ECO201: PRINCIPLES OF MICROECONOMICS

FIRST MIDTERM EXAMINATION

Prof. Bill Even

October 14, 2008

FORM 1

Directions

1. Fill in your scantron with your unique-id and the form number listed on this page. Proper completion of this step of the directions is worth the equivalent of one question.

2. There are 41 multiple choice questions. All answers should be recorded on the scantron sheet. No credit will be given for answers placed elsewhere. Record your answers on the exam as well because this will be the record of your answers which you can use to determine which questions you got right or wrong on the exam.

3. A calculator is allowed. Cell phones may not be used for calculators.

4. You have until 10:50 to finish the exam and complete the scantron. Additional time may be purchased at a price of 5 percentage points per minute.
To answer the next 5 questions, suppose there is a small island economy with 30 Russians and 20 Czechs. In a given day, a Russian can catch either 10 fish or gather 50 coconuts. A Czech can catch either 5 fish or 40 coconuts.

1) The absolute advantage in fishing is held by the ______ and the absolute advantage in coconuts is held by the ______.
   a. Russians; Russians.
   b. Russians; Czechs.
   c. Czechs; Czechs.
   d. Czechs; Russians.

2) The comparative advantage in fishing is held by the ______ and the comparative advantage in coconuts is held by the ______.
   a. Russians; Russians.
   b. Russians; Czechs.
   c. Czechs; Czechs.
   d. Czechs; Russians.

3) If the economy produces 320 fish per day, what is the maximum number of coconuts it can produce in a day?
   a. 400
   b. 520
   c. 640
   d. none of the above

4. Suppose the economy is operating on its production possibilities frontier and producing 320 fish per day. If it increases production of fish production by 10, the opportunity cost of the extra 10 fish will be _____ coconuts.
   a. 40
   b. 50
   c. 80
   d. none of the above.

5) If the economy is organized efficiently, the opportunity cost of an additional fish is
   a. 5 coconuts until fish production reaches 300, at which point the opportunity cost rises to 8 coconuts.
   b. 5 coconuts until fish production reaches 100, at which point the opportunity cost rises to 8 coconuts.
   c. .20 coconuts until fish production reaches 300, at which point the opportunity cost falls to .125 coconuts.
   d. .125 coconuts until fish production reaches 100, at which point the opportunity cost rises to .20 coconuts.
6) If an economy achieves productive efficiency, we know that:
   a. the economy is producing on its PPF.
   b. the economy is producing outside its PPF.
   c. the economy has no deadweight loss
   d. the economy is maximizing consumer surplus

7) Economic growth occurs when:
   a. the PPF shifts outward.
   b. the economy acquires better technology.
   c. the economy acquires more capital.
   d. all of the above.

8) Over the past year, the average price of gasoline rose $.71 per gallon. Suppose this has caused a decrease in the equilibrium price and quantity of type A cars but an increase in the equilibrium price and quantity of type B cars. This would suggest that
   a. gasoline and type A cars are substitutes in consumption, but gasoline and type B cars are complements in consumption.
   b. gasoline and type A cars are complements in consumption, but gasoline and type B cars are substitutes in consumption.
   c. gasoline and type A cars are substitutes in production, but gasoline and type B cars are complements in production.
   d. gasoline and type A cars are complements in production, but gasoline and type B cars are complements in production.

9) Which of the following statements is true?
   a. a price ceiling above the equilibrium price causes a shortage.
   b. a price ceiling below the equilibrium price causes a surplus.
   c. a price floor above the equilibrium price causes a shortage.
   d. none of the above.

10) Whenever farmers raise cattle, fertilizer is created from the waste. Because of this relationship, an increase in the demand for cattle should cause:
    a. an increase in the supply of fertilizer and lower fertilizer prices.
    b. a decrease in the supply of fertilizer and higher fertilizer prices.
    c. an increase in the demand for fertilizer and higher fertilizer prices.
    d. a decrease in the demand for fertilizer and lower fertilizer prices.

11) Suppose that over the next year, the equilibrium price of chicken wings falls and the equilibrium quantity of chicken wings rise. These two simultaneous events could be explained by:
    a. an increase in consumer income if chicken wings are a normal good.
    b. an increase in consumer income if chicken wings are an inferior good.
    c. an increase in the demand for a complement in production to chicken wings.
    d. an increase in the demand for a substitute in production for chicken wings.
12) A recent study estimates that the price elasticity of demand for airline tickets is 2.4. Based on this information, if the airline industry increases ticket prices by 15%, the number of tickets sold would decrease by:
   a. 36 percent
   b. 6.25 percent
   c. 12.6 percent
   d. 17.4 percent

13) If the demand curve for a product is linear, the price elasticity of demand will be:
   a. the same at every price
   b. elastic at prices corresponding to points below the midpoint of the demand curve, and inelastic at prices above the midpoint.
   c. inelastic at prices corresponding to points below the midpoint of the demand curve, and elastic at prices above the midpoint.
   d. elastic if the slope of the demand curve is less than -1 and inelastic if the slope of the demand curve is greater than -1.

14) If a firm raises its price, total revenue will:
   a. always rise.
   b. rise only if demand is inelastic.
   c. rise only if demand is elastic.
   d. rise only if demand is unit elastic.

15) If the price elasticity of demand for cigarettes is .7, a 5 percent decrease in the price of cigarettes would cause:
   a. the total revenue generated from cigarette sales to increase by approximately 1.5 percent
   b. the total revenue generated from cigarette sales to drop by approximately 1.5 percent
   c. the total revenue generate from cigarette sales to drop by approximately 8.5 percent.
   d. the total revenue generate from cigarette sales to increase by approximately 8.5 percent.

16) Average income per capita is $44,710 in the U.S. and $7,870 in Mexico. This should imply that:
   a. the price elasticity of demand for a product like Coca-Cola will be more smaller in the U.S. than in Mexico.
   b. the price elasticity of demand for a product like Coca-Cola will be more larger in the U.S. than in Mexico.
   c. the supply for a product like Coca-Cola will be more inelastic in the U.S. than in Mexico.
   d. the supply for a product like Coca-Cola will be more elastic in the U.S. than in Mexico.
17) If lettuce and cabbage are substitutes in consumption, then we should predict that:
   a. they have a positive cross price elasticity of demand.
   b. they have a negative cross price elasticity of demand.
   c. they both have a positive income elasticity of demand.
   d. they both have a negative income elasticity of demand.

18) It is much cheaper to store canned beans than fresh beans. As a consequence, we should expect that, compared to canned beans, supply for fresh beans is:
   a. more elastic and a change in demand will have a greater effect on price.
   b. more inelastic and a change in demand will have a greater effect on price.
   c. more elastic and a change in demand will have a smaller effect on price.
   d. more inelastic and a change in demand will have a smaller effect on price.

19) Consumers surplus is defined as:
   a. the total amount that consumers are willing to pay for a good.
   b. the total amount that consumers are willing to pay for a good minus the amount they actually pay for the good.
   c. the marginal benefit of a good minus its marginal cost.
   d. the price of a good minus its marginal cost.
To answer the next 3 questions, consider the following hypothetical supply and demand curves for apples

<table>
<thead>
<tr>
<th>Price per apple (in $)</th>
<th>millions of apples per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>$.10</td>
<td>30</td>
</tr>
<tr>
<td>$.14</td>
<td>60</td>
</tr>
<tr>
<td>$.16</td>
<td>90</td>
</tr>
<tr>
<td>$.18</td>
<td>120</td>
</tr>
<tr>
<td>$.20</td>
<td>60</td>
</tr>
<tr>
<td>$.22</td>
<td>90</td>
</tr>
<tr>
<td>$.24</td>
<td>120</td>
</tr>
</tbody>
</table>

20) What is the elasticity of demand for apples over the price range of $.18 to $.20 per apple?
   a. 0.11
   b. 0.26
   c. 3.80
   d. 5.72

21) At the equilibrium price, what is the value of consumer’s surplus?
   a. $2.7 million
   b. $4.2 million
   c. $5.4 million
   d. $5.8 million

22) At the equilibrium price, what is the value of producer’s surplus?
   a. $2.7 million
   b. $3.6 million
   c. $5.4 million
   d. $5.8 million

23) Suppose that a seller lists a Beatles CD for sale on e-bay. The seller is willing to sell the CD for anything above $1. The buyer who ends up with the CD is willing to pay as much as $8, but ends up paying $4 for the CD. Based on this, we can conclude that:
   a. consumer’s surplus on the CD sale is $4
   b. producer’s surplus on the CD sale is $3
   c. assuming the sale is still made, if the final price negotiated rises by $1, the sum of consumer and producer surplus is unchanged.
d. all of the above.

24) Assuming no externalities, which of the following statements would be FALSE?
   a. marginal benefit increases as the quantity of the good consumed increases.
   b. marginal benefit is the benefit a person receives from consuming one more unit of the good.
   c. marginal benefit is equal to marginal cost if allocative efficiency is obtained.
   d. marginal cost increases as the quantity of the good produced increases.

25) Suppose that whenever a firm produces electricity with a coal powered generator, pollutants are emitted that add to global warming. If government does not intervene in the market for coal-powered electricity, we should expect to find that at the market outcome
   a. SMB≈SMC and the market will produce more than the allocatively efficient amount of electricity.
   b. SMC>≈SMB and the market will produce more than the allocatively efficient amount of electricity.
   c. PMB>≈PMB and the market will produce less than the allocatively efficient amount of electricity.
   d. PMC>≈PMB and the market will produce more than the allocatively efficient amount of electricity.
   (Note: SMB=social marginal benefit; SMC=social marginal cost; PMB=private marginal benefit; PMC=private marginal cost).

26) The allocatively efficient amount of a commodity is the quantity where ______ and a competitive market will produce the quantity where ________
   a. PMC=SMC; PMB=SMB.
   b. SMB=SMC; PMB=PMC
   c. PMB=SMB; PMC=SMC
   d. PMB=PMC; SMB=SMC
   (Note: SMB=social marginal benefit; SMC=social marginal cost; PMB=private marginal benefit; PMC=private marginal cost).

27) In a competitive market, the demand curve is always the same as _____ and the supply curve is always the same as ______.
   a. private marginal cost; private marginal benefit.
   b. private marginal benefit; private marginal cost.
   c. social marginal cost; social marginal benefit.
   d. social marginal benefit; social marginal cost.
28) If the government wants to achieve allocative efficiency in markets, which of the following types of commodities would be best to subsidize?
   a. vaccinations for contagious diseases because it helps prevent others from getting disease.
   b. airport construction given the noise pollution that it generates for those near the airport.
   c. oil exploration because of the high price of oil
   d. food because it is a necessity for anyone to live.

   To answer the next two questions, refer to the diagram below describing the market for gadgets.

29) Based on the diagram above, the market equilibrium would generate (more, less) than the socially efficient amount to be produced and a deadweight loss of _____.
   a. more; $1000
   b. less; $1000
   c. less; $500
   d. more; $500

30) The market could be moved to the socially efficient outcome with a (subsidy, tax) of ____.
   a. subsidy; $20
   b. subsidy; $10
   c. tax; $10
   d. tax; $20
Suppose there are no positive or negative externalities associated with gasoline and the government imposes a price ceiling at $2.50 per gallon.

31) This price ceiling will result in:
a. a surplus of 50 million gallons per day
b. a shortage of 50 million gallons per day.
c. a surplus of 25 million gallons per day.
d. a shortage of 25 million gallons per day.

32) Compared to the equilibrium price of $2.75 per minute, with the $2.50 price ceiling consumers would be
a. better off by $15.625 million
b. better off by $18.750 million
c. worse off by $18.750 million
d. worse off by $15.625 million

33) Compared to the equilibrium price of $2.75 per gallon, with the $2.50 price ceiling producers would be
a. worse off by $18.750 million
b. worse off by $25.0 million
c. worse off by $21.875 million
d. better off by $18.750 million

34) With the price ceiling of $2.50 per gallon, there would be a deadweight loss of
a. $3.125 million
b. $4.375 million
c. $5.275 million
d. $6.250 million.
Suppose that initially there is no tax on imported steel, but the government introduces a new tax and the supply curve is shifted from S0 to S1 in the diagram below.

**NOTE THAT QUANTITY IS MEASURED IN MILLIONS.**

35) How much tax revenue would be generated by this tax?
   a. $500 million.
   b. $1.0 billion.
   c. $2.0 billion.
   d. $4.0 billion.

36) This tax would make steel buyers worse off by:
   a. $0
   b. $1.25 billion
   c. $2.50 billion.
   d. $3.00 billion.

37) The consumers’ share of this tax is _____ and the producers’ share is _____.
   a. $5; $5.
   b. $10; $10.
   c. $20; 0.
   d. $0; $20.
38) Since passage of the Agricultural Adjustment Act of 1993, only farmers who own or lease a production quota are legally allowed to grow peanuts for human consumption in the U.S. Based upon our analysis of how quotas work, **elimination of the peanut quota** would cause:
   a. peanut consumers in the U.S. to definitely be worse off
   b. peanut producers to definitely be worse off.
   c. a reduction in the deadweight loss associated with peanut production.
   d. all of the above.

39) Currently, Ohio imposes a tax of $1.25 per pack on cigarettes. If Ohio doubles the tax on cigarettes to $2.50 per pack, the total tax revenue from cigarettes
   a. would double.
   b. would less than double unless demand is perfectly inelastic.
   c. could increase or decrease if demand is elastic.
   d. both b and c.

40) Suppose that Ohio decides that it wants to discourage cigarette smoking by raising the tax on cigarettes. The effect of a given tax increase on the amount of cigarette smoking would be greater if demand is more ______ or supply is more ______.
   a. elastic; elastic.
   b. elastic; inelastic.
   c. inelastic; inelastic.
   d. inelastic; elastic.

41) Suppose that the equilibrium wage rate is $5 in the restaurant industry. If a minimum wage of $8 is put into effect, the effect in the restaurant industry will:
   a. definitely make the employers worse off and the workers better off.
   b. definitely make the employers worse off, but the workers could be made better off or worse off.
   c. could help or hurt both the employers and workers.
   d. definitely make both the employers and the workers better off.