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## **ECO 1104B INTRODUCTION TO MICROECONOMICS**

### **MIDTERM EXAMINATION**

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### **INSTRUCTIONS**

- a) The allotted time is one hour and twenty minutes. This examination counts for 25 % of your course grade. It consists of short answer questions and problems, and you should answer all of them. There are a total of 80 points.
- b) You may not consult with any written materials whatsoever, including other students' papers, and no conversation is permitted while the examination is in progress. Furthermore, no palm pilots or programmable calculators are permitted. Any contravention of these rules will be treated as an infraction to the honour code of the university.
- c) You might be pressed for time. I anticipate that some of you will be pressed for time, so please pace yourself according to the point totals that are given for each item.
- d) All of the questions which follow are straightforward, and most can be answered in two sentences. The responses that I hope to elicit have been repeated by me several times in class. Please take a minute to concentrate on the question being asked, as opposed to writing down everything which immediately comes to your mind about a certain topic. I have tried to pose the questions in such a way that you focus correctly.
- e) Write only in the space provided. For most of the questions that follow, you should write in sentences.
- f) Turn off all cellular telephones

**PART A: INTRODUCTORY MATERIAL (14 points)**

1) Any economy, from the most primitive to the most developed, has to face three central coordination tasks. Name them and provide a little bit of description. (3 points)

- **WHAT GOODS AND SERVICES SHOULD BE PRODUCED AND IN WHAT QUANTITIES?**
- **HOW SHOULD THEY BE PRODUCED? THAT REFERS TO THE TECHNIQUE OF PRODUCTION.**
- **FOR WHOM ARE THE GOODS AND SERVICES TO BE PRODUCED? THAT REFERS TO THE DISTRIBUTION OF THE OUTPUT.**

2) Define the term opportunity cost and explain the relationship between scarcity, choices, and opportunity costs. (4 points)

**IT IS THE COST OF HIGHEST FOREGONE ALTERNATIVE - THE OPTION THAT WAS NOT SELECTED. SCARCITY NECESSITATES MAKING CHOICES, AND EVERY TIME THAT A CHOICE IS MADE, AN OPPORTUNITY COST IS INCURRED. TO SAY THAT THERE IS NO SUCH THING AS A FREE GOOD IS TO SAY THAT ALL GOODS AND SERVICES HAVE OPPORTUNITY COSTS (You did not have to make that last point.)**

3) Explain the primary reason why the so-called 'right-wing, free-market' types like the market based, capitalist system. Do not give more than one reason. I will grade this question generously. (3 points)

**IT TENDS TO BE EFFICIENT, WHICH MEANS THAT THERE SELDOM EXISTS SHORTAGES AND SURPLUSES. THE MARKET IS ALSO VERY DYNAMIC AND FLEXIBLE, MEANING THAT IT RESPONDS WELL AND VERY QUICKLY TO CHANGES IN MARKET CONDITIONS. ANOTHER ATTRACTIVE FEATURE IS THAT IT GENERATES INCENTIVES FOR WORKERS AND FIRMS TO WORK HARD, INVEST, AND PRODUCE GOODS AND SERVICES. (you certainly did not have to raise all of these points)**

4) What is the essence of Adam Smith's invisible hand notion? (4 points)

**WHILE IT IS TRUE THAT ALL ECONOMIC AGENTS ARE MOTIVATED BY GREED, THIS GREED CAN BE RE-CHANNELLED SUCH THAT ECONOMIC WELL-BEING IS PROMOTED. PRIVATE GREED MOTIVATES ECONOMIC AGENTS TO BEHAVE IN A FASHION THAT RAISES ECONOMIC WELL-BEING. THE GREED OF ONE INDIVIDUAL OFFSETS THE GREED OF ANOTHER SUCH THAT GREED LEADS TO POSITIVE RESULTS FOR SOCIETY. IT IS THE INVISIBLE HAND THAT REDIRECTS THE GREED SO THAT IT SERVES A GOOD PURPOSE AS OPPOSED TO A BAD PURPOSE.**

**PART B: PRODUCTION AND EXCHANGE (21 points)**

5) Does the model of the production possibilities frontier allow us to predict which combination of the two goods in question will be selected by society? If yes, explain how. If not, then what does it represent? A simple yes or no response will not suffice. (3 points)

**NO – IT REPRESENTS THE SET OF PRODUCTION POSSIBILITIES THAT THE ECONOMY IS CAPABLE OF GENERATING GIVEN THE RESOURCES – LAND, LABOUR, AND CAPITAL – THAT THE ECONOMY HAS AT ITS DISPOSAL. GIVEN THE LEVEL OF PRODUCTION OF ONE GOOD, IT SHOWS US THE MAXIMUM LEVEL OF PRODUCTION OF THE OTHER GOOD THAT CAN BE REACHED. WE DO NOT KNOW WHICH POINT SOCIETY WILL ACTUALLY CHOOSE; WE ONLY KNOW WHAT THE POTENTIAL CHOICES ARE.**

6. These three questions concern the production possibility frontier, also known as the transformation curve (9 points).

a) Explain how a country might be able to expand its production possibilities frontier in the future.

**ALLOCATE A FAIRLY LARGE SHARE OF THE INPUTS – LAND, LABOUR, AND CAPITAL – TO THE PRODUCTION OF CAPITAL GOODS AS OPPOSED TO THE PRODUCTION OF CONSUMPTION GOODS. INVESTMENT SPENDING RAISES THE OUTPUT OF CAPITAL GOODS, WHICH IN TURN RAISES PRODUCTIVITY. THE INVESTMENT CAN BE IN EITHER PHYSICAL OR HUMAN CAPITAL. AN ADVANCE IN TECHNOLOGY WILL HAVE THE SAME IMPACT.**

- b) Assuming that the country is successful in expanding it, what would be the economic significance of that event?

**PRODUCTION POINTS THAT WERE PREVIOUSLY UNATTAINABLE UNDER THE FORMER PRODUCTION POSSIBILITIES FRONTIER BECOME ATTAINABLE UNDER THE NEW ONE. IT USED TO BE IMPOSSIBLE TO CONSUME THOSE COMBINATIONS, BUT NOW IT IS POSSIBLE. WELFARE HAS THUS IMPROVED, AND LIVING STANDARDS ARE HIGHER. THIS CORRESPONDS TO ECONOMIC GROWTH (you did not have to raise that point).**

- c) In the context of the production possibilities frontier, identify and give the significance of the law of increasing opportunity costs.

**AS MORE AND MORE RESOURCES ARE ALLOCATED AWAY FROM THE PRODUCTION OF ONE GOOD TOWARD THE ALLOCATION OF THE OTHER GOOD, THE TRADEOFF BECOMES LESS AND LESS FAVOURABLE. THIS MEANS THAT IN ORDER TO PRODUCE ONE MORE UNIT OF GOOD A, WE HAVE TO GIVE UP MORE AND MORE UNITS OF PRODUCTION OF GOOD B. THIS IS WHAT GIVES THE PRODUCTION POSSIBILITIES FRONTIER ITS CONCAVE SHAPE.**

- 7) This problem is quite similar to one that is in the study guide (only the numbers have been changed). The following table shows the units of output a worker can produce per month in Australia and Korea. (9 points)

	<u>Food</u>	<u>Electronics</u>
Australia	16	4
Korea	10	5

- a) Australia has the comparative advantage in the production of food. Demonstrate why that is the case. It necessarily follows that Korea has the comparative advantage in the production of electronics.

**THERE ARE SEVERAL WAYS TO DO THIS PROBLEM. FIRST, AUSTRALIA IS FOUR TIMES MORE EFFICIENT IN MAKING FOOD COMPARED TO MAKING ELECTRONICS (20/5), WHILE KOREA IS ONLY TWICE AS EFFICIENT IN THE PRODUCTION OF FOOD RELATIVE TO THE PRODUCTION OF ELECTRONICS (8/4). SECOND, FOR AUSTRALIA, THE OPPORTUNITY COST OF OBTAINING ONE MORE UNIT OF FOOD IS 0.25 ELECTRONICS (5/20), WHILE FOR KOREA IT IS 0.5 ELECTRONICS (4/8). AUSTRALIA HAS A LOWER OPPORTUNITY COST OF INCREASING FOOD PRODUCTION, SO IT HAS THE COMPARATIVE ADVANTAGE IN FOOD. THIRD, FOR AUSTRALIA, THE OPPORTUNITY COST OF OBTAINING ONE MORE UNIT OF ELECTRONICS IS 4 FOOD UNITS (20/5), WHILE FOR KOREA IT IS 2 FOOD UNITS (8/4). KOREA HAS A LOWER OPPORTUNITY COST OF INCREASING ELECTRONIC PRODUCTION, SO IT**

## **HAS THE COMPARATIVE ADVANTAGE IN ELECTRONICS.**

b) Whether or not you have demonstrated that result above, explain what the countries should do next.

**AUSTRALIA SHOULD SPECIALIZE IN THE PRODUCTION OF FOOD AND EXPORT IT, WHILE KOREA SHOULD SPECIALIZE IN THE PRODUCTION OF ELECTRONICS AND EXPORT IT. AUSTRALIA WILL THEN IMPORT ELECTRONICS, AND KOREA WILL IMPORT FOOD.**

c) According to the theory of trade, why are countries better off trading than they would be in the state of autarky? You should mention the transformation curve in your analysis.

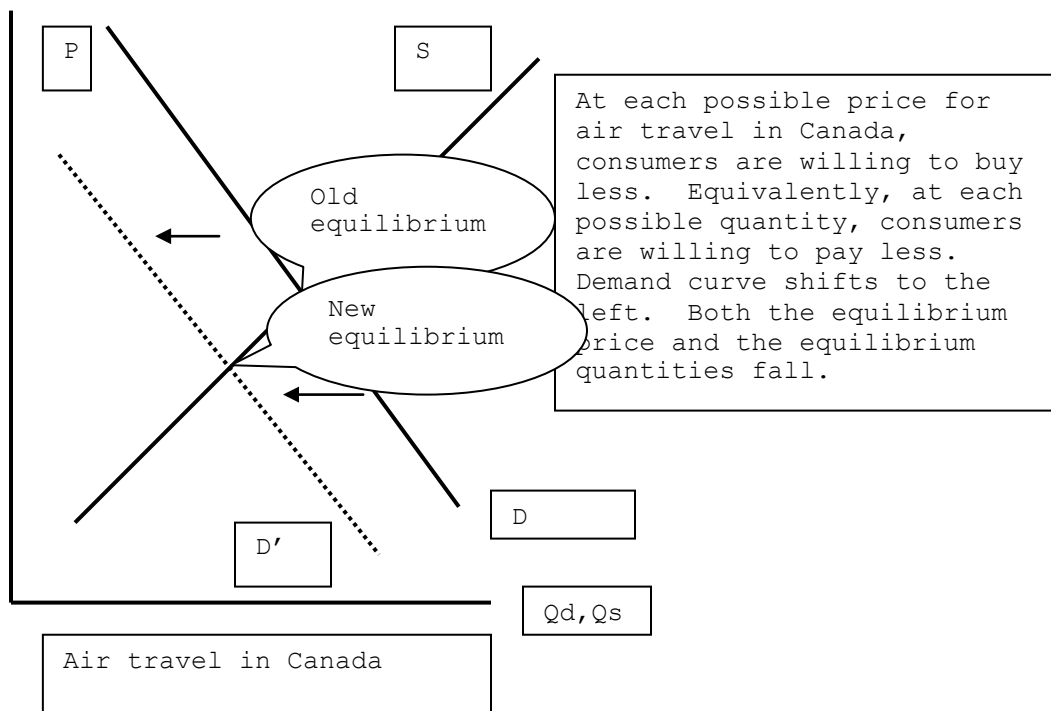
**IT ALLOWS ECONOMIES TO CONSUME COMBINATIONS OF GOODS THAT ARE UNOBTAINABLE IN AUTARKY, WHICH IS THE STATE OF THE ABSENCE OF TRADE. AFTER SPECIALIZATION AND TRADE, THE CONSUMPTION POINT LIES BEYOND THE PRODUCTION POSSIBILITIES FRONTIER, AND THUS REPRESENTS A POINT THAT WOULD BE UNATTAINABLE IN THE ABSENCE OF TRADE. THE SOURCE OF THE GAINS FROM TRADE IS THE FACT THAT THE TRADEOFF BETWEEN FOOD PRODUCTION AND ELECTRONICS PRODUCTION IS MORE FAVOURABLE UNDER FREE TRADE THAN IT IS UNDER AUTARCHY.**

d) Which country has the absolute advantage in the production of electronics? Why? What is the economic interpretation of that fact?

**KOREA, AS GIVEN THE LEVEL OF LABOUR INPUT, IT CAN PRODUCE 25 % MORE OF THAT GOOD. AS FAR AS THE PRODUCTION OF ELECTRONICS IS CONCERNED, KOREA IS RICHER (PROVIDED THAT BOTH COUNTRIES HAVE THE SAME LEVEL OF LABOUR INPUT).**

## **PART C: SUPPLY AND DEMAND AND APPLICATIONS (30 points)**

8) We have recently witnessed the phenomenon of Canadian residents travelling across the border to airports in the USA in order to fly to their destination. They are deserting Canadian airports, such as the one in Vancouver, in droves because the airfares (and particularly the service charges) are cheaper. Consider the market for air travel in or out of Canadian airports. Analyse this event using supply and demand analysis. Use the axes below. Label all curves, axes, and points of interest. Explain any shifts (or lack thereof) using words. (8 points)



**AIR TRAVEL IN AND OUT OF THOSE NEARBY AIRPORTS IN THE USA ARE SUBSTITUTES FOR FLIGHTS IN AND OUT OF AIRPORTS ON THE CANADIAN SIDE. THE SERVICES OFFERED IN US AIRPORTS ARE RELATIVELY CHEAP. AS THE PRICE OF A SUBSTITUTE GOOD DECREASES, THE DEMAND FOR THE CANADIAN SERVICES DECREASES. THIS QUESTION IS QUITE TOPICAL.**

9. I posted a recent article from the economics/business press on the courseweb that deals with the illegal importation of cheese from the USA into Canada near the Niagara Falls border. I hope that you read it, as I bade you to (8 points).

- a) Consider the market for pizza prepared at restaurants or fast-food outlets in the Niagara area of Ontario. While the contraband activity is occurring, what impact would we expect this smuggling activity to have in this market? Does either curve shift? If so, why? If there is a change in the equilibrium price or quantity, describe them. You do not need to give any graph, but explain any changes that might occur in words.

**THE PRICE OF CHEESE, WHICH IS A KEY AND EXPENSIVE INGREDIENT IN THE PRODUCTION PIZZA, FALLS. THIS REDUCES THE COSTS OF PRODUCTION. THIS CAUSES THE SUPPLY OF PIZZA TO SHIFT TO THE RIGHT, WHICH IN TURN CAUSES THE EQUILIBRIUM PRICE TO FALL AND THE EQUILIBRIUM QUANTITY OF PIZZA TO RISE.**

- b) In class I said that this is a magnificent illustration of one of the basic principles that are set out in the textbook. Is it a) people face tradeoffs, b) the cost of something is what you give up to get it, c) rational people think at the margin, d) people respond to incentives, or e) trade can make everyone better off? Explain why in the context of this particular application.

**D) PEOPLE RESPOND TO INCENTIVES. THE CHEESE MADE IN THE USA AND THE CHEESE MADE IN CANADA ARE SUBSTITUTES, AND THE US-MADE CHEESE IS A LOT CHEAPER. IT IS POSSIBLE TO MAKE A LOT OF MONEY BY BUYING CHEESE IN THE USA AND RE-SELLING IT IN CANADA AT A PRICE THAT IS HIGHER THAN THE US PRICE BUT LOWER THAN THE GOING CANADIAN PRICE.**

- 10) One of the themes of chapter 6 was that all of the various interventions that the government employs in order to alter the equilibrium price (in hopes of making it more 'fair') are ineffective and inefficient in achieving that objective. Explain the underlying cause of that result (I went over this in class very thoroughly.) (6 points)

**TAMPERING WITH PRICES DISTORTS THE CHOICES OF BOTH SUPPLIERS AND DEMANDERS. BOTH SIDES OF THE MARKET REACT TO PRICE CHANGES BY ALTERING THEIR BEHAVIOUR, AND THEY DO SO IN A WAY THAT WORKS AGAINST THE INITIAL OBJECTIVE OF MAKING ONE PARTY BETTER OFF. MARKET IMBALANCES IN THE FORM OF SURPLUSES OR SHORTAGES ALWAYS ARISE. TRYING TO DEFY THE NATURAL FORCES OF SUPPLY AND DEMAND ALWAYS HAS UNINTENDED – BUT PREDICTABLE - CONSEQUENCES.**

- 11) Consider the market for cinder blocks. The values for the supply and demand schedules are given below. (8 points)

Price per unit (\$)	Quantity demanded (per year)	Quantity supplied (per year)
2.00	50,000	200,000
1.50	70,000	160,000
1.00	100,000	100,000
0.75	150,000	50,000
0.50	250,000	0

- a) What is the free-market equilibrium for price and quantity? Explain your response.

**\$1.00, WHERE QUANTITY DEMANDED = QUANTITY SUPPLIED. THE MARKET IS IN BLANACE. (I do not consider this to be a challenging question.).**

- b) Suppose that the government imposes a price ceiling of \$ 0.75 in order to protect consumers from being 'ripped off by greedy companies'. What would we expect to happen in the short-run? What would we expect to happen in the long-run?

**IN THE SHORT RUN, THERE WILL BE AN EXCESS QUANTITY DEMANDED OF**

**100,000 UNITS. IN THE LONGER RUN, THERE WILL BE UPWARD PRESSURE ON PRICES, AND THE TRANSACTIONS PRICE WILL EVENTUALLY RISE TO \$1.00. THE MARKET IMBALANCE WILL THEN BE CLEARED.**

- c) Suppose that in response to lobbying by the industry (so that the producers can earn a ‘decent living’ and so that Canadians will have a ‘safe and reliable domestic supplier’), the government imposes a higher price floor of \$ 2.00 per block. What would we expect to happen in the short-run? What would we expect to happen in the long-run?

**IN THE SHORT RUN, THERE WILL BE AN EXCESS QUANTITY SUPPLIED OF 150,000 UNITS. IN THE LONGER RUN, THERE WILL BE DOWNWARD PRESSURE ON PRICES, AND THE TRANSACTIONS PRICE WILL EVENTUALLY FALL TO \$1.00. THE MARKET IMBALANCE WILL THEN BE CLEARED.**

**PART D: ELASTICITY AND THE THEORY OF DEMAND (15 points)**

- 12) Identify and give the significance of the price elasticity of demand. In other words, what is its purpose? In still other words, why do we bother studying it? Do not give details concerning the price elasticity of demand. What I am looking for here is a brief discussion of how it fits in with supply and analysis. (3 points)

***IT IS A MEASURE OF THE RESPONSIVENESS OF CONSUMERS TO CHANGES IN PRICE. WE KNOW THAT THERE IS A NEGATIVE RELATIONSHIP BETWEEN PRICE AND QUANTITY DEMANDED FROM THE LAW OF DEMAND. WHAT ELASTICITY TELLS US IS BY HOW MUCH QUANTITY DEMANDED CHANGES IN RESPONSE TO A CHANGE IN PRICE.***

- 13) What is the relationship between the price elasticity of demand and ii) the availability of substitute goods that are available to the consumer and ii) the importance of expenditures on that good in consumers’ budgets? (4 points)

**i) THE GREATER THE AVAILABILITY OF SUBSTITUTES, THE HIGHER THE ELASTICITY. WHEN CONSUMERS HAVE CHOICES, THEY WILL RESPOND TO PRICE CHANGES.**

**ii) THE MORE IMPORTANT THE EXPENDITURES AS A SHARE OF THE CONSUMER’S BUDGET, THE HIGHER THE ELASTICITY BECAUSE CONSUMERS NOTICE THE PRICE CHANGES MORE THAN WHAT WOULD OTHERWISE BE THE CASE. THEY FEEL THE IMPACT OF THE CHANGE MORE.**

14) Consider the following demand schedule for bulletin boards (8 points):

price (\$ per unit)	Quantity demanded (units per year)
35	800
30	1,000
25	1,200
20	1,300

- a) Calculate the price elasticity of demand between the prices of \$ 35 and \$ 30. Is this elastic or inelastic demand? Show your work.

**EMPLOYING THE MIDPOINT FORMULA, PED = % CHANGE Qd / % CHANGE P  
= ( + 200 / 1,800) / (-5 / 65) = 1.44 (Note that the factor of 2 cancels out)  
IT IS ELASTIC AS IT IS GREATER THAN UNITY.**

- b) Calculate the gain or loss in total revenue as the price is lowered from \$ 35 to \$ 30. Based on this approach, is this elastic or inelastic demand?

**TOTAL REVENUE RISES FROM \$ 28,000 TO \$ 30,000 AS THE PRICE IS LOWERED. GIVEN THIS INVERSE RELATIONSHIP BETWEEN PRICE AND TOTAL REVENUE, IT MUST BE THE CASE THAT THE DEMAND IS PRICE ELASTIC. THIS IS CONSISTENT WITH THE RESPONSE IN PART A).**

- c) What can we say about the equilibrium quantity that will prevail in this market?

**NOTHING – WE WOULD NEED TO HAVE INFORMATION ON THE SUPPLY SIDE**