ECON 2106- MIDTERM 2 (version A)
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• Directions: Write directly on the exam. You have an hour and fifteen minutes to complete the exam. There are 23 multiple choice, 5 definitions, 4 short answer, and 3 problems to solve. Questions with a superscript $^h$ were motivated directly from the homework. Questions with a superscript $^p$ were motivated directly from the problem set. The exam is worth a total of 60 points. I always suggest reading through an exam before attempting it. All the best.

• I’ve decided to let you complete this exam before deciding whether you want to replace your first exam with the average of this exam, the next exam, and the final. Please initial here if you still wish to do so.
Multiple choice: one point each, write the answer directly to the side of the problem and circle your answer.

1. Suppose you are thinking about two goods, call them A and B. The cross-price elasticity between these goods is NEGATIVE. If the price of good A rises, you should expect the demand for good B to:
   (a) rise
   (b) stay the same
   (c) fall

2. "A five percent rise in the price of sushi decreases the quantity of soy sauce demanded by two percent and decreases the quantity of sushi demanded by one percent." Based on this scenario, the price elasticity of demand for sushi and the cross price elasticity of demand for soy sauce with respect to the price of sushi are, RESPECTIVELY:
   (a) elastic, negative
   (b) elastic, positive
   (c) inelastic, negative
   (d) inelastic, positive

3. As we move from the top left to the bottom right along the demand curve, we should expect the price elasticity of demand to:
   (a) rise
   (b) stay the same
   (c) fall
   (d) none of these

4. Which one of the following sentences is true?
   (a) Consumer surplus must always be equal to producer surplus.
   (b) At a market equilibrium, there is no deadweight loss.
   (c) Introducing a binding price ceiling will increase surplus.
   (d) (a)-(c) are all false
   (e) (a)-(c) are all true

5. Suppose that there are only two people in the economy: Chris Bosh, and Carlos Boozer. At a price of $2, Chris demands two superstar teammates while Carlos demands one. At a price of $1, Chris demands four superstar teammates while Carlos demands three. Their market demand curve for superstar teammates contains which of the following (quantity, price) pairs?
   (a) (2, $2) and (4, $1)
   (b) (1, $2) and (3, $1)
   (c) (3, $2) and (7, $1)
   (d) (7, $2) and (3, $1)
6. Suppose a seller raises the price of her good and finds that her total revenue went up. It must be the case that the demand for her good along the portion of the demand curve she faced was:
   (a) elastic.
   (b) inelastic.

7. Which of the following terms describes a restriction on the number of goods that may be imported?
   (a) subsidy
   (b) quota
   (c) tariff
   (d) None of these.

8. **TRUE or FALSE**: Total surplus = consumer surplus + producer surplus.
   (a) TRUE
   (b) FALSE

For the next three questions, please consider the following graph:

9. **TRUE or FALSE**: What is the market equilibrium quantity? The market equilibrium price?
   (a) 10, $450
   (b) 20, $300
   (c) 20, $450
   (d) 10, $300

10. **TRUE or FALSE**: If a rent ceiling is set at $600 a month, it is a non-binding price ceiling.
    (a) TRUE
    (b) FALSE

11. Suppose we have a rent ceiling at $300. Which of the following sentences is true?
    (a) We have a shortage of apartments at this rent ceiling.
    (b) We neither have a shortage or surplus of apartments at this rent ceiling.
    (c) We have a surplus of apartments at this rent ceiling.
12. What is the amount of the tax?
   (a) There is no tax.
   (b) $.20
   (c) $.30
   (d) $.40

13. What is the price that the buyer pays? The seller receives?
   (a) $.60, $.60
   (b) $.70, $.70
   (c) $.50, $.70
   (d) $.70, $.50

14. How many fewer brownies are sold than would be sold at the equilibrium price?
   (a) 0
   (b) 1
   (c) 2
   (d) None of these.

15. Do the buyer and seller share the burden of the tax equally?
   (a) Yes.
   (b) No.

16. The United States regularly exports airplanes to other countries, but imports coffee from other countries. It must be the case that:
   (a) The U.S. has a comparative advantage in making coffee, while other countries have a comparative advantage in making airplanes.
   (b) The U.S. has a comparative advantage in making both coffee and airplanes.
   (c) The U.S. has a comparative advantage in making airplanes, while other countries have a comparative advantage in making coffee.
   (d) Other countries have a comparative advantage in making both coffee and airplanes.
17. If there is an import quota, what happens to consumer surplus and producer surplus?
   (a) Both rise.
   (b) Both fall.
   (c) Consumer surplus rises, while producer surplus falls.
   (d) Producer surplus rises, while consumer surplus falls.

18. Suppose we are importing. The old world price is $5, and the tariff is $2, so the new price after the tariff is $7. How would we calculate the government’s tariff revenue? (Hint: draw the graph for an import market, and then shade in the tariff revenue).
   (a) We would multiply the total number of goods sold in the market by $2.
   (b) We would multiply the total number of goods sold in the market by $7.
   (c) We would multiply the total number of goods imported in the market by $2.
   (d) We would multiply the total number of goods imported in the market by $7.

19. Hint: draw a graph. Suppose we are not importing. We impose a quota on suppliers. Relative to equilibrium, this will typically:
   (a) lower consumer surplus
   (b) increase deadweight loss
   (c) both of these
   (d) none of these

20. Although deer are alive the whole year, firearm hunting season for deer in Georgia is from October 22 until January 1. This is because deer are:
   (a) common resources
   (b) private goods
   (c) public goods

21. Michael goes home to Cincinnati to visit his wife, and proceeds to watch 12 consecutive hours of college football, which his wife hates. This is an example of a:
   (a) negative production externality
   (b) positive production externality
   (c) positive consumption externality
   (d) negative consumption externality

22. We define marginal social benefit as:
   (a) the marginal private benefit
   (b) an external benefit
   (c) the marginal private benefit plus the external benefit
   (d) the external benefit less the marginal private benefit

23. Do you want one free point?
   (a) Yes.
   (b) No.
• Definitions: Write the definition of the term in the space provided. Each definition is worth two points:

1. tax incidence

2. offshoring and outsourcing

3. imports and exports

4. free-rider problem

5. deadweight loss
1. It is common for restaurants near college campuses to offer inexpensive alcoholic drink specials on Mondays, Tuesdays, and Wednesdays, but it is less common to see those drinks offered for those same specials on Thursdays, Fridays, and Saturdays. Provide an economic explanation for this phenomenon using the notion of demand elasticity.

2. Briefly describe why the government, rather than the private market, provides goods like national defense and air traffic control.

3. Carefully describe why a binding price floor and a binding price ceiling create deadweight loss.

4. Name one reason why a country may wish to limit trade, then describe who wins and loses from this trade restriction.
1. Refer to the above graph.

(a) Is this an export market or an import market?

(b) Before trade, what is the domestic equilibrium price? The domestic equilibrium quantity?

(c) Before trade, what is the domestic equilibrium consumer surplus? The domestic equilibrium producer surplus? Note: **YOU DO NOT NEED TO ACTUALLY MULTIPLY THE NUMBERS, JUST WRITE DOWN HOW YOU WOULD FIND THE SURPLUS.**

(d) After trade, what is the quantity sold to domestic consumers? The total amount sold by domestic producers?

(e) After trade, what is the domestic equilibrium consumer surplus? The domestic equilibrium producer surplus? Note: **YOU DO NOT NEED TO ACTUALLY MULTIPLY THE NUMBERS, JUST WRITE DOWN HOW YOU WOULD FIND THE SURPLUS.**
2. For this question, it might be helpful to you to draw a graph, but it is certainly not required. Suppose you have two points on a demand curve: (0, 12) and (4, 0) such that the equation of this demand curve is \( P = -3Q + 12 \), and that you have two points on a supply curve, (0, 0) and (4, 4), such that the equation for the supply curve is \( P = Q \).

(a) (1 point) What is the market equilibrium price? The market equilibrium quantity?

(b) (1 point) Utilize the following formula: 
\[
\text{Elasticity} = \frac{|\frac{Q_2 - Q_1}{Q_2 + Q_1}|}{|\frac{P_2 - P_1}{P_2 + P_1}|}
\]
to calculate the price elasticity of demand. You may choose any of the three points you want: (0, 12), (4, 0), or the market equilibrium. Is the portion of the demand curve that you analyze elastic, inelastic, or unit elastic?

(c) (2 points) Use your answer for part (a) and your two vertical intercepts to find the consumer and producer surplus. Are they equal?

(d) (2 points) Pretend there is a price floor in this market. What is the minimum price required the price floor to generate a surplus? Also pretend there is a price ceiling in this market. What is the maximum price required for the price ceiling to generate a shortage?

3. The government has a number of different mechanisms that they can enact to regulate pollution. Write a short answer describing:

(a) what type of externality pollution is (production or consumption, positive or negative) and why this externality, without regulation, is generated.

(b) how a Pigovian tax might reduce pollution (what it is designed to do).

(c) how pollution permits might resolve pollution (what they are designed to do).