ECO201: PRINCIPLES OF MICROECONOMICS

FIRST MIDTERM EXAMINATION

OCTOBER 4, 2001

Directions

1. There are 33 short answer questions worth 3 points each and 5 essay questions worth a total of 21 points. All answers to the first 33 questions should be placed on the answer sheet attached to the end of the exam. No credit will be given for answers placed elsewhere. For the essay questions, put your answers in the space provided beneath each question.

2. A calculator is allowed.

3. You have the entire class period to finish the exam. However, no additional time will be allowed.
To answer the next 5 questions, suppose there is a small island economy with 100 Hawkeyes and 50 Buckeyes. In a given day, a Hawkeye can produce either 50 beaded necklaces or 2 rugs. A Buckeye can produce either 40 beaded necklaces or 1 rug.

1) Who has the comparative advantage in rug production?
   a. Hawkeyes       b. Buckeyes

2) Draw the PPF for this economy in the space provided on the answer sheet. Be sure to label the axes and indicate the numeric value of the vertical intercept, the horizontal intercept, and the value at which the "kink" in the PPF occurs.

3) If the economy produces 5000 necklaces, what is the maximum number of rugs it can produce in a day?

4) A combination of 50 rugs and 5000 necklaces:
   a. technologically efficient.
   b. technologically inefficient.
   c. unattainable without additional resources or better technology.
5) Suppose that the equilibrium price and quantity of lettuce simultaneously increase. Which of the following would be most likely to explain this combination of events?
   a. Poor weather conditions that lead to a small crop of lettuce.
   b. New technology that reduces the cost of producing lettuce.
   c. An increase in the price of other vegetables that are considered to a substitute in consumption for lettuce (e.g. cabbage).
   d. An increase in the price of a complement in consumption for lettuce (e.g. salad dressing).

6) 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 surplus.
   d. a price floor below the equilibrium price causes a shortage.

7) If oysters and pearls are complements in production, an increase in demand for the oysters will cause the equilibrium price of pearls to ____ and the equilibrium quantity to ____.
   a. increase; increase.
   b. increase; decrease.
   c. decrease; decrease.
   d. decrease; increase.

8) Which of the following would cause the equilibrium price of coal to rise and the equilibrium quantity to fall?
   a. an increase in the price of a substitute in consumption for coal.
   b. an increase in the price of a complement in consumption for coal.
   c. an increase in the price of a substitute in production for coal.
   d. an increase in the price of a complement in production for coal.
9) A recent study estimates that the price elasticity of demand for airline tickets is 2.4. Based on this information, a 20 percent increase in the price of airline tickets would cause consumers to buy ______ percent fewer tickets. (Round your answer to nearest one-tenth of one percent.)

10) If the price elasticity of demand for airline tickets is 2.4, how much would the airline have to cut ticket prices if it wanted to increase the number of tickets sold by 10 percent? (Round your answer to nearest one-tenth of one percent.)

11) The price elasticity of demand for a product will generally be (greater, lesser) if there are more substitutes available for the product and will be (greater, lesser) if people spend a large fraction of their income on the product.
   a. greater; lesser.
   b. greater; greater.
   c. lesser; lesser.
   d. lesser; greater.

12) The cross-price elasticity of demand between two products will:
   a. never be negative.
   b. be positive if the two products are complements in production.
   c. be positive if the two products are substitutes in production.
   d. never be positive.
To answer the next 5 questions, consider the following hypothetical supply and demand curves for long distance phone calls.

13) What is the elasticity of demand for long distance phone calls over the price range of $.10 to $.12 per minute? (round your answer to the nearest one-tenth, e.g. 4.1)

14) At the equilibrium price of $.10 per minute, what is the dollar value of consumer's surplus? (note that quantity is measured in millions of minutes).

15) At the equilibrium price of $.10 per minute, what is the dollar value of producer's surplus? (note that quantity is measured in millions of minutes).

Suppose there are no positive or negative externalities associated with long distance phone calls and the government imposes a price ceiling of $.08 per minute.

16) Compared to the equilibrium price of $.10 per minute, with the $.08 price ceiling consumers would be (better off, worse off) by $_______.

17) Compared to the equilibrium price of $.10 per minute, with the $.08 price ceiling producers would be (better off, worse off) by $_______.

18) With the price ceiling of $.10 per minute, there would be a deadweight loss of $_______.
Suppose that the government imposes a new tax on imported oil and the supply curve is shifted from S0 to S1 in the diagram below.

![Graph showing supply curves S0 and S1, with price per barrel of oil and barrels of imported oil imported annually on the axes.]

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

19) Prior to the tax, consumers surplus is $_____ million.

20) Prior to the tax, producers surplus is $_____ million.

21) The tax revenue from this tax would be $_______ million.

22) The excess burden of the this tax would be $______ million.

23) This tax would make oil importers (i.e. the buyers) worse off by $_______ million.
24) A price ceiling on gasoline set below the equilibrium price would:
   a. definitely make gasoline producers worse off and definitely make gasoline buyers better off.
   b. definitely make gasoline producers worse off, but could make gasoline buyers better or worse off.
   c. definitely make gasoline buyers better off, but could make gasoline producers better or worse off.
   d. none of the above.

25) If the government imposes a quota that restricts orange production below the equilibrium level for the market, the quota would:
   a. definitely make orange producers and orange consumers better off.
   b. definitely make orange producers and orange consumers worse off.
   c. definitely make orange consumers worse off, but orange producers could be better or worse off.
   d. definitely make orange producers better off, but orange consumers could be better or worse off.

26) Suppose that the government increases the tax on each gallon of gasoline from $.40 to $.50. The total tax revenue from the gas tax would:
   a. definitely increase if the demand for gasoline is perfectly inelastic.
   b. definitely decrease if the demand for gasoline is perfectly inelastic.
   c. remain the same if the demand for gasoline is perfectly inelastic.
   d. could either increase or decrease if the demand for gasoline is perfectly inelastic.

27) If the demand for gasoline is perfectly inelastic, an increase in the gas tax will cause:
   a. no change in gas prices for consumers.
   b. gas prices for consumers to increase as much as the tax increase.
   c. the equilibrium quantity of gasoline to fall.
   d. both a and c.
   e. both b and c.

28) The allocatively efficient amount of a commodity is produced when production is at the level where:
   a. SMB=SMC
   b. PMB=SMB
   c. PMC=SMC
   d. PMB=PMC
29) When a person receives a flu shot, she has a lower chance of getting the flu but also reduces the chance that others get the flu from her. Because of this, flu shots have:
   a. positive externalities and the market would under-provide without government intervention.
   b. positive externalities and the market would over-provide without government intervention.
   c. negative externalities and the market would under-provide without government intervention.
   d. negative externalities and the market would over-provide without government intervention.

To answer the next 3 questions, refer to the diagram below describing the market for gadgets.

30. Based on the diagram above, there must be a (positive, negative) externality of $____ per gadget produced.

31. If the production of gadgets is increased from 1000 to 1200, the additional benefits to society of the additional gadgets would be $________.

32. If the production of gadgets is increased from 1000 to 1200, the additional cost to society of the additional gadgets would be $________.
ESSAY QUESTIONS.

Read the question carefully and be concise in your answer. THINK BEFORE YOU WRITE!

1. (4 points) After the terrorist attacks, some legislators have argued for increased funding for high speed rail services with the thought being that rail services might be less susceptible to terrorist attacks than airlines. If more high speed rail services were offered, would this make the demand for airline tickets more or less elastic? In one sentence, WHY?

Since rail services are a substitute for airline travel, additional rail services would make the demand for air travel more elastic.

2. (4 points) If the objective of government is to maintain allocative efficiency in the rail services industry, what case would have to be made in order to justify federal subsidization of rail services? (ONE SENTENCE.)

To argue for federal subsidization of rail services would require that a person be able to make the case that travel by rail generates positive externalities (i.e. makes people other than the rail travelers better off).

3. (4 points) Some economists argue that, on the basis of allocative efficiency, if the government must tax commodities to finance government services, it should tax those commodities that have highly inelastic demand. What is the basis for this argument?

The more inelastic demand is, the smaller will be the effect on the equilibrium quantity of the good. Consequently, if demand is inelastic, the market will provide an amount that is "close" to the allocatively efficient level of output and the excess burden (or deadweight loss) of the tax will be small.
4. The recent terrorist attacks on the World Trade Center and the Pentagon make it clear that airline travel generates risks for people other than the airline passengers.

a. (3 points) Given the risks that airline travel presents for people other than the airline passengers, illustrate how the SMB and SMC curves compare to the supply and demand curves for airline tickets on the diagram below.

![Diagram showing SMC above PMC and SMC equals PMC at equilibrium, indicating allocative inefficiency.

b. (3 points) Referring to the diagram above, explain whether the market would produce too much or too little airline travel in the absence of government intervention.

Airline travel has negative externalities causing SMC to lie above PMC. As a result, the market will generate an equilibrium quantity of QM whereas the allocatively efficient level of output is at QE. Consequently, the market would produce too much airline travel in the absence of government intervention.

c. (3 points) Based on your answer in (b), should the government tax or subsidize airline travel? WHY?

The government should tax airline travel because a tax on the airline producers would shift supply leftward and push the market output towards the efficient level.
**ANSWER SHEET.**

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![Graph](Image)