**Concordia University**
**Department of Economics**

# ECON 201 - INTRODUCTION TO MICROECONOMICS
**Fall 2017**

## COMMON FINAL EXAMINATION - VERSION 1

**FIRST NAME:** _____ **LAST NAME:**_____

**STUDENT NUMBER:** _____

**Please, read all instructions carefully:**

1. The exam consists of two parts:
   (i) Part I: 50 multiple-choice questions (100 marks);
   (ii) Part II: Choose 4 out of 5 long questions (100 marks).
2. Write your name, student ID and answers for the multiple-choice questions on the computer scan-sheet with a **pencil**. Please, also write the **version** of the exam on the computer scan-sheet. For Part II, write all your answers on this exam. Do not use additional booklets.
3. You are allowed to use a non-programmable calculator and a paper dictionary, provided that they are approved by the invigilator(s). You may use either pen or pencil to provide your answers for Part II.
4. You are not allowed to tear any pages out of this exam.

**Grades:**

Part I: _____

Part II:

Problem #1: _____

Problem #2: _____

Problem #3: _____

Problem #4: _____

Problem #5: _____

**Total:** _____

**Part I: Multiple Choice Questions. Write your answers on the computer sheet in PENCIL.(Total=100 marks)**

1. Output at capacity, Yc, refers to the level of output

   (a) An economy can produce when people are working overtime.

   (b) **An economy can produce when machines are run the number of hours they are designed for.**

   (c) An economy can produce when retired workers re-enter the labour force.

   (d) An economy can produce when children grow into adulthood and enter the labour force.

2. Kate spends her evening at home, paying $5 to rent a movie rather than spending an equal amount of time to enjoy a free concert. What is the opportunity cost of staying at home?

   (a) The $5 she spent on the movie.

   (b) **The free concert she missed plus the $5 she spent on the movie.**

   (c) Zero, because the concert is free.

   (d) Zero, because she has a nice evening watching the movie.

3. Suppose you are deciding whether you should rent or buy. Your current rent per month is $800, which includes all utilities and taxes. You have saved up $200,000, which is earning you an interest income of $400 a month. With a $200,000 house, you would need to pay $300 a month on property tax, and utilities for $200. For simplicity, assume that you break even when you sell the house one day. Should you rent or buy?

   (a) Buy, because you save $300 per month.

   (b) Buy, because you save $100 per month.

   (c) Rent, because you save $300 per month.

   (d) **Rent, because you save $100 per month.**

4. Which of the following would be considered as longitudinal data?

   (a) **The annual mortgage payments of Anna, Ben and John between 2005 and 2010.**

   (b) Inflation rates between 1990 and 2010.

   (c) The rise in the cost of living over the past five years.

   (d) The income and gasoline consumption of 1,000 residents in Montreal in 2012.

5. Suppose the price of a pound of quinoa in 1960 was $2, and in 2010, was $6. The CPI in 1960 was 100, and the CPI in 2010 was 320. What is the price of quinoa in 2010 measured in 1960 price level?

   (a) **$1.875.**

(b) $3.275.

(c) $2.86.

(d) $4.5.

6. In 2012, the central U.S. states experienced a severe drought that damaged their corn production. We expect

   (a) The supply curve of corn to shift to the right.

   (b) The demand curve for corn to shift to the right.

   (c) The demand curve for corn to shift to the left.

   (d) **The price of sorghum, canola and soy to rise.**

7. If the demand is given by P=12-2Q and the supply is given by P=2+3Q, what is the equilibrium price?

   (a) $11.

   (b) $9.

   (c) **$8.**

   (d) $10.

8. With a given supply curve, an increase in demand will lead to

   (a) An increase in price but a decrease in equilibrium quantity.

   (b) A decrease in price but an increase in equilibrium quantity.

   (c) A decrease in price and a decrease in equilibrium quantity.

   (d) **An increase in price and an increase in equilibrium quantity.**

9. If the demand equation changes from P=25-6Q to P=25-8Q, which of the following statements is CORRECT?

   (a) The demand for this product has increased, which is a pivot to the left.

   (b) The demand for this product has increased, which is a pivot to the right.

   (c) The demand for this product has decreased, which is a pivot to the right.

   (d) **The demand for this product has decreased, which is a pivot to the left.**

10. If chicken and fish are substitute goods, then an increase in the price of chicken, ceteris paribus, will likely cause

    (a) The quantity demanded for fish to decrease.

    (b) The demand for chicken to shift inward.

    (c) **The price of fish to increase.**

    (d) The demand for fish to decrease.

11. Suppose the government is thinking of offering a subsidy, which is a negative tax, to the producers of a product. This subsidy will encourage a large increase in equilibrium quantity if

(a) **The demand is very elastic.**

(b) The supply is vertical.

(c) The demand is vertical.

(d) The demand is very inelastic.

12. In Quebec, margarine is not allowed to be labeled as "tastes like butter" because of the lobbying efforts of butter manufacturers. The butter producers are trying to

(a) Decrease the income elasticity of butter.

(b) Increase the income elasticity of butter.

(c) Increase the price elasticity of butter.

(d) **Decrease the price elasticity of butter.**

13. If ice cream and frozen yogurt are substitutes, a rise in the price of ice cream is likely to lead to a ___ in the price of frozen yogurt, assuming that the supply curve of frozen yogurt is ___.

(a) Rise; horizontal.

(b) Fall; upward-sloping.

(c) Fall; horizontal.

(d) **Rise; upward-sloping.**

14. If the government imposes a percentage tax on consumers, the more inelastic the supply curve, the

(a) **Smaller the drop in equilibrium quantity.**

(b) The lower the tax revenue.

(c) Larger the deadweight loss.

(d) All of the answers are correct.

15. Why do economists argue that it is not economically efficient to have a completely pollution-free environment?

(a) The clean-up cost associated with achieving zero pollution could be greater than the benefit.

(b) The cost of bearing the pollution may be lower than the benefits the economic activities allowed.

(c) The loss of jobs may be so substantial that people do not want a pollution-free environment.

(d) **All of the answers are correct.**

16. Suppose you are craving sugar and would be willing to pay \$5 for an almond croissant; for a second croissant you are willing to pay \$3, \$2 for a third, at which point you are satiated. This coffee shop also has an all-you-can-eat sugar bar priced at \$6. If you opt for this bar, what is your consumer surplus and what is the marginal price of a croissant?

(a) $6 and $2.

(b) **$4 and $0.**

(c) $6 and $6.

(d) $4 and $2.

17. Which of the following statements is INCORRECT?

(a) A linear, downward-sloping demand has a constant slope but variable elasticities.

(b) A perfectly horizontal demand has a price elasticity of demand that is equal to infinity.

(c) A perfectly vertical demand has a price elasticity of demand that is equal to zero.

(d) **The steeper the demand, the larger is the value of its slope (in absolute value), the more elastic it is.**

18. If beef and pork are substitutes, a rise in the price of beef is represented by ___ the demand curve for beef and a ___ the demand curve for pork.

(a) A leftward shift in; movement along.

(b) **Movements along; rightward shift in.**

(c) A rightward shift in; movement along.

(d) Movements along; leftward shift in.

19. Suppose the demand is given by P=20-Q and the supply is given by P=4+Q. What are the equilibrium price and equilibrium quantity?

(a) $15; 5.

(b) $13; 7.

(c) **$12; 8.**

(d) $14; 6.

20. Suppose the government imposes a $5 tax on each pack of cigarettes. Because the demand for cigarettes is likely to be ____, we expect the drop in equilibrium quantity to be ___, and the deadweight loss created to be ___.

(a) Elastic; large; large.

(b) **Inelastic; small; small.**

(c) Elastic; large; small.

(d) Inelastic; small; large.

21. When economists study the behavior of the firm, what do they assume as the primary goal of the firm?

(a) The firm maximizes advertising in an attempt to build a larger customer base.

(b) The firm maximizes the benefits of its workers.

(c) **The firm maximizes profits or minimizes any losses.**

(d) The firm maximizes total revenue.

22. What is a problem with the principal-agent relationship?

(a) The agent may side with the government when it comes to environmental regulations.

(b) The agent's actions are readily observed by the media.

(c) The agent may not have enough staff to work with.

(d) **The agent may take actions that benefit himself rather than the firm owners.**

23. Which of the following is (are) an example(s) of risk-pooling?

(a) Putting money into a safe at home and depositing some savings in different commercial banks.

(b) Working as a full-time accountant for a firm while teaching courses at night as a part-time instructor.

(c) Including stocks from companies that do well during recession and companies that do well during boom in a financial portfolio.

(d) **All of the answers are correct.**

24. Which of the following best describe(s) the very long run?

(a) Technology may change.

(b) The total labour supply may change.

(c) The capital stock may change.

(d) **All of the answers are correct.**

25. If a firm gains from learning-by-doing, which of the following will describe the effects on its cost curves?

(a) Long run MC will intersect long run ATC when ATC is at its minimum.

(b) Long run ATC will shift downward.

(c) Long run MC will shift downward.

(d) **All of the answers are correct.**

26. Jason is risk-averse while Alex is risk-neutral. They are both considering whether they should play this game: Win \$200 with the probability of 80% or lose \$1,000 with a probability of 20%. What can we predict?

(a) Only Alex will play the game.

(b) Both Jason and Alex will play the game.

(c) **Neither Jason nor Alex will play the game.**

(d) Only Jason will play the game.

27. Which of the following statements is INCORRECT?

(a) If a production method is economically efficient, it must also be technologically efficient.

(b) **If a production method is technologically efficient, it must also be economically efficient.**

(c) The production function can change if technological improvement takes place.

(d) The production function shows the technologically efficient methods to produce different levels of output.

28. What is a fair gamble?

(a) **It yields a zero profit if the game were played many times.**

(b) It yields a positive profit if the game were played many times.

(c) It yields a positive profit if the initial investment is positive.

(d) It yields a negative profit if the game were played many times.

29. How is the marginal product curve of labour related to the marginal cost curve of the firm?

(a) When marginal product is rising, marginal cost is rising.

(b) When marginal product is rising, marginal cost is constant.

(c) **When marginal product is rising, marginal cost is falling.**

(d) The marginal product curve has a U shape, and the marginal cost curve has an inverted U shape.

30. Graphically, the distance between the ATC and AVC curves in the short run will narrow as output level rises. What gives rise to this result?

(a) MC declines.

(b) Technological improvement.

(c) **AFC declines.**

(d) All of the answers are correct.

31. What is (are) CORRECT about the long run supply curve of a perfectly competitive industry?

(a) **It is downward sloping if the industry faces falling production costs.**

(b) Its shape depends on whether the firms are still price-takers in the long run.

(c) It is the upward sloping segment of firms' long-run average total cost curves.

(d) All of the answers are correct.

32. The industry supply of a perfectly competitive industry in the short run is the horizontal sum of all firms' supply curves. What does it mean by horizontal sum?

(a) We pick a price, and then add all the individual firms' ATC.

(b) **We pick a price, and then add all the individual firms' output.**

(c) We pick an output level, and then add all the individual firms' profit or loss.

(d) None of the answers is correct.

33. When a perfectly competitive firm is in a long run equilibrium, which of the following is INCORRECT, assuming the firm has a U-shaped LRAC?

(a) Normal profits could be positive.

(b) MR is constant.

(c) P=MR.

(d) **P>ATC at the equilibrium output level.**

34. Suppose a firm owner takes out his private savings of $100,000 from a commercial bank to pay for a robot to speed up the production process in his firm. The interest rate that the commercial bank was paying on the $100,000 savings deposit was 5%. In other words, the firm owner no longer earns $5,000 in interest income. Which of the following statements is CORRECT?

(a) Normal profits will consider the cost of the robot to be $5,000.

(b) Accounting profits will consider the cost of the robot to be $100,000+$5,000.

(c) Accounting profits will consider the cost of the robot to be $5,000.

(d) **Normal profits will consider the cost of the robot to be $100,000+$5,000.**

35. The industry supply of a constant cost perfectly competitive industry is ___.

(a) Very elastic.

(b) Very inelastic.

(c) **Perfectly elastic.**

(d) Perfectly inelastic.

36. Suppose a monopolist can sell his first unit of output for $10, and for each additional unit sold he must cut the price by $2. At what output will marginal revenue be equal zero?

(a) **Between the 3rd and 4th units.**

(b) Between the 4th and 5th units.

(c) The 5th unit.

(d) Between the 2nd and 3rd units.

37. Why do some economists argue that monopoly is a necessary evil?

(a) Rent-seeking lobbying effort is uncommon in reality.

(b) An industry that experiences constant technological changes is best suited to have a monopolist.

(c) **A monopoly with abnormal economic profits is needed to fund risky research and development.**

(d) All of the answers are correct.

38. Suppose a monopolist faces two groups of consumers. Group 1 has a demand given by $P_1 = 50 - 2Q_1$ and $MR_1 = 50 - 4Q_1$. Group 2 has a demand given by $P_2 = 40 - Q_2$ and $MR_2 = 40 - 2Q_2$. The monopolist faces MC=AVC=ATC=\$10 regardless of which group she supplies to. We can infer from the demand equations that in equilibrium Group ___ is the inelastic group because the elasticity at that point is ___ in absolute value than that of the other group.

    (a) **1; smaller.**
    (b) 2; smaller.
    (c) 1; larger.
    (d) 2; larger.

39. Continue with the previous question: What is the profit-maximizing price for Group 2?

    (a) \$20.
    (b) **\$25.**
    (c) \$23.5.
    (d) \$22.

40. Which of the following is (are) an example(s) of second degree price discrimination?

    (a) Accountants charge different customers with different income levels different fees for their services.
    (b) **People choose a la carte mobile phone plans according to their needs.**
    (c) Seniors pay a lower price for movie tickets.
    (d) All of the answers are correct.

41. The prisoners' dilemma game is one where

    (a) **a best individual strategy leads to a suboptimal outcome.**
    (b) a best individual strategy leads to an optimal outcome.
    (c) a best individual strategy is the same as the best collusive strategy.
    (d) none of the above.

42. In a monopolistically competitive market the equilibrium will occur where

    (a) the MC = MR and P > AC.
    (b) P = AC and MR > MC.
    (c) **MR = MC and P = AC.**
    (d) none of the above.

43. A dominant strategy is

    (a) **always the best strategy regardless of the opponent's strategy.**
    (b) best when the opponent operates in a specific fashion.

(c) where the opponent always dominates.

(d) none of the above.

44. Comparative advantage in international trade in a 2-good world arises where

(a) economy A produces one good at a lower cost than country B and country B produces the second good at a lower cost.

(b) where country A produces both goods at a lower cost than country B but is relatively more efficient in producing one of the goods.

(c) country A is less efficient than country B in producing each good, but is relatively less efficient in producing one of the two goods.

(d) **all of the above.**

45. Comparative advantage can result from

(a) differences in natural endowments.

(b) from investments in human capital.

(c) scale economies.

(d) **all of the above.**

46. Market concentration refers to

(a) **the number of firms in a market that together account for a given percentage of output.**

(b) a monopoly market structure.

(c) a perfectly competitive market structure.

(d) the absence of concentrated pricing power in a market.

47. If tariffs are good for a domestic economy it is because they

(a) **protect jobs.**

(b) lower domestic consumer prices.

(c) require subsidies from government.

(d) all of the above.

48. A quota

(a) places a limit on how much of a domestically produced good that a domestic producer can export internationally.

(b) **limits the amount of a good that can be imported.**

(c) reduces the domestic price of a good that is imported.

(d) none of the above.

49. A Nash Equilibrium is one where

(a) one player succeeds in winning a game and the other player loses.

(b) **each player is implementing their best strategy given how their opponent operates.**

(c) both players have a dominant strategy.

(d) neither player can win the game.

50. Imagine a figure depicting the production possibility curves of two economies A & B, each able to produce two goods X and Y with the same endowments. For each economy to have an absolute advantage in producing one, and only one, of the goods it must be the case that

(a) **the PPFs intersect.**

(b) A's PPF lies completely above B's PPF.

(c) B's PPF lies completely above A's PPF.

(d) none of the above.

**Part II: Answer FOUR of the following FIVE questions. If more than four questions are answered, only the first four attempted will be marked.(Total=100 marks)**

1. Assume a demand equation P = 110 – Q and a supply equation of P = 10 + Q.

   (a) Calculate and graph the market equilibrium price and quantity. (5 marks)
   **P* = $60, Q* = 50 units.**

   (b) Calculate the Consumers' Surplus, the Producers' Surplus and the total welfare in the economy and illustrate them on a graph. (5 marks)
   **C.S. = $ 1250, P.S. = $ 1250, Total Welfare = $ 2500**

   (c) If a price control of $40 was to be imposed, would it be a price floor or a ceiling? Is there an excess supply or an excess demand at this price? What is the amount of this excess supply/demand? Find the actual quantity exchanged in the market at this price, calculate the total expenditure incurred by the consumer and illustrate on a graph. (5 marks)
   **Price Ceiling at $ 40, Excess demand = 40 units.**
   **Actual quantity exchanged = min [QD, QS] = QS = 30 units, Total Expenditure = 30*40 = $1200.**

   (d) Calculate the new total surplus in the economy and the deadweight loss, after the imposition of the price control. (5 marks)
   **New surplus is $2100, Deadweight Loss = $ 400.**

   (e) If you were to impose a specific tax that would yield a DWL equal to that in (d), what would it be? Calculate and illustrate it on a graph. (5 marks)
   **t = $40 / unit.**

2. Lionel likes to eat a nice piece of Brie cheese while having a glass of wine. He has a monthly budget of $120. In a diagram with wine on the vertical axis and cheese on the horizontal axis, suppose that the intercepts are 10 bottles on the wine axis and 4 kilos on the cheese axis. He is observed to purchase 5 bottles of wine and 2 kilos of cheese.

   (a) What are the prices of wine and cheese? (8 marks)
   **If Lionel can buy 10 bottles of wine for $120, then each bottle must cost $12. Similarly cheese must cost $30 per kilo.**

   (b) Suppose that the price of wine increases to $20 per bottle, but that Lionel's income simultaneously increases by $60. Draw the new budget constraint and mark the intercepts. (8 marks)
   **The wine intercept must be 180/20 = 9. Similarly the Cheese intercept must be 180/30 = 6.**

   (c) Is Lionel better off in the new or old situation? (Hint: Ask if he can now afford the bundle he purchased with a lower income and lower wine price.) (9 marks)
   **Yes, he can afford the original combination with the new budget constraint and still have $20 remaining – which he can spend on the goods.**

3. In a competitive market the supply and demand functions are given by: P=1+ (Q/400) and P=21- (Q/100)

(a) Solve for the equilibrium price and quantity in the market place. (5 marks)

**Q=1600**

**P=1+ (1600/400)=5**

(b) Now let's look at a representative firm in this competitive industry. It has a marginal cost curve given by MC=1+(q/4) and it has an average total cost curve given by ATC=(2/q)+1+(q/8). This is a regular U-shaped ATC curve. There is no difference here between the long run and short run. Calculate the break-even level of output. (5 marks)

**In break-even point**

**MC=ATC**

**1+ (q/4) = (2/q) +1+ (q/8)**

**q=4**

(c) Graph the ATC, AVC and MC and calculate the shutdown point level of output, if AVC=1+(q/8). (5 marks)

**In shutdown point MC=AVC, q=0. MC and AVC have the same vertical intercept 1, and MC is everywhere above AVC. ATC is U-shaped and MC=ATC min.**

(d) Now use the price you got in part (a) and determine the output level of each of these representative firms using the profit maximizing rule for choice of output. (5 marks)

**P=MC, q=16.**

(e) Once you have determined how much each firm produces, using the result from part (a) calculate how many firms there must be in the industry. (5 marks)

**Q=1600 q=16 Number of firms in the industry=Q/q=1600/16=100.**

4. A monopolist faces a market demand defined by P = 100 - (1/5)Q. Her marginal cost is given by MC = 20. There are no fixed costs.

(a) Graph the market demand, the marginal revenue curve and the marginal cost curve, labeling the intercepts. (5 marks)

**Demand: P = 100 - (1/5)Q, MR = 100 –(2/5)Q, MC horizontal at 20.**

(b) Calculate the monopolist's profit-maximizing price, output and profit. (5 marks)

**Monopolists choose output such that MR = MC, so Q=200.**

**P = 100 – (1/5)(200), P=60.**

**Profit = 60*200 – 20*200, Profit = 8000.**

(c) Suppose that this market can now be divided into two separate markets and the supplier can discriminate between them. The demand curves are given by P = 100 - (1/3)Q and P = 100 - (1/2)Q. Graph each of these demands in a new figure and insert their marginal revenue curves. Label the intercepts. (5 marks)

**Demand 1: P = 100 – (1/2) Q, MR = 100 – Q**

**Demand 2: P = 100 – (1/3)Q, MR = 100 – (2/3)Q**

(d) Calculate the profit-maximizing output level and price in each of these two markets. (5 marks)

**In the first market: The monopolist will choose output such that MR = MC, 100 - Q = 20, Q=80.**

**P = 100 – (1/2) *(80), P=60.**

**In the second market: The monopolist will choose output such that MR = MC, 100 - (2/3) Q = 20, Q=120.**

**P = 100 – (1/3) *(120), P=60.**

(e) Without calculating profit in each of these markets, will the profit be more, less or the same as in the market where just a single price is charged for all buyers? (5 marks)

**Profit must be the same as in the single price market (this is due to the form of the functions used here), because the total quantity sold and the price are the same as in the single market.**

5. Consider two countries North and South. They produce goods Y and X. With all of her endowments, North can produce 10Y or 60X. South can produce 9Y or 36X.

(a) Graph the production possibilities on a large graph and carefully label the intercepts. (5 marks)

**For North: X intercept is 60, Y intercept is 10.**

**For South: X intercept is 36, Y intercept is 9.**

(b) Which country will specialize in producing which good if they trade, and why? (3 marks)

**North in X, South in Y, since North opportunity cost of 1Y=6X is higher than South's opp. cost of 1Y=4X.**

(c) Suppose they trade at an exchange rate mid-way between their rates of transformation, what will this rate be? Graph the consumption possibility frontiers for each economy. (6 marks)

**Rate is 1Y=5X, consumption frontiers are straight lines, have a slope of 5 with X on vertical axis and start from their specialization points (0,60) for North and (9, 0) for South.**

(d) If South exports one third of its output, following specialization, how many units will it export to North? (4 marks)

**Since South specializes in Y and produces 9 units, it will export 9/3=3Y.**

(e) How many units of X will South get in return? (3 marks)

**Since the exchange rate is 1Y=5X, then 3Y will bring in 15X.**

(f) How many units of each good will be consumed by N and S following the trade? (4 marks)

**North: 45X, 3Y; South: 15X, 6Y.**