Model Answer for Econ 201

Concordia University
Department of Economics
ECON 201 Section F
Fall 2013-2014
Midterm Exam

Instructor: Mesbah F.Sharaf

Name: _____

Student ID: _____ **October 16, 2013**

Mark: _____/100 marks **Time Limit: 75 minutes**

Part I. Multiple Choice Questions. Circle the best answers (30 marks).

1) Which of the following statements is (are) normative?
   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.

2) If goods J and K are Complements, an increase in the price of J causes:
   (a) Quantity demanded of J to fall and the demand curve for K to shift to the left.
   b) A decrease in quantity demanded for J and a rightward shift of K's demand curve.
   c) Quantity demanded of J remains constant, but the demand for K decreases.
   d) The demand curve for both J and K shift to the left.

3) If quantity demanded increases from 1,000 to 1,080 units when Income rise by 4 percent, using the initial quantity as base, this good could be classified as:
   (a) Normal and luxury
   b) Inferior.
   c) Normal and Necessity
   d) Cannot be determined from the information provided.

4) If quantity demanded of good X increases from 1,000 to 1,100 units when the price of good Y rises by 5 percent, using the initial quantity as base, the cross elasticity of demand is___ and the two goods are considered ___ .
   (a) -2 , complements
   b) 2 , substitutes.
   c) -0.5 , complements
   d) 0.5 , substitutes.

5) A simultaneous decrease in both demand and supply will lead to
   a) A certain decrease in Q.
   b) The change in Q is undetermined
   c) The change in P is undetermined
   d) A certain decrease in P.
   (e) Both A and C are correct

6) Setting a price ceiling above the equilibrium price will cause:
   a) Producer surplus to fall.
   b) No effect on Price and Quantity.
   c) Quantity supplied to exceed quantity demanded.
   d) Quantity demanded to increase.
   e) Both a and c are correct

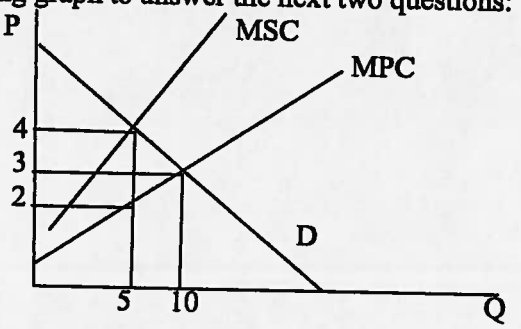
7) Using a supply and demand diagram of your own, if a per unit tax is imposed, the more elastic the Demand curve, the:

   a) Smaller the deadweight loss and the larger the consumer burden.
   b) larger the deadweight loss and the larger the consumer burden
   c) Larger the deadweight loss and the smaller the consumer burden.
   d) Smaller the deadweight loss and the smaller the consumer burden.

8) Goods A and B are complementary goods (in consumption). The cost of a resource used in the production of A decreases. As a result,

   a) The equilibrium price of A and B will fall.
   b) The equilibrium price of B will rise and the equilibrium price of A will fall.
   c) The equilibrium prices of both A and B will rise.
   d) The equilibrium prices of both A and B will fall.
   e) The equilibrium price of B will fall by more than the rise in the equilibrium price of A.

Refer to the following graph to answer the next two questions:



9) Which of the following statements are correct?

   a) The unregulated P=3 & unregulated Q=10
   b) The regulated P=4 & regulated Q=5
   c) There is a negative externality
   d) All of the above
   e) None of the above

10) To achieve allocative efficiency, the government should use a _____which creates a _____

   a) Subsidy of 2 $ per unit, welfare gain of 5 $
   b) Tax of 2 $ per unit, welfare gain of 5 $
   c) Subsidy of 2 $ per unit, deadweight loss of 5 $
   d) Tax of 2 $ per unit, deadweight loss of 5 $

Part II: Answer all parts (Total= 70 marks)

Question 1 (20 marks)

The following are hypothetical production possibilities tables for Canada and the Mexico.

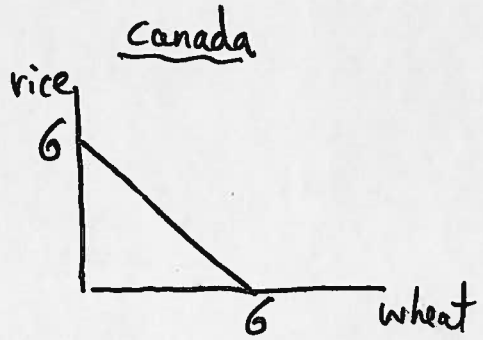
Canada's Production Possibilities Table
(Millions of bushels)

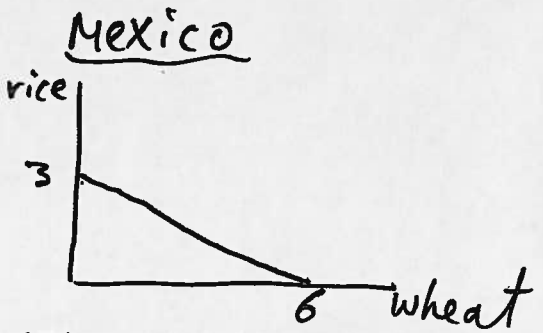
	A	B	C	D
Rice	0	2	4	6
wheat	6	4	2	0

Mexico's Production Possibilities Table
(Millions of bushels)

	A	B	C	D
Rice	0	1	2	3
wheat	6	4	2	0

a) Plot Canada's and Mexico's production possibilities curve by plotting at least 2 points on each curve. Put rice on the vertical axis and wheat on the horizontal axis. (5 marks)





b) What is each country's opportunity cost of producing Rice and Wheat? And which nation should specialize in which product? And why? (7.5 marks)

opp. cost of 1 extra wheat $= -\frac{\Delta \text{rice}}{\Delta \text{wheat}}$

Canada: $= \frac{-6}{6} = -1$ rice

Mexico: $= \frac{-3}{6} = -\frac{1}{2}$ rice

opp. cost of 1 extra rice $= -\frac{\Delta \text{wheat}}{\Delta \text{rice}}$

Canada: $= -1$ wheat

Mexico: $= \frac{-2}{1} = -2$ wheat

Mexico → specialize in producing wheat because it produces wheat with Lower opp. cost. "it has a comparative advantage in wheat"

Canada → specialize in producing rice

c) Suppose that the optimum product mixes before specialization and trade were **B** in Canada and **D** in Mexico. What are the gains from specialization and trade if you know that the terms of trade are 1 bushels of rice for 1 bushels of Wheat? And draw the new Production possibility curves after specialization(7.5 marks)

world production
- before trade & specialization: 5 rice + 4 wheat
- After trade & specialization: 6 rice + 6 wheat

gains from specialization = 1 rice + 2 wheat

Question 2 (20 marks)

Suppose you are an economist working on how to price the ice hockey game tickets. You estimated the demand and supply of the tickets based on past sales to be

Total Market Demand: P=600-Qd Supply: P=Qs-100

(i) Find the total revenue from selling the tickets at a single price to the whole market. Also calculate the elasticity of demand at the equilibrium price and quantity. (5 marks)

$Q_d = Q_s \rightsquigarrow$ eq^m condition

$600 - Q = Q - 100 \rightsquigarrow$ **$Q = 350$**, **$P = 250$**, **$TR = P * Q = 87,500$**

$$\varepsilon_d = \frac{\Delta Q}{\Delta P} * \frac{P}{Q} = -1 * \frac{250}{350} = \boxed{-0.714}$$

Now suppose you believe that you can separate your potential consumers into two types: type 1 and type 2. Their demand functions are as follows:

Type 1 Demand: $P = 2250 - 5Q_1$ (slope $= \frac{\Delta P}{\Delta Q} = -5$)
Supply: $P = 50 + Q$

Type 2 Demand: $P = 187.5 - 1.25Q_2$ (slope $= \frac{\Delta P}{\Delta Q} = -1.25$)
Supply: $P = 50 + Q$

Notice that $Q_d = Q_1 + Q_2$.

(ii) Find the equilibrium price and quantity for each type and calculate total revenue from both types together. Which of the two demand curves is more elastic and why? (7.5 marks)

type 1

$2250 - 5Q_1 = 50 + Q$

$Q = 366.66$, $P = 416.66$

$TR_1 = 152,772.6$

slope $= -5$ "big slope" steep inelastic

type 2

$187.5 - 1.25Q_2 = 50 + Q$

$Q = 62.5$, $P = 112.5$

$TR_2 = 7031.25$

slope $= -1.25$ "smaller slope" Flat elastic

total Rev $= 159,803.9$

(iii) Consider your total revenue in (i) and (ii): Explain intuitively why your revenue is now higher/lower than the revenue you have found in (i). Relate your argument to elasticities. What are the conditions that should be satisfied for the pricing policy in (ii) to be successful (7.5 marks)

by charging a high price for type 1 "their $D_{inelastic}$" & a low price for type 2 "$D_{elastic}$" the producer will be making more TR

This is known as price discrimination.

for price discrimination to be successful the following conditions should be satisfie

1) resale is not possible

2) different elasticity of demand.

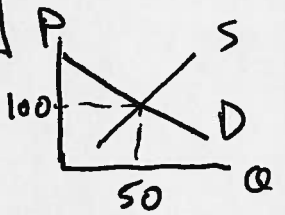
Question 3 (30 marks)

As an economist in the Department of Agriculture you have estimated the demand to be Qd =150 - P and supply to be Qs =P-50 for the Apples. You have been asked to evaluate three policy choices. Quantities are in tons.

a) Suppose there are no interventions. Find the equilibrium P and Q. Also find the total revenue (TR) of the farmers. (5 marks)

eq^m cond^n $Q_d = Q_s \rightsquigarrow 150 - P = P - 50 \rightsquigarrow \boxed{P = 100}$ $\boxed{Q = 50}$

$TR = P * Q = 5000$

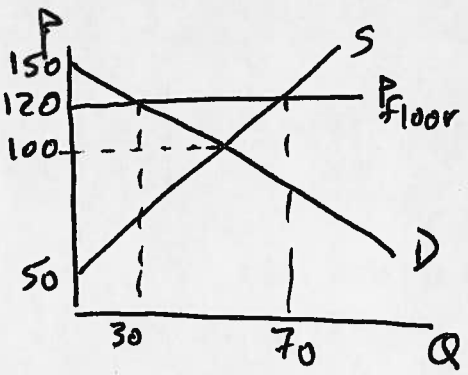


b) Option 1: Price floor=$120, the government buys up any excess supply. (10 marks)
Find Qd, Qs, consumer and producer surplus, TR of the farmers, the cost to the government and the deadweight loss.

$Q_d = 30$ $Q_s = 70$ $\frac{1}{2} * 30 * 30 = 450$ $\frac{1}{2} * 70 * 70 = 2450$ $P * Q = 8400$

Cost to Gov $= 40 * 120 = 4800$

DWL $= (40 * 120) - \frac{1}{2} * 40 * 20 = 4400$



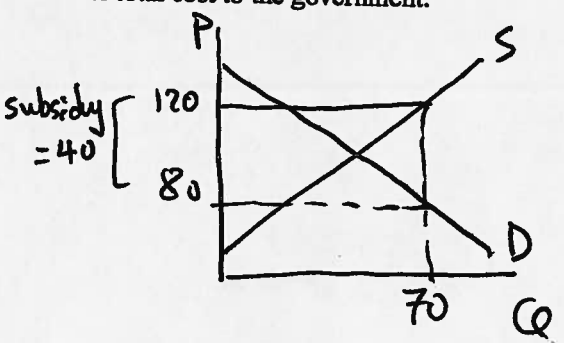
c) Option 2: Production subsidy
Find the amount of the production subsidy per unit required such that the TR of farmers is the same as under the price floor. Also find the price the consumers pay per unit and the total cost to the government. (7.5 marks)

Consumer pays 80

Gov pays 40

Subsidy = 40

Cost to Gov $= 40 * 70 = 2800$



d) Option 3: Quota=30
Find the corresponding consumer price and the total revenue of the farmers at this quantity supplied. Also calculate the deadweight loss resulting from this policy (7.5 marks)

Consumer pays 120

Farmer's $TR = 120 * 30 = 3600$

DWL $= \frac{1}{2} * 20 * 40 = 400$ $