Concordia University
Department of Economics

ECON 201 - INTRODUCTION TO MICROECONOMICS
Fall 2015

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. Mary is thinking about going to the hockey game tonight. A ticket costs $100 and she will have to cancel her job that pays $40. She is going to have dinner that costs her $20, whether she goes to the game or to her job. The cost of seeing the hockey game is therefore:

   (a) $100.
   (b) $40.
   (c) **$140.**
   (d) $160.

2. Which of the following statement(s) is (are) positive?

   (a) If income increases, sales of luxury goods will fall.
   (b) When minimum wages are raised, unemployment rises.
   (c) **All of the above.**
   (d) None of the above.

3. All the following conditions will cause an outward shift of the production possibilities frontier except:

   (a) an improvement in the overall technology of production.
   (b) existing factors of production become more productive.
   (c) the quantity of the factors of production increases.
   (d) **previously unemployed factors of production are put back to work.**

4. "What must be sacrificed when a choice is made" is called the:

   (a) **Opportunity cost.**
   (b) Explicit cost.
   (c) Variable cost.
   (d) Marginal cost.

5. Increased equity generally involves:

   (a) **Increased inefficiency.**
   (b) A better use of resources.
   (c) Increased incentives to work.
   (d) Higher standards of living.

6. Economics is best defined as the study of:

(a) **Choice.**

(b) Markets.

(c) Innovation.

(d) Fairness.

7. Referring to the table below, which defines the cost of producing wine and generators per unit in France and Germany, we can conclude:

   (a) **France has a comparative advantage in wine and Germany has a comparative advantage in generators.**

   (b) Germany has a comparative advantage in wine and France has a comparative advantage in generators.

   (c) Germany has a comparative advantage in both goods.

   (d) None of the above statements are true.

	Germany (euros)	France (euros)
Wine	10	20
Generators	10,000	30,000

8. Which of the following is not an argument that supports free trade?

   (a) More likely that the Minimum Efficient Scale output can be produced and sold.

   (b) Competition forces the firms to become more efficient.

   (c) Competition offers the consumers more choices and lower prices.

   (d) **Free trade decreases the degree of sovereignty of a country.**

9. A non-tariff barrier includes which of the following?

   (a) Import quotas.

   (b) Safety standards.

   (c) Safety regulations.

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

10. Suppose Australia can produce 5 computers or 25 tons of wheat, while Canada can produce 3 computers or 9 tons of wheat. What can we conclude?

    (a) Canada has a comparative advantage in wheat production.

    (b) **Australia has a comparative advantage in wheat production.**

    (c) Australia cannot gain from trading with Canada.

    (d) Canada has an absolute advantage in wheat production.

11. If the price elasticity of demand is unit then a fall in price:

(a) Reduces revenue.

(b) **Leaves revenue unchanged.**

(c) Increases revenue.

(d) Reduces costs.

12. If the cross elasticity of demand is -2:

(a) The products are substitutes and demand is cross price elastic.

(b) The products are substitutes and demand is cross price inelastic.

(c) **The products are complements and demand is cross price elastic.**

(d) The products are complements and demand is cross price inelastic.

13. The income elasticity is +2 and income increases by 20%. Sales were 5000 units, what will they be now?

(a) 3000.

(b) **7000.**

(c) 5500.

(d) 4500.

14. Price increases from 10 to 12 pence and the price elasticity of demand is -0.5. The quantity demanded was 500 units. What will it be now?

(a) 550 units.

(b) 500 units.

(c) **450 units.**

(d) 490 units.

15. For an inferior good with a downward sloping demand curve:

(a) **The price elasticity of demand is negative; the income elasticity of demand is negative.**

(b) The price elasticity of demand is positive; the income elasticity of demand is negative.

(c) The price elasticity of demand is negative; the income elasticity of demand is positive.

(d) The price elasticity of demand is positive; the income elasticity of demand is positive.

16. In a free market, goods with positive externalities will:

(a) be overproduced in the market place.

(b) have the marginal valuation of the externality reflected in their price.

(c) be produced to the point at which the marginal social benefit equals the marginal social cost of the last unit produced.

(d) **be under-produced at the market equilibrium.**

17. Consider the market for potatoes with inverse demand given by $P = 60 - 2Q_D$ and inverse supply given by $P = 10 + 3Q_S$. Suppose the government impose an excise tax on supplier \$5 per unit. Find the government revenue.

    (a) Government Revenue= \$40.
    (b) Government Revenue= \$30.
    (c) Government Revenue= \$50.
    (d) **Government Revenue= \$45.**

18. Refer to the previous question. Find the consumer surplus and producer's surplus after excise tax.

    (a) **CS =81, PS=121.5.**
    (b) CS =85, PS=125.
    (c) CS =110, PS=140.
    (d) CS =45, PS=150.

19. Refer to the previous question. Find the Dead Weight loss.

    (a) DWL=0.4.
    (b) **DWL=2.5.**
    (c) DWL=5.
    (d) DWL=5.4.

20. A homeowner who keeps his sidewalk neatly shoveled creates a _____ externality to his neighbours. Without any government policies, the number of homeowners who would keep a clean sidewalk will be too ___ compared to the efficient equilibrium. To correct this problem, the government can use a corrective _____.

    (a) Negative; high; tax.
    (b) **Positive; low; subsidy.**
    (c) Negative; low; subsidy.
    (d) Positive; high; tax.

21. Which of the following is not a property of indifference curves?

    (a) They are negatively sloped.
    (b) **They are bowed out.**
    (c) They do not intersect.
    (d) Higher curves represent higher levels of utility.

22. Tootie has spent all of his income on banjos and pizza. Banjos cost \$50 and pizza costs \$10. On the last banjo he bought, he got 50 units of utility and on the last pizza he bought, he got 20 units of utility. If Tootie wants to maximise his utility, he should

    (a) Increase his consumption of banjos and decrease his consumption of pizzas.
    (b) **Increase his consumption of pizzas and decrease his consumption of banjos.**
    (c) Not change a thing.
    (d) Increase his consumption of banjos and pizzas. More of both will make him happier.

23. Ranking commodity bundles according to the level of satisfaction associated with each bundle is called

    (a) **Ordinal utility.**
    (b) Cardinal utility.
    (c) Marginal utility.
    (d) Indirect utility.

24. All things equal, a decrease in the price of a good will

    (a) **Increase the size of the affordable set.**
    (b) Decrease the size of the affordable set.
    (c) Not affect the size of the affordable set.
    (d) Possibly affect the size of the affordable set, depending on which good is on which axis.

25. Diminishing marginal utility implies

    (a) **Lower additional happiness at higher levels of consumption.**
    (b) Lower additional happiness at lower levels of consumption.
    (c) Lower overall happiness at all levels of consumption.
    (d) Lower overall happiness at higher levels of consumption.

26. The marginal rate of substitution is the ratio of

    (a) **The marginal utility of one good to the marginal utility of another.**
    (b) The total utility from consuming one good to the total utility from consuming another.
    (c) The price of one good to the price of another.
    (d) The marginal utility of one good to its price.

27. The idea that a utility-maximising consumer should equalise the marginal utility of each good per dollar spent on each good is best captured by the phrase

    (a) A penny saved is a penny earned.
    (b) Don't put all your eggs in one basket.

(c) **Getting the same bang for your buck.**

(d) You must spend money to make money.

28. A person who refuses a fair gamble, regardless of the variance in outcomes is

(a) **Risk averse.**

(b) Risk neutral.

(c) Risk loving.

(d) Risk manager.

29. Which of the following assets offers the highest expected return?

(a) 60 percent chance of earning 10 percent and 40 percent chance of earning 0 percent.

(b) **50 percent change of earning 15 percent and 50 percent chance of earning -2 percent.**

(c) 40 percent chance of earning 20 percent and 60 percent chance of earning -5 percent.

(d) 30 percent chance of earning 30 percent and 70 percent chance of earning -4 percent.

30. Aggregating multiple independent risks to reduce overall risk is an example of

(a) **Pooling risk.**

(b) Spreading risk.

(c) Ventured risk.

(d) Outsourcing risk.

31. Which formula explains the following statement - "*As productivity of labour decreases by hiring more workers, cost per unit of production increases*".

(a) MPL=W/MC.

(b) MPL=ΔQ/ΔL.

(c) **APL=W/AVC.**

(d) APL=Q/L.

32. The vertical distance between the AC and AVC curves is _____ and it _____ as Q increases.

(a) Fixed cost; increases.

(b) **Average fixed cost; decreases.**

(c) Average variable cost; stays constant.

(d) Marginal cost; stays constant.

33. Long run average cost is

(a) The same as short run average cost.

(b) Larger than short run average cost because production is higher in the long run.

(c) **The envelope of an infinite number of short run average costs.**

(d) (b) and (c).

34. Which of the following statements is NOT correct about economies of scale?

(a) It occurs due to specialization of inputs.

(b) It may extend due to technological improvement.

(c) It is the increasing returns to scale portion of the long run average cost.

(d) **It increases the cost due to lower productivity.**

35. In microeconomics, the short run is _____ and the long run is ___.

(a) Up to two years; more than two years.

(b) When all inputs are fixed; when all inputs vary.

(c) **When at least one input is fixed; when all inputs vary.**

(d) When all the inputs vary; when all inputs are fixed.

36. The difference between economic profit and accounting profit refers to the ___ of inputs such that economic profit is ___ than accounting profit. This means that in the long run, a perfectly competitive firm has a ___ accounting profit.

(a) Productivity, greater, zero or negative.

(b) Opportunity cost, smaller, zero.

(c) Opportunity cost, greater, zero.

(d) **Opportunity cost, smaller, positive.**

37. In a perfectly competitive market, firms shut down in the short run when

(a) Price does not fully cover average cost.

(b) Price does not fully cover average fixed cost.

(c) **Price does not fully cover average variable cost.**

(d) Marginal revenue is less than marginal cost.

38. What is the long run supply of a firm in a perfectly competitive market?

(a) P = min AC.

(b) P = min AVC.

(c) MC for prices above min AVC.

(d) **MC for prices above min AC.**

39. Which of the following assumptions is not required to have a perfectly elastic demand curve in a perfectly competitive market?

    (a) Large numbers of buyers and sellers.
    (b) Homogenous goods.
    (c) **Perfect information.**
    (d) Price takers.

40. What is marginal revenue for a perfectly competitive firm?

    (a) The profit from selling a unit of the product.
    (b) Total revenue divided by price.
    (c) **The price of the product.**
    (d) The price multiplied by the quantity produced.

41. The price charged by a perfectly competitive firm is

    (a) Higher the more the firm produces.
    (b) Different than the price charged by competing firms.
    (c) **The same as the market price.**
    (d) Lower the more the firm produces.

42. A single-product monopoly has marginal revenue and marginal cost equal to $19 at 15 units of output, where the price on the demand curve is $38. At this output, the average total cost is $15. What is the monopolist's profit?

    (a) $225.
    (b) $570.
    (c) $285.
    (d) **$345.**

43. What does monopolistic competition have in common with monopoly?

    (a) Mutual independence.
    (b) The ability to collude with respect to price.
    (c) **A downward-sloping demand curve.**
    (d) Barriers to entry.

44. When a monopolistically competitive firm's demand curve shifts leftward, what happens to its marginal revenue curve?

    (a) The marginal revenue curve is unchanged.
    (b) **It shifts leftward.**

(c) It shifts rightward.

(d) None of the above is correct.

45. A Nash equilibrium is best described as

(a) Each player taking action that is the best for all the players.

(b) Forming a cartel with strong penalties for cheaters.

(c) Earning zero economic profit in the long run.

(d) **Each player taking the best possible action given the actions of the other players.**

46. Herb's Inc. has a large share of its market and is tempted to collude with the few firms that are in its market. Herb's operates in

(a) A perfectly competitive market.

(b) Collusively protected market.

(c) A monopolistically competitive market.

(d) **An oligopoly.**

47. The major dilemma facing two equally-sized firms that dominate a particular market is the

(a) Fact that neither will respond to the behavior of the other.

(b) **Fact that if each firm separately tries to maximize its profit, it might end up with less profit than otherwise.**

(c) Fact that when they collude to maximize their profit, the other firm's profit might be larger than its profit.

(d) Competition from other firms that drives their economic profit to zero.

48. If a large number of firms is competing, the market could be

(a) Monopolistic competition or monopoly.

(b) Perfect competition or monopoly.

(c) Oligopoly or monopoly.

(d) **Perfect competition or monopolistic competition.**

49. A monopoly creates the deadweight loss because the monopoly

(a) Sets the price that is too low.

(b) **Produces less than the efficient quantity.**

(c) Produces more than the efficient quantity.

(d) Earns a normal profit.

50. When a perfectly competitive industry is taken over by a monopoly, some consumer surplus is transferred to the monopolist in the form of

    (a) Marginal cost.

    (b) Deadweight loss.

    (c) **Economic profit.**

    (d) Average variable cost.

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. The demand for widgets is given by $P = 50 - Q$ and the supply by $P = 2 + Q$.

   (a) Find the equilibrium price and quantity in this market. (4 marks)
   P=26, Q=24.

   (b) Find consumer surplus, producer surplus and the total social welfare.(4 marks)
   Answer: CS= ½ x 24 x (50-26) =288, PS = ½ x 24 x (26-2) =288 TS=576.

   (c) Assume that government wants to help the producers by setting a price floor for this commodity. Can it set a price at \$48 per unit? Why or why not? (4 marks)
   Yes. Positive demand exists at this price.

   (d) Suppose a price floor of \$48 was imposed. At the price floor would there be excess supply or excess demand and by how much. Find out the price paid by the consumer, price received by the producer and the new equilibrium quantity. (4 marks)
   ES= 46-2=44 units. Pc=48, Pp=48, Q=2.

   (e) Find consumer surplus, producer surplus, tax revenue and dead weight loss after the price floor is imposed and graph them. (5 marks)
   CS=2, PS=90, TR=0, TS=92, DWL=576-92=484.

   (f) Find the arc elasticity of demand for a price change from \$10 to \$15. (4 marks)
   -0.33

2. This problem deals with consumer choice. Michelle likes to spend her income, I, on plates of chicken wings (w) and rolls of sushi (s). Each plate of chicken wings costs p_w and each roll of sushi costs p_s.

   (a) Write down Michelle's budget constraint. (4 marks)
   $p_w w + p_s s = I$
   Assume that Michelle's utility function is given by $U = ws$, so that her marginal rate of substitution, defined as $|MRS| = MU_w/MU_s$, is s/w.

   (b) Write down the equation that explains Michelle's optimal consumption decision. (4 marks)
   $s/w = p_w/p_s$
   Assume that $p_w = 4$, $p_s = 4$ and $I = 80$.

   (c) Calculate Michelle's optimal amount of chicken wings and sushi. (5 marks) (Hint: Use the result from part (b) to get s in terms of w and substitute this into the budget constraint in part (a) and solve for w. Use this result to solve for s.)
   $s/w = 4/4$, **so** $s = w$, **then** $4w + 4w = 80$ **and** $w = 10 = s$

   (d) Calculate Michelle's utility at the optimum. (4 marks)
   $U = ws = 10 * 10 = 100$
   Assume that the price of sushi falls so that $p_s = 1$.

(e) Calculate Michelle's new optimal amount of chicken wings and sushi. (4 marks)
$s/w = 4/1$, **so** $s = 4w$, **then** $4w + 1(4w) = 80$, **thus** $w = 10$ **and** $s = 40$

(f) Compare your answers in parts (c) and (e) and briefly explain if wings and sushi are substitutes, complements or unrelated goods. (4 marks) (Note: your answer is based on your answers in parts (c) and (e), not on your belief about the real world.)
The price of sushi fell, but the optimal amount of wings did not change. Therefore, they are unrelated goods.

3. The market for smoothies is perfectly competitive. The table below sets out the market demand schedule.

Price	4.25	8.00	11.75	15.50	21.13	26.75	30.50
Quantity demanded (Qd)	1000	900	800	700	550	400	300

There are 100 identical producers in this market that each has the following costs

Output (q)	MC	AVC	ATC
3	2.50	4.00	7.33
4	2.20	3.53	6.03
5	1.90	3.24	5.24
6	2.00	3.00	4.67
7	2.91	2.91	4.34
8	4.25	3.00	4.25
9	8.00	3.33	4.44

(a) Calculate the total fixed cost (TFC) for each firm? (If you have decimals, round it to the nearest whole number) (3 marks)
AFC = AC – AVC = 7.33 – 4 = 3.33. So, TFC = 3.33 *3 = 9.99. (Please note that depending on which row they choose to calculate, the answer could vary from 9.99 to 10.02)

(b) What is the equilibrium market price of a smoothie? (2 marks)
P = $8

(c) What is the market quantity of smoothie? (2 marks)
Q = 900

(d) At this price, how many smoothies does each firm sell? (2 marks)
q = 9

(e) What is the amount of economic profit/loss made by each firm? Determine whether this amount is a profit or a loss. (4 marks)
P = $8; AC = 4.44; q = 9. Profit = (P – AC)*q = (8 – 4.44)*9 = 32.04 (Economic profit), (profit values from 32 to 32.04 are correct)

(f) What is the shut down price and quantity for each firm? (4 marks)
P = min AVC = 2.91 and q = 7

(g) Where is the breakeven point? (4 marks)

P = min AC = 4.25 and q = 8

(h) Suppose the above ATC applies to both short run and long run, what is the long run price? How many firms, do you expect approximately stay in the market at this price? (4 marks)

P = 4.25, so q = 8 and Qd = 1000, so n = 1000 / 8 = 125 firms.

4. Consider an industry where there are only two firms (duopoly). The industry demand function is given by

$$Q(p) = \frac{200 - p}{3}$$

where p is the price and Q is the total quantity, q_1 and q_2 are the quantities produced by the 2 firms, respectively, and $q_1 + q_2 = Q$. Both firms have the following total cost function

$$TC(q) = 120 + 2q$$

where q is the output of the firm. Assume that the firms are Cournot competitors.

(a) Calculate the inverse demand function $P(Q)$. (6 marks)

The inverse demand function $P(Q)$ is found by inverting $Q(p)$, that is, solving $Q = \frac{200-p}{3}$ for P. This gives $P(Q) = 200 - 3Q$.

(b) Write down the profit of each firm as a function of its output q_1 and the output of the other firm q_2. (6 marks)

Since the firms are symmetric, it is sufficient to consider only firm 1. The profit of firm 1 is equal to the revenue minus the total cost of producing q_1, that is

$$\pi(q_1, q_2) = P(q_1 + q_2)q_1 - TC(q_1) = (200 - 3q_1 - 3q_2)q_1 - (120 + 2q_1)$$

(c) Suppose marginal revenue for firm 1 is given by $MR = 200 - 6q_1 - 3q_2$ and $MC = 2$. Calculate the reaction function of firm 1. What output should firm 1 produce if it expects its rival to produce 20 units? (7 marks)

The reaction function $R(q_2)$ is found by maximizing $\pi(q_1, q_2)$ with respect to q_1, holding q_2 fixed. The optimal choice involves setting the output q_1 at the level where the marginal revenue (MR) is equal to the marginal cost (MC). Solving MR = MC for q_1 yields $q_1 = R(q_2)$, where the reaction function is:

$$R(q_2) = \frac{198 - 3q_2}{6}$$

If firm 2 produces 20 units, it is optimal for firm 1 to produce $R(20) = 23$ units.

(d) Find the Cournot equilibrium. (6 marks)

The Cournot equilibrium output of each firm is found as the solution to $q = R(q)$. This gives $q = 22$.

5. Use the following equations to answer the questions below

$$Demand : Q = 1100 - 5P$$

$$Supply : Q = -100 + P$$

(a) Find the equilibrium price and quantity if there are no imports. (5 marks)

1100-5P = -100+P, so P = 200 and Q = 100

(b) Suppose the world price is 120. If the government imposes an import quota of 600 units in order to protect the domestic producers, under the quota how much is the price in the domestic market? (5 marks)

At P = 120 Quantity supplied by domestic suppliers = 20 Quantity demanded by domestic consumers = 500 Shortage = 480 (=500-20) Given that the shortage is 480 and the quota is 600, the quota is not effective (does not bind). The price in the market thus is still 120

(c) How much is the total quantity traded (including the quota and the quantity produced by the domestic producers)? (5 marks)

The quantity traded in the market is 500.

(d) Suppose the world price is still 120. Assume that the government now imposes an import quota of 300 units. Under the new quota, how much is the price in the domestic market? (5 marks)

S and S' have the same slope, and S' passes through P = 120 and Q = 320. S': P = Q – 200 Solving S' (P = Q – 200) and the original demand curve (P = - 0.2 Q + 220) together yields P = 150 and Q = 350

(e) Continue from part (d). How much is the total quantity traded (including the quota and the quantity produced by the domestic producers)? (5 marks)

Q = 350