STUDENT'S NAME: ____________________________________________

STUDENT'S IDENTIFICATION NUMBER: ___________________________

DAY AND TIME YOUR SECTION MEETS: ____________________________

BEFORE YOU BEGIN PLEASE MAKE SURE THAT YOUR EXAMINATION HAS BEEN DUPLICATED
AND COLLATED CORRECTLY. THERE SHOULD BE 22 MULTIPLE CHOICE QUESTIONS AND
THREE PROBLEMS. THE EXAM HAS 14 PAGES INCLUDING THIS COVER SHEET.

ANSWER THE MULTIPLE CHOICE PROBLEMS ON THE SCANTRON SHEET. ANSWER THE
THREE WRITTEN PROBLEMS ON THIS EXAMINATION SHEET.

BE SURE TO FILL IN YOUR NAME (LAST NAME FIRST) AT THE TOP OF THE SCANTRON SHEET.
FILL IN YOUR STUDENT IDENTIFICATION NUMBER UNDER "IDENTIFICATION NUMBER" ON
THE SCANTRON SHEET.

WRITE YOUR TA'S NAME IN THE UPPER-RIGHT HAND CORNER OF YOUR SCANTRON SHEET.

MULTIPLE CHOICE: _____ PROB1: _____ PROB2: _____ PROB3: _____ TOTAL: ______

University of Maryland Honor Pledge

The University is committed to Academic Integrity, and has a nationally recognized Honor Code,
administered by the Student Honor Council. In an effort to affirm a community of trust, the Student Honor
Council proposed and the University Senate approved Honor Pledge. The University of Maryland Honor
Pledge reads:

"I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or
assignment)."

Please rewrite the exact wording of the pledge, followed by your signature in the space below:

Pledge:  _______________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

Your Signature: ____________________________________________
Section 1: Written Answers
Question 1 (25 points)
The market for wine (sold by the case) in Washington, D.C. is perfectly competitive. It can be represented by a strictly upward sloping supply curve. The demand curve may take any of the forms we discussed in class, including the extreme cases. The costs of selling wine include a transportation cost of $2 per case. At a price of $12 per case, no wine is supplied to the market. (In this question, you may assume there are no taxes on wine.)

a) (5 points) In a demand and supply diagram, characterize a competitive equilibrium where the equilibrium quantity is 500 cases per week and the equilibrium price is $120 per case. Be sure to label the diagram clearly including the axes and the equilibrium.

b) (5 points) Provide a different demand and supply diagram that shows the effects of a reduction in the transportation cost to $1 per case. Show the old demand and supply, the new demand and supply (if relevant) and the old competitive equilibrium and new competitive equilibrium in the diagram.
c) (6 points) Provide a different demand and supply diagram that shows an example where, after a reduction in the transportation cost to $1 per case, the new equilibrium price is the same as the old equilibrium price. Note that the shape of either the demand or supply curves may be different from your answers above. Show clearly the old and new equilibria.

d) (5 points) Provide a different demand and supply diagram that shows an example where, after a reduction in the transportation cost to $1 per case, the new equilibrium quantity is the same as the old equilibrium quantity. Note that either the demand or supply curves may be different from your answers above. Show clearly the old and new equilibria.
e) (4 points) Provide a different demand and supply diagram that shows an example where, after a reduction in the transportation cost to $1 per case, in the new equilibrium, the total expenditure by consumers on wine is the same as before. Be sure to clearly indicate what is special about the curves in this case that leads to this result.
**Question 2 (16 Points)**

In this question, you may assume that mystery books and eyeglasses are complements, books and movies are substitutes and that paper is a significant input in the production of mystery books.

a) (4 points) Draw a supply and demand diagram for the market for mystery books. Be sure to label the curves, the competitive equilibrium and the axes.

b) (4 points) Suppose the price of eyeglasses falls. Show the effects of this change in the market for books. You should include your old demand and supply curves in this diagram. Now, 10 words or less, describe what would happen to equilibrium price and quantity if, *at the same time*, the price of movies went up.
c) (3 points) Suppose that there was no change to the price of eyeglasses or movies but that the price of paper went up. Show the effects of this change to your market analyses in part a) above. You should include your old demand and supply curves in this diagram.

d) (5 points) Now show the effects of BOTH a fall in the price of eyeglasses and a rise in the price of paper (and no change in movie price). You should include your old demand and supply curves in this diagram. In words, describe how the new equilibrium compares to the equilibrium in part a). For example, is the new price and quantity higher or lower?
Question 3 (14 points)
In a single (large) demand and supply diagram for the automotive gasoline market, show the effects of a reduction in a per gallon tax for gasoline from $1.50 to $1.00. In your diagram or below it, provide answers to these questions (or if the answer can not be determined, explain why).

i)  (4 points) Show the old price paid by consumers and the new price paid in your diagram and answer the following: If you added $0.50 to the new price paid by consumers would it be more than, equal to or less than the old price paid by consumers?

ii) (3 points) Show the old consumer surplus and the new consumer surplus. Which is higher?

iii) (4 points) Show the old total surplus and the new total surplus. Which is higher and by how much?

iv) (3 points) Show the old tax revenue and the new tax revenue. Which is higher?
Section 2: Multiple Choice
(Each question is worth 2.3 points. Please select THE BEST answer.)

1. In a competitive market, each seller has limited control over the price of his product because
   a. other sellers are offering similar products.
   b. buyers exert more control over the price than do sellers.
   c. these markets are highly regulated by government.
   d. sellers usually agree to set a common price that will allow each seller to earn a
      comfortable profit.

2. Refer to Figure 1. The price elasticity of demand between point A and point B, using the
   midpoint method, is
   a. 1.
   b. 1.5.
   c. 2.
   d. 2.5.

3. Refer to Figure 1. If the price decreased from $18 to $6,
   a. total revenue would increase by $1,200 and demand is elastic between points A and C.
   b. total revenue would increase by $800 and demand is elastic between points A and C.
   c. total revenue would decrease by $1,200 and demand is inelastic between points A and C.
   d. total revenue would decrease by $800 and demand is inelastic between points A and C.
4. Suppose the government has imposed a price ceiling on televisions. Which of the following events could transform the price ceiling from one that is not binding into one that is binding?
   a. Firms take advantage of an advance in technology that reduces the amount of labor necessary to produce televisions.
   b. Firms face higher wages due to pressures from their labor unions.
   c. Consumers' income decreases, and televisions are a normal good.
   d. All of the above are correct.

Figure 2

5. Refer to Figure 2 where a tax equal to the difference between \( P_3 \) and \( P_2 \) has been imposed. The tax causes a reduction in consumer surplus that is represented by area
   a. \( h \).
   b. \( g + f \).
   c. \( d + e \).
   d. \( c \).

6. Refer to Figure 2 where a tax equal to the difference between \( P_3 \) and \( P_2 \) has been imposed. The loss in total surplus (or total welfare) that results from the tax is represented by area
   a. \( h + g + d + c \).
   b. \( h + g + f \).
   c. \( d + e + c \).
   d. \( f + e \).
7. Suppose Lauren, Leslie and Lydia all purchase bulletin boards for their rooms for $15 each. Lauren's willingness to pay was $35, Leslie's willingness to pay was $25, and Lydia's willingness to pay was $30. Total consumer surplus for these three would be
   a. $15.
   b. $30.
   c. $45.
   d. $90.

8. Suppose that a tax is placed on books. If the buyers pay most of the burden of the tax, we know that the
   a. demand is more inelastic than the supply.
   b. supply is more inelastic than the demand.
   c. government has required that buyers remit the tax payments.
   d. government has required that buyers remit the tax payments.

9. Refer to Table 1. Which of the three supply curves represents the least elastic supply?
   a. supply curve A
   b. supply curve B
   c. supply curve C
   d. There is no difference in the elasticity of the three supply curves.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Supply Curve A</th>
<th>Supply Curve B</th>
<th>Supply Curve C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$1.00</td>
<td>$2.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>Quantity Supplied</td>
<td>500</td>
<td>600</td>
<td>400</td>
</tr>
<tr>
<td>Price</td>
<td>$1.00</td>
<td>$3.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>Quantity Supplied</td>
<td>600</td>
<td>900</td>
<td>700</td>
</tr>
</tbody>
</table>

10. When supply and demand both increase, equilibrium
   a. price will increase.
   b. price will decrease.
   c. quantity may increase, decrease, or remain unchanged.
   d. price may increase, decrease, or remain unchanged.

11. Beef is a normal good. You observe that both the equilibrium price and quantity of beef have fallen over time. Which of the following explanations would be most consistent with this observation?
   a. Consumers have experienced an increase in income and beef-production technology has improved.
   b. The price of chicken has risen and the price of steak sauce has fallen.
   c. New medical evidence has been released that indicates the higher a person's beef consumption the less long the person will likely live.
   d. The demand curve for beef must be positively sloped.
12. If Steven's income decreases and, as a result, he chooses to buy fewer bagels per month at each price his demand curve will
   a. shift inward.
   b. shift outward.
   c. not shift; instead, Steven will move along his demand curve downward and to the right.
   d. not shift; instead, Steven will move along his demand curve upward and to the left.

13. At a minimum wage that exceeds the equilibrium wage,
   a. the quantity demanded of labor will exceed the quantity supplied.
   b. the quantity supplied of labor will exceed the quantity demanded.
   c. the minimum wage will not be binding.
   d. the market for skilled workers is affected, but the market for unskilled workers remains unaffected.

14. Sally sharpens knives in her spare time for extra income. Buyers of her service are willing to pay $2.50 per knife for as many knives as Sally is willing to sharpen. On a particular day, she is willing to sharpen the first knife for $1.75, the second knife for $2.25, the third knife for $2.75, and the fourth knife for $3.25. Assume Sally is rational in deciding how many knives to sharpen. Her producer surplus is
   a. $0.25.
   b. $0.50.
   c. $1.00.
   d. $1.75.

15. The term price takers refers to buyers and sellers in
   a. perfectly competitive markets.
   b. monopolies.
   c. markets that are regulated by government.
   d. markets in which buyers cannot buy all they want and/or sellers cannot sell all they want.

16. You love peanut butter. You hear on the news that 50 percent of the peanut crop in the South has been wiped out by drought, and that this will cause the price of peanuts to double by the end of the year. As a result,
   a. your demand for peanut butter will increase, but not until the end of the year.
   b. your demand for peanut butter increases today.
   c. your demand for peanut butter decreases as you look for a substitute good.
   d. you will wait for the price of jelly to change before altering your demand for peanut butter.

17. Russell spends an hour studying instead of playing tennis. The opportunity cost to him of studying is
   a. the improvement in his grades from studying for the hour.
   b. the improvement in his grades from studying minus the enjoyment of playing tennis.
   c. the enjoyment and exercise he would have received had he played tennis.
   d. zero. Since Russell chose to study rather than to play tennis, the value of studying must have been greater than the value of playing tennis.

18. For a good that is a necessity,
   a. quantity demanded tends to respond substantially to a change in price.
   b. demand tends to be inelastic.
   c. the law of demand often does not apply.
   d. All of the above are correct.
19. Refer to Figure 3. Suppose the supply curves that are drawn represent supply curves for single-family residential houses in the next three months. Then the movement from $S$ to $S_1$ could be caused by
   a. an increase in the price of apartments (a substitute for single-family houses for many people looking for a place to live).
   b. a newly-formed expectation by house-builders that prices of houses will increase significantly six months from now.
   c. a decrease in the price of lumber.
   d. All of the above are correct.

20. When the demand for a good increases and the supply of the good remains unchanged, consumer surplus
   a. decreases.
   b. is unchanged.
   c. increases.
   d. may increase, decrease, or remain unchanged.
21. Refer to Figure 4. When the price rises from $P_1$ to $P_2$, consumer surplus
   a. increases by an amount equal to A.
   b. decreases by an amount equal to B + C.
   c. increases by an amount equal to B + C.
   d. decreases by an amount equal to C.
22. In Figure 5
a. Case 1 illustrates the effect of a percentage tax on the supply curve and Case 2 illustrates the effect of a per unit tax on a supply curve.
b. Case 2 illustrates the effect of a percentage tax on the supply curve and Case 1 illustrates the effect of a per unit tax on a supply curve.
c. Both cases illustrate the effect of a per unit tax on the supply curve.
d. Both cases illustrate the effect of a percentage tax on the supply curve.