Sample Midterm I

PART I – Multiple Choice Questions

1. Which of the following is a correct statement about production possibilities frontiers?
   a. An economy can produce only on the production possibilities frontier.
   b. An economy can produce at any point inside or outside a production possibilities frontier.
   c. An economy can produce at any point on or inside the production possibilities frontier, but not outside the frontier.
   d. An economy can produce at any point inside the production possibilities frontier, but not on or outside the frontier.

ANS: C

2. In a certain economy, toys and greeting cards are produced, and the economy currently operates on its production possibilities frontier. Which of the following events would allow the economy to produce more toys and more greeting cards, relative to the quantities of those goods that are being produced now?
   a. The economy experiences economic growth.
   b. There is a technological advance in the toy industry, but the greeting card industry experiences no such advance.
   c. There is a technological advance in the greeting card industry, but the toy industry experiences no such advance.
   d. All of the above are correct.

ANS: D

3. Regan grows flowers and makes ceramic vases. Jayson also grows flowers and makes ceramic vases, but Regan is better at producing both goods. In this case, trade could
   a. benefit both Jayson and Regan.
   b. benefit Jayson, but not Regan.
   c. benefit Regan, but not Jayson.
   d. benefit neither Jayson nor Regan.

ANS: A

4. Assume for the United States that the opportunity cost of each airplane is 100 cars. Which of these pairs of points could be on the United States' production possibilities frontier?
   a. (200 airplanes, 5,000 cars) and (150 airplanes, 4,000 cars)
   b. (200 airplanes, 10,000 cars) and (150 airplanes, 20,000 cars)
   c. (300 airplanes, 15,000 cars) and (200 airplanes, 25,000 cars)
   d. (300 airplanes, 25,000 cars) and (200 airplanes, 40,000 cars)

ANS: C
5. A farmer has the ability to grow either corn or cotton or some combination of the two. Given no other information, it follows that the farmer’s opportunity cost of a bushel of corn multiplied by his opportunity cost of a bushel of cotton
   a. is equal to 0.
   b. is between 0 and 1.
   c. is equal to 1.
   d. is greater than 1.
ANS: C

6. Suppose that a worker in Agland can produce either 10 units of organic grain or 2 units of incense per year, and a worker in Zenland can produce either 5 units of organic grain or 15 units of incense per year. There are 20 workers in Agland and 10 workers in Zenland. Currently the two countries do not trade. Agland produces and consumes 100 units of grain and 20 units of incense per year. Zenland produces and consumes 50 units of grain and no incense per year. If each country made the decision to specialize in producing the good in which it has a comparative advantage, then the combined yearly output of the two countries would increase by
   a. 30 units of grain and 100 units of incense.
   b. 30 units of grain and 150 units of incense.
   c. 50 units of grain and 90 units of incense.
   d. 50 units of grain and 130 units of incense.
ANS: D

7. Assume that Aruba and Iceland can switch between producing coolers and producing radios at a constant rate.

<table>
<thead>
<tr>
<th></th>
<th>Labor Hours Needed to Make 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cooler</td>
</tr>
<tr>
<td>Aruba</td>
<td>2</td>
</tr>
<tr>
<td>Iceland</td>
<td>1</td>
</tr>
</tbody>
</table>

At which of the following prices would both Aruba and Iceland gain from trade with each other?
   a. 2 radios for 4 coolers
   b. 2 radio for 6 coolers
   c. 2 radio for 10 coolers
   d. Aruba and Iceland could not both gain from trade with each other at any price.
ANS: B
8. Ford Motor Company announces that next month it will offer $3,000 rebates on new Mustangs. As a result of this information, today’s demand curve for Mustangs
   a. shifts to the right.
   b. shifts to the left.
   c. shifts either to the right or to the left, but we cannot determine the direction of the shift from the given information.
   d. will not shift; rather, the demand curve for Mustangs will shift to the right next month.

ANS: B

9.

<table>
<thead>
<tr>
<th>Price</th>
<th>Firm A’s Quantity Supplied</th>
<th>Firm B’s Quantity Supplied</th>
<th>Firm C’s Quantity Supplied</th>
<th>Firm D’s Quantity Supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$2</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>$4</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>$6</td>
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<td>12</td>
<td>15</td>
</tr>
<tr>
<td>$8</td>
<td>2</td>
<td>12</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>$10</td>
<td>0</td>
<td>15</td>
<td>4</td>
<td>25</td>
</tr>
</tbody>
</table>

Which supply schedules obey the law of supply?
   a. Firm A’s only
   b. Firm B’s, Firm C’s, and Firm D’s only
   c. Firm A’s and Firm C’s only
   d. Firm B’s and Firm D’s only

ANS: D
10. Saddle shoes are not popular right now, so very few are being produced. If saddle shoes become popular, then how will this affect the market for saddle shoes?
   a. The supply curve for saddle shoes will shift right, which will create a shortage at the current price. Price will increase, which will decrease quantity demanded and increase quantity supplied. The new market equilibrium will be at a higher price and higher quantity.
   b. The supply curve for saddle shoes will shift right, which will create a surplus at the current price. Price will decrease, which will increase quantity demanded and decrease quantity supplied. The new market equilibrium will be at a lower price and higher quantity.
   c. The demand curve for saddle shoes will shift right, which will create a shortage at the current price. Price will increase, which will decrease quantity demanded and increase quantity supplied. The new market equilibrium will be at a higher price and higher quantity.
   d. The demand curve for saddle shoes will shift right, which will create a surplus at the current price. Price will decrease, which will increase quantity demanded and decrease quantity supplied. The new market equilibrium will be at a lower price and higher quantity.

ANS: C

11. Which of the following would be the most likely result of a binding price ceiling imposed on the market for rental cars?
   a. frequent rental programs such as “Rent nine times and the tenth rental is free!”
   b. enhanced maintenance programs to promote the high quality of the cars
   c. free gasoline given to people as an incentive to a rent a car
   d. slow replacement of old rental cars with newer ones

ANS: D

12. If the government removes a binding price floor from a market, then the price received by sellers will
   a. decrease, and the quantity sold in the market will decrease.
   b. decrease, and the quantity sold in the market will increase.
   c. increase, and the quantity sold in the market will decrease.
   d. increase, and the quantity sold in the market will increase.

ANS: B
13. When the price ceiling applies in this market, and the supply curve for gasoline shifts from $S_1$ to $S_2$,
   a. the market price will increase to $P_3$.
   b. a surplus will occur at the new market price of $P_2$.
   c. the market price will stay at $P_1$.
   d. a shortage will occur at the new market price of $P_2$.
ANS: D

14. When a tax is levied on sellers of tea,
   a. the well-being of both sellers and buyers of tea is unaffected.
   b. sellers of tea are made worse off, and the well-being of buyers is unaffected.
   c. sellers of tea are made worse off, and buyers of tea are made better off.
   d. both sellers and buyers of tea are made worse off.
ANS: D

15. Suppose there is currently a tax of $50 per ticket on airline tickets. Buyers of airline tickets are required to pay the tax to the government. If the tax is reduced from $50 per ticket to $30 per ticket, then the
   a. demand curve will shift upward by $20, and the price paid by buyers will decrease by less than $20.
   b. demand curve will shift upward by $20, and the price paid by buyers will decrease by $20.
   c. supply curve will shift downward by $20, and the effective price received by sellers will increase by less than $20.
   d. supply curve will shift downward by $20, and the effective price received by sellers will increase by $20.
ANS: A
16. If the government wants to reduce smoking, it should impose a tax on
   a. buyers of cigarettes.
   b. sellers of cigarettes.
   c. either buyers or sellers of cigarettes.
   d. whichever side of the market is less elastic.
ANS: C

17. Which of the following is correct?
   a. One-fourth of the burden of the tax falls on buyers, and three-fourths of the burden of the tax falls on sellers.
   b. One-third of the burden of the tax falls on buyers, and two-thirds of the burden of the tax falls on sellers.
   c. One-half of the burden of the tax falls on buyers, and one-half of the burden of the tax falls on sellers.
   d. Two-thirds of the burden of the tax falls on buyers, and one-third of the burden of the tax falls on sellers.
ANS: D

18. Studies indicate that the price elasticity of demand for cigarettes is about 0.4. A government policy aimed at reducing smoking changed the price of a pack of cigarettes from $2 to $6. According to the midpoint method, the government policy should have reduced smoking by
   a. 30%.
   b. 40%.
   c. 80%.
   d. 250%.
ANS: B
19. Suppose demand is perfectly inelastic, and the supply of the good in question decreases. As a result,
   a. the equilibrium quantity decreases, and the equilibrium price is unchanged.
   b. the equilibrium price increases, and the equilibrium quantity is unchanged.
   c. the equilibrium quantity and the equilibrium price both are unchanged.
   d. buyers’ total expenditure on the good is unchanged.

ANS: B

20. Suppose that demand is inelastic within a certain price range. For that price range,
   a. an increase in price would increase total revenue because the decrease in quantity demanded is proportionately less than the increase in price.
   b. an increase in price would decrease total revenue because the decrease in quantity demanded is proportionately greater than the increase in price.
   c. a decrease in price would increase total revenue because the increase in quantity demanded is proportionately smaller than the decrease in price.
   d. a decrease in price would not affect total revenue.

ANS: A

21. When her income increased from $10,000 to $20,000, Heather's consumption of macaroni decreased from 10 pounds to 5 pounds and her consumption of soy-burgers increased from 2 pounds to 4 pounds. We can conclude that for Heather, macaroni and soy-burgers are both normal goods with income elasticities equal to 1.

ANS: C

22. As price elasticity of supply increases, the supply curve
   a. becomes flatter.
   b. becomes steeper.
   c. becomes downward sloping.
   d. shifts to the right.

ANS: A
23. New cars are normal goods. What will happen to the equilibrium price of new cars if the price of gasoline rises, the price of steel falls, public transportation becomes cheaper and more comfortable, auto-workers accept lower wages, and automobile insurance becomes more expensive?
   a. Price will rise.
   b. Price will fall.
   c. Price will stay exactly the same.
   d. The price change will be ambiguous.
ANS: B

24. The particular price that results in quantity supplied being equal to quantity demanded is the best price because it
   a. maximizes costs of the seller.
   b. maximizes tax revenue for the government.
   c. maximizes the combined welfare of buyers and sellers.
   d. minimizes the expenditure of buyers.
ANS: C

Table 1
For each of three potential buyers of oranges, the table displays the willingness to pay for the first three oranges of the day. Assume Alex, Bob, and Saim are the only three buyers of oranges, and only three oranges can be supplied per day.

<table>
<thead>
<tr>
<th></th>
<th>First Orange</th>
<th>Second Orange</th>
<th>Third Orange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex</td>
<td>$2.00</td>
<td>$1.50</td>
<td>$0.75</td>
</tr>
<tr>
<td>Bob</td>
<td>$1.50</td>
<td>$1.00</td>
<td>$0.80</td>
</tr>
<tr>
<td>Saim</td>
<td>$0.75</td>
<td>$0.25</td>
<td>$0</td>
</tr>
</tbody>
</table>

25. Refer to Table 1. The market quantity of oranges demanded per day is exactly 5 if the price of an orange, \( P \), satisfies
   a. \( 1.00 < P < 1.50 \).
   b. \( 0.80 < P < 1.50 \).
   c. \( 0.80 < P < 1.00 \).
   d. \( 0.75 < P < 0.80 \).
ANS: D
26. **Refer to table 1.** If the market price of an orange increases from $0.70 to $1.40, then consumer surplus
   a. increases by $2.50.
   b. decreases by $0.80.
   c. decreases by $2.60.
   d. decreases by $3.40.
   ANS: C

27. Tom tunes pianos in his spare time for extra income. Buyers of his service are willing to pay $155 per tuning. One particular week, Tom is willing to tune the first piano for $120, the second piano for $125, the third piano for $140, and the fourth piano for $160. Assume Tom is rational in deciding how many pianos to tune. His producer surplus is
   a. $95.
   b. $80.
   c. $75.
   d. $60.
   ANS: B

28. Which of the following will cause an increase in producer surplus?
   a. the imposition of a binding price ceiling in the market
   b. buyers expect the price of the good to be lower next month
   c. the price of a substitute increases
   d. income increases and buyers consider the good to be inferior
   ANS: C
PART II - Short Answer:

1)

a. Given the table below, graph the demand and supply curves for flashlights. Make certain to label the equilibrium price and equilibrium quantity.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity Demanded Per Month</th>
<th>Quantity Supplied Per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5</td>
<td>6,000</td>
<td>10,000</td>
</tr>
<tr>
<td>$4</td>
<td>8,000</td>
<td>8,000</td>
</tr>
<tr>
<td>$3</td>
<td>10,000</td>
<td>6,000</td>
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<tr>
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<td>12,000</td>
<td>4,000</td>
</tr>
<tr>
<td>$1</td>
<td>14,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

b. What is the equilibrium price and the equilibrium quantity?

c. Suppose the price is currently $5. What problem would exist in the market? What would you expect to happen to price? Show this on your graph.

d. Suppose the price is currently $2. What problem would exist in the market? What would you expect to happen to price? Show this on your graph.

ANS:

a. The equilibrium price (Pe) is $4 and the equilibrium quantity (Qe) is 8,000.

b. A surplus of 4,000 flashlights would be the problem in the market, and we would expect the price to fall.

c. A shortage of 8,000 flashlights would be the problem in the market, and we would expect the price to rise.
2) How does elasticity affect the burden of a tax? Justify your answer using supply and demand diagrams

ANS:

3) Suppose the market for pizza can be described by the following demand and supply equations:

Demand: \( Q = 10,000 - 2,000P \)

Supply: \( Q = 2,000P \)

where \( P \) is the price of the pizza and \( Q \) is the quantity of pizza.

a. Find equilibrium price and quantity in pizza market.

b. The government starts to collect $2 per unit tax from buyers. How this can affect the market? (i.e. find price paid by buyer, received by seller, and market quantity)

c. Do you think the market outcomes will be different if the government collects $2 per unit tax from seller rather than from buyer?
ANS: a. At the equilibrium, quantity demanded and quantity supplied are equal to each other.

\[ 10,000 - 2,000P = 2,000P \]
\[ 4,000P = 10,000 \]
\[ P = 2.5, \quad Q = 5,000 \]

b. When government starts to collect tax from buyer, demand curve will shift downward. New demand will be as below:

\[ Q_{\text{after tax}} = 10,000 - 2,000(P + t), \quad \text{where} \quad t = 2 \]
\[ Q_{\text{after tax}} = 10,000 - 4,000 - 2,000P \]
\[ Q_{\text{after tax}} = 6,000 - 2,000P \]

Market output after tax will be at the intersection of Demand after tax and supply.

\[ Q_{\text{after tax}} = S \]
\[ 6,000 - 2,000P = 2,000P \]
\[ 4,000P = 6,000 \]
\[ P = 1.5, \quad Q_{\text{after tax}} = 3,000 \]

where \( P \) is price received by the seller. In addition to \( P=1.5 \), buyers send $2 to the government as tax. Therefore, price paid by buyer is \( P^B=$3.5. So, due to the tax price paid by buyer increases by $1 and price received by seller decreases by $1. Output available in the market also decreases to 3,000 from 5,000.

c. As discussed in class, tax on buyer and tax on seller are equivalent which means both have the same impact on the market outcomes. Therefore, quantity available in the market will be 3,000; price paid by buyer will be $3.5, and price received by seller will be $1.5.