Sample Questions for ECN 302 Midterm 1

The correct answers are highlighted in yellow and the explanations for selected questions are provided in bold italics.

Question (1): Which of the following will NOT cause a shift to the right in the demand curve for beer?

a. A change in the price of beer.
   (Notes: A change in the price of beer would induce a movement along the demand curve for beer, rather than a shift in the demand curve for beer.)

b. A health study indicating positive health benefits of moderate beer consumption.

c. An increase in the price of French wine (a substitute).

d. A decrease in the price of potato chips (a complement).

Scenario 1:

The demand for books is: \( Q_D = 120 - P \)

The supply of books is: \( Q_S = 5P \)

Question (2): Refer to Scenario 1. What is the equilibrium price of books?

a. 5
b. 10
c. 15
d. 20
(Notes: To find this, set \( Q_D = Q_S \) (i.e. \( 120 - P = 5P \)). Thus, \( 6P = 120 \) and \( P = 20 \))

Question (3): Refer to Scenario 1. What is the equilibrium quantity of books sold?

a. 25
b. 50
c. 75
d. 100
(Notes: To find this, substitute \( P = 20 \) into \( Q_D \) or \( Q_S \))
Question (4): Suppose there is a decrease in both the demand for and supply of a good. What happens to equilibrium price and quantity?

a. Equilibrium quantity increases, but the effect on equilibrium price is ambiguous

**b. Equilibrium quantity decreases, but the effect on equilibrium price is ambiguous**

*(Notes: Both the demand curve and the supply curve shift to the left in this case. The new market equilibrium is given by the intersection of the new demand curve and the new supply curve. While the quantity is unambiguously lower at the new market equilibrium since there is downwards pressure on the quantity on both sides of the market, the net effect on price depends on the relative magnitudes of the shifts since the decrease in demand exerts downwards pressure on the price while the decrease in supply exerts upwards pressure on the price.)*

c. Equilibrium price increases, but the effect on equilibrium quantity is ambiguous

b. Equilibrium price decreases, but the effect on equilibrium quantity is ambiguous.

Question (5): According to basic supply and demand analysis, when Hurricane Katrina caused oil prices to rise, what happened to the equilibrium price and quantity of sport utility vehicles?

a. Equilibrium price and quantity both increased

**b. Equilibrium price and quantity both decreased**

*(Notes: Gasoline and sport utility vehicles are complements. Thus, when the price of oil (and gasoline) increases, the demand for sport utility vehicles decreases (i.e. the demand curve for sport utility vehicles shifts to the left). Thus, the equilibrium price and quantity for sport utility vehicles will decrease.)*

c. Equilibrium price increased and equilibrium quantity decreased

d. Equilibrium price decreased and equilibrium quantity increased
Question (6): Which of the following would cause a shift to the right of the supply curve for gasoline?

I. A large increase in the price of public transportation.
II. A large decrease in the price of automobiles.
III. A large reduction in the costs of producing gasoline.

a. I only.
b. II only.
c. **III only.**
   (Notes: Statement I and Statement II describe shocks to the demand schedule for gasoline and thus the scenarios described by these two statements would not affect the supply curve for gasoline. Statement III describes a reduction in the costs of producing gasoline. A reduction in the costs of producing gasoline increases the supply of gasoline and would shift the supply curve for gasoline to the right.)
d. II and III only.

![Figure 1](image_url)

Question (7): Refer to Figure 1 above. At point E, demand is:

a. **completely inelastic.**
   (Notes: We went through a very similar example in class. Refer to the lecture notes for Chapter 2.)
b. inelastic, but not completely inelastic.
c. infinitely elastic.
d. elastic, but not infinitely elastic.
Question (8): According to Table 1, which presents hypothetical data on price elasticity of demand, which of the following is true about lamb?

a. Each 2.7% change in the price of lamb causes a 1% change in the quantity demanded of lamb
b. The demand for lamb is inelastic
c. Each 1% change in the price of lamb causes a 2.7% change in the quantity demanded of lamb
(Notes: Since \( E^d_p = \frac{\% \Delta Q_d}{\% \Delta P} = -2.7 \), a 1% increase in the price of lamb causes a 2.7% decrease in the quantity demanded of lamb.)
d. Lamb is a normal good

Question (9): When the government controls the price of a product, causing the price to be above the free market equilibrium price,

a. all producers are made better off.
b. both producers and consumers are made better off.
c. all consumers are made better off.
d. some, but not all, sellers can find buyers for their goods.
(Notes: The government is instituting a binding price floor in this question. The quantity supplied will be greater than the quantity demanded when the price is above the equilibrium price.)
Question (10): The price elasticity of supply for gasoline in the U.S. is 0.4. If the price of gasoline rises by 8%, what is the expected change in the quantity of gasoline supplied in the U.S.?

a. +3.2%

(Notes: \( E_p^S = \frac{\% \Delta Q_s}{\% \Delta P} \Rightarrow \% \Delta Q_s = E_p^S \cdot (\% \Delta P) \). Thus, if \( E_p^S = 0.4 \) and \( \% \Delta P = 8\% \), \( \% \Delta Q_s = E_p^S \cdot (\% \Delta P) = (0.4)(8\%) = +3.2\% \).)

b. -3.2%
c. +32.0%
d. +0.32%

Question (11): Consider a supply curve of the form: \( Q = c + dP \). If \( d=0 \), then supply is:

a. **completely inelastic.**

(Notes: The price elasticity of supply is \( (P/Q_s)(\Delta Q_s/\Delta P) \). Since \( d=\Delta Q_s/\Delta P=0 \), the price elasticity of supply is zero and supply is completely inelastic. This means that the supply curve is a straight vertical line.)

b. inelastic, but not completely inelastic.
c. elastic, but not infinitely elastic.
d. infinitely elastic

Question (12): When government intervenes in a competitive market by imposing an effective price ceiling, we would expect the quantity supplied to __________ and the quantity demanded to __________.

a. **fall; rise**

(Notes: The fact that the price ceiling is effective implies that the government is forcing the maximum price to be lower than the equilibrium price. Thus, we would expect the quantity supplied to **fall** (since the supply curve is upwards sloping) and we would expect the quantity demanded to **rise** (since the demand curve is downwards sloping).)

b. fall; fall
c. rise; rise
d. rise; fall
Question (13): Consider the following three market baskets:

<table>
<thead>
<tr>
<th></th>
<th>Food</th>
<th>Clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

If preferences satisfy all three of the usual assumptions:

a. A is on the same indifference curve as B.
b. B is on the same indifference curve as C.
c. A is preferred to C.
d. B is preferred to A.

(Notes: Market basket B contains more food and more clothing compared to market basket A. If preferences satisfy the “more is better” assumption, B must be preferred to A. Note that we will not be able to make inferences about how C compares to A and B unless we have more information.)

Question (14): Gary Franklin is a movie critic. He invented the Franklin Scale with which he rates movies from 1 to 10 (10 being best). When asked about his scale, Mr. Franklin explained “that it is a subjective measure of movie quality. A movie with a ranking of 10 is not necessarily 10 times better than a movie with a ranking of 1, but it is better. A movie with a ranking of 5 is better than a movie with a ranking of 1, but is not as good a movie with a ranking of 10. That's all it really tells you.” Based on Mr. Franklin's description, his scale is:

a. ordinal but not cardinal.

(Notes: The scale allows Mr. Franklin to rank the movies but it does not indicate the extent to which one movie is preferred to another.)
b. cardinal but not ordinal.
c. an objective standard to judge movies.
d. neither cardinal nor ordinal.
Question (15): An upward sloping indifference curve defined over two goods violates which of the following assumptions from the theory of consumer behavior?

a. transitivity.
b. preferences are complete.
c. more is preferred to less.
d. all of the above.

Question (16): Alvin's indifference map for Good A and Good B are shown in the diagram below.

Which of the following statements about Alvin's preferences is correct?

a. Alvin receives no satisfaction from consuming Good A.
b. **Alvin receives no satisfaction from consuming Good B.** (Notes: Since Alvin's indifference curves are vertical straight lines, his utility will increase if and only if the quantity of Good A increases. He receives no satisfaction from consuming Good B.)
c. Alvin will only consume A and B in fixed proportions.
d. None of the above.
Question (17): If Jill's MRS of popcorn for candy is 2 (popcorn is on the horizontal axis, candy is on the vertical axis), Jill would willingly give up:

a. 2, but no more than 2, units of popcorn for an additional unit of candy.

b. 2, but no more than 2, units of candy for an additional unit of popcorn.

(Notes: The MRS measures the maximum amount of candy that Jill will give up for an additional unit of popcorn in this case since popcorn is on the X-axis and candy is on the Y-axis.)

c. 1, but no more than 1, unit of candy for an additional 2 units of popcorn.

d. 2, but no more than 2, units of popcorn for an additional 2 units of candy.
Question (18): Theodore's budget line has changed from A to B, even though his income has stayed the same. Which of the following price changes explains the change in Theodore's budget line?

- The price of food and the price of clothing increased.
- The price of food increased, and the price of clothing decreased.
- **The price of food decreased, and the price of clothing increased.**
  (Notes: The value for the horizontal intercept has increased, indicating that the price of food has decreased. The value for the vertical intercept has decreased, indicating that the price of clothing has increased.)
- The price of food and the price of clothing decreased.

![Budget Line Diagram](image)

Question (19): A consumer has $100 per day to spend on product A, which has a unit price of $7, and product B, which has a unit price of $15. What is the slope of the budget line if good A is on the horizontal axis and good B is on the vertical axis?

- **-7/15.**
  (Notes: The slope of the budget line is \(-\frac{P_A}{P_B} = -\frac{7}{15}\))
- -7/100.
- -15/7.
- 15/100.
Question (20): When Joe maximizes utility, he finds that his MRS is greater than \( P_x/P_y \). It is most likely that:

a. Joe’s preferences are incomplete.
b. Joe’s preferences are irrational.
c. Joe is not consuming good X.

d. Joe is not consuming good Y.

(Notes: This is very similar to the ice cream/ frozen yogurt example that we went through in class. Because the question tells us that Joe is maximizing utility at this bundle, we know that \( MRS > P_x/P_y \) indicates a corner solution for Joe’s utility maximizing bundle where Joe is not consuming good Y.)

Question (21): Denise is shopping for lobsters and eclairs. When she faces budget line \( b_1 \), she chooses market basket A over market basket B. When she faces budget line \( b_2 \), she chooses basket B over basket C. Which assumption of consumer theory helps us determine Denise’s preference ordering over basket A and basket C?

a. completeness
b. more is better than less
c. transitivity

d. convexity

Question (22): Suppose a consumer’s MRS is given by the formula \( MRS_{P,T} = \frac{T}{P} \), where \( P \) stands for the number of pieces of pizza and \( T \) stands for the number of tacos. Starting at 12 tacos and 4 pizzas, the consumer must receive

a. 3 tacos to compensate them for the loss of one piece of pizza

(Notes: Since \( MRS_{P,T} = \frac{T}{P} = \frac{12}{4} = 3 \) and also \( MRS_{P,T} = -\left( \frac{\Delta T}{\Delta P} \right) \), we know that the consumer must receive 3 tacos to compensate them for the loss of one piece of pizza.)

b. 3 pieces of pizza to compensate them for the loss of one taco
c. 1/3 taco to compensate them for the loss of one piece of pizza
d. 1/3 piece of pizza to compensate them for the loss of one taco
Question (23): To maximize his utility (U) a consumer has to choose how many cups of tea (T) and how many cups of coffee (C) to buy. The consumer’s utility function is given by U=T+C, which means that $\text{MRS}_T$ for $C = 1$ at all points on all of the consumer’s indifference curves. If the price of a cup of tea is $3 and the price of a cup of coffee is $2 and the consumer has $60 to allocate between tea and coffee, then he will buy

a. 20 cups of tea and 30 cups of coffee

b. 0 cups of tea and 30 cups of coffee

(Notes: Since $\text{MRS}_T$ for $C = 1$ at all points on an indifference curve for this consumer, tea and coffee are perfect substitutes for this consumer and the indifference curves are downwards sloping straight lines with slopes of -1. Since $P_T/P_C = 3/2$ and $\text{MRS}_T$ for $C = 1$, we know that the utility maximizing market basket is represented by a corner solution where the consumer consumes only the cheaper substitute (i.e. coffee). The consumer will optimally choose to spend all of his budget on coffee and buy $60/2 = 30$ cups of coffee.)

c. 20 cups of tea and 0 cups of coffee
d. None of the above
Question (24): Andy derives utility from two goods, potato chips ($Q_p$) and Cola ($Q_c$). Andy receives zero utility unless he consumes some of at least one good. The marginal utility that he receives from the two goods is given as follows:

<table>
<thead>
<tr>
<th>$Q_p$</th>
<th>$MU_p$</th>
<th>$Q_c$</th>
<th>$MU_c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
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<td>22</td>
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<td>12</td>
</tr>
<tr>
<td>8</td>
<td>-4</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Refer to the table above. What is the total utility that Andy will receive if he consumes 5 units of potato chips ($Q_p$) and no Cola drink ($Q_c$)?

a. 4 utils.
b. 10 utils.
c. 30 utils.
d. 40 utils.

(Notes: To get this answer, simply add up the $MU_p$ associated with each increment from $Q_p=1$ to $Q_p=5$. Total utility from consuming $Q_p=5$ and $Q_c=0$ is $12+10+8+6+4=40$.)

Question (25): The price of lemonade is $0.50; the price of popcorn is $1.00. If Fred has maximized his utility by purchasing strictly positive quantities of both lemonade and popcorn, his marginal rate of substitution will be:

a. 2 lemonades for one popcorn.
b. 1 lemonades for one popcorn.
c. 1/2 lemonade for one popcorn.
d. indeterminate unless more information on Fred's marginal utilities is provided.

(Notes: Since Fred is consuming his utility maximizing bundle, $MRS_{popcorn \ for \ lemonade}=(P_{popcorn}/P_{lemonade})=(1/0.5)=2$. Since $MRS_{popcorn \ for \ lemonade}=-(\Delta lemonade/ \Delta popcorn)$, this means that Fred is willing to give up 2 lemonades for one popcorn.)