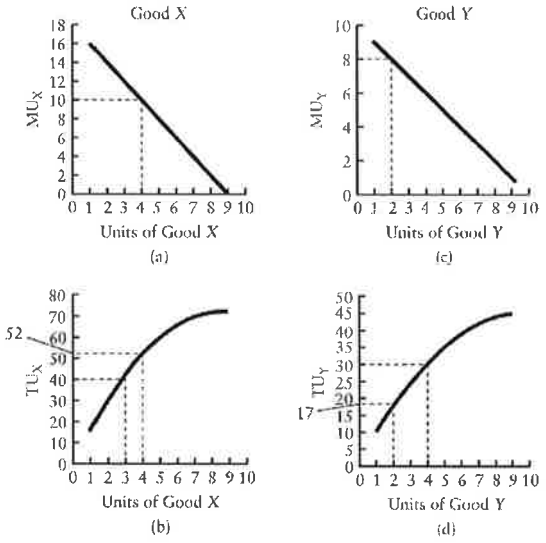
    (a) a loss of economic surplus of the areas 6 and 7.

    (b) a loss of economic surplus of the areas 1, 2, 3, and 4.

    (c) a loss of economic surplus of the areas 2 and 6.

    (d) a loss of economic surplus of the areas 2, 3, 4, 6, and 7.

    (e) a loss of economic surplus of the area 1.



11. Refer to the figure above. Suppose the price of Y is \$1 and the consumer's income is \$10. Initially, the price of X is \$2 and the consumer is buying 3 units of good X and 4 units of good Y. If the price of X then falls to \$1, what quantities of X and Y will he/she now purchase in order to maximize total utility?

    (a) 4 X and 6 Y.

    (b) 6 X and 4 Y.

    (c) 5 X and 5 Y.

    (d) 3 X and 7 Y.

    (e) 2 X and 8 Y.

12. Bjorn is a student with a monthly budget of $500, which he allocates between transportation services and "all other goods." Suppose the price of transportation is $5 per unit, and the price of "all other goods" is $20 per unit. The marginal utility he currently receives from his consumption of transportation services is 60. What is his marginal utility from the consumption of "all other goods" if he is maximizing his utility?

    (a) 5
    (b) 200
    (c) 240
    (d) 25
    (e) 20

13. Suppose the price of potatoes falls and we observe a decrease in an individual's purchases of potatoes. Which of the following can we infer?

    (a) The income effect is negative and reinforces the substitution effect.
    (b) The income effect is negative and outweighs the substitution effect.
    (c) The income effect is positive and exceeds the substitution effect.
    (d) The substitution effect outweighs the income effect.
    (e) The income effect just offsets the substitution effect.

14. Suppose a firm with the usual U-shaped cost curves is producing a level of output such that its short-run costs are as follows:

    - ATC = $0.37 per unit
    - AVC = $0.32 per unit
    - AFC = $0.05 per unit
    - MC = $0.43 per unit

    Given these short-run costs, as the firm increases its output, which of the following statements is true?

    (a) The point of diminishing average product of the variable factor has not yet been reached.
    (b) Marginal product of the variable factor must be decreasing.
    (c) Marginal product of the variable factor is at its minimum point.
    (d) Marginal product of the variable factor must be increasing.
    (e) Average product of the variable factor must be increasing.

15. When a firm's marginal cost is rising, we know that

    (a) average total cost must be rising.
    (b) average fixed cost must be rising.
    (c) marginal product must be zero.
    (d) marginal product must be falling.
    (e) average variable cost must be rising.

16. Suppose your trucking firm in a perfectly competitive industry is making zero economic profits in the short run. The federal government imposes a new safety regulation that affects all firms, thus shifting the marginal cost curve upward. As a result your firm's profit maximizing short-run output will

    (a) remain the same since the new regulation does not affect ATC.

    (b) increase as firms will leave the industry at the higher costs, thus driving up the market price.

    (c) increase as price rises in the long run.

    (d) decrease because the new MC curve will intersect the horizontal demand curve at a lower rate of output.

    (e) remain the same because you will pass on the extra costs to the consumers.

17. Suppose that in a perfectly competitive industry, the market price of the product is \$6. A firm is producing the output level at which average total cost equals marginal cost, both of which are \$8. Average variable cost is \$4. To maximize its profits in the short run, the firm should

    (a) leave its output unchanged.

    (b) reduce its output.

    (c) shut down.

    (d) expand its output.

    (e) There is insufficient information to know.

18. Consider a profit-maximizing single-price monopolist that faces a linear demand curve. The firm sets price where the price elasticity of demand is

    (a) less than one.

    (b) greater than one.

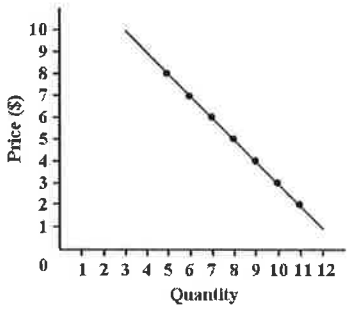
    (c) zero.

    (d) one.

    (e) infinite.

The figure below shows the demand schedule and demand curve for a product produced by a single-price monopolist.

Price ($)	Quantity Demanded
8	5
7	6
6	7
5	8
4	9
3	10
2	11



19. Refer to the figure above. Suppose this single-price monopolist is initially selling 5 units at $8 each and then reduces the price of the product to $6. By making this change, the firm is giving up revenue of _____ on the original number of units sold and gaining revenue of _____ on the additional units sold. Its marginal revenue is therefore _____. (All figures are dollars.)

    (a) 14; 14; 0

    (b) 38; 40; 2

    (c) 10; 12; 2

    (d) 5; 7; -2

    (e) 8; 6; 2

20. For a single-price monopolist, marginal revenue falls faster than price (as output rises) because

    (a) profits are maximized when marginal cost equals marginal revenue.

    (b) in order to sell additional units, the price must be lowered on all units.

    (c) the cost of producing extra units of output increases as production is increased.

    (d) the firm has no supply curve.

    (e) none of the above — marginal revenue does not fall faster than price.

PART II: Short Answer Questions

1. Consider an individual choosing between two types of goods: those that produce carbon with their production ("carbon" Goods), and those that do not ("non-carbon" goods). Assume the consumers monthly budget is $3000. Suppose the price of a "carbon" good is $15 and "non-carbon" good is $30.

   (a) Draw a budget constraint showing the trade-off between "carbon" and "non-carbon" goods. Assuming a representative individual spends 75% of their income on "carbon" goods, and the remaining on "non-carbon" goods, draw an indifference curve showing the optimal consumption bundle. Label the point "A". **5 Marks**

   (b) The government is concerned about climate-change and wants the reduce the amount of "carbon" goods that people are consuming. Suppose the government introduces a carbon tax that raises the price of "carbon" goods to $25. Using your diagram from part A, show the consequences of the price change. Assume that an individual now spends 50% of their income on "carbon" goods and draw an indifference curve showing the new optimal bundle. Label the new optimal as point B. **5 Marks**

   (c) Did the tax work in reducing the amount of "carbon" goods purchased? Segments of the population are furious with this new tax and claim they are now worse off. Are they correct? Explain. **5 Marks**

   (d) Draw the income and substitution effects on your diagram. Suppose the government tried to calm the anger from this new carbon tax by giving each individual a cheque (or cash) that is exactly equal to the income effect. Would the tax be successful in lowering the amount of "carbon" goods purchased? Should this help calm the anger about the carbon tax? Explain. **10 Marks**

2. Suppose there are 185 taco trucks in San Francisco. The market demand curve for tacos is downward sloping and the taco trucks each have the usual u-shaped cost curves. Imagine the taco market is in perfectly competitive long-run equilibrium, and taco trucks are the only businesses that sell tacos.

   (a) Draw the long-run perfectively competitive equilibrium of the taco market in San Francisco. **5 Marks**

   (b) Suppose the city decides to limit the number of taco trucks in the industry by only issuing 50 taco truck licences. How would this influence equilibrium price and quantity of tacos for both the individual taco truck and the industry as a whole? Draw a diagram of your results. **5 Marks**

   (c) The city decides to start charging a fee for these 50 taco truck licences. They are quickly sold. How would the size of the fee influence how many tacos each truck produces? How would it influence profit? What about the price of tacos? **10 Marks**

   (d) If all the food trucks decided to merge and become a monopoly, how would that influence price and quantity of tacos in San Francisco? Use a diagram to explain. **5 Marks**