

Name: **KEY**
ECON 201—Montgomery College
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EXAM 2

- There are 110 possible points on this exam. The test is out of 100.
- You have one class session to complete this exam, but you should be able to complete it in less than that.
- Please turn off all cell phones and other electronic equipment.
- You are allowed a calculator for the exam. This calculator cannot be capable of storing equations. This calculator cannot double as a cell phone.
- Be sure to read all instructions and questions carefully.
- Remember to show all your work.
- Try all questions! You get zero points for questions that are not attempted.
- *Please print clearly and neatly.*

Part I: Matching. Write the letter from the column on the right which best matches each word or phrase in the column on the left. You will not use all the options on the right and you cannot use the same option more than once.

2 points each.

- | | |
|---|--|
| 1. I Allocatively efficient | A. Explains why politicians change their political platform when the electorate changes. |
| 2. G Comparative advantage | B. Explains why trade is so desirable. |
| 3. E Convergence | C. On the production possibilities frontier |
| 4. B Fundamental Theorem of Exchange | D. Only individuals act |
| 5. H Law of one price | E. Predicts all countries will be equally wealthy. |
| 6. A Median voter theorem | F. Predicts all goods will have the same cost of production. |
| 7. D Methodological individualism | G. Predicts that the best person to produce is the person who sacrifices the least for a unit of production. |
| | H. Requires transportation costs to be low. |
| | I. Socially optimal bundle |

- 1. A point that's allocatively efficient is the best bundle available; it represents not only efficiency in the productive sense (no idle means of production) but also it's making the best possible combination of goods and services.*
- 2. Comparative advantage, unlike absolute advantage, looks at not only how much can be produced but also the opportunity cost: what is sacrificed by production.*
- 3. Since each additional unit of capital is less and less useful and rich countries tend to have more capital, poor countries should grow faster than rich ones. The poor ones will thus catch up and each will be equally wealthy. Of course, we learned other conditions have to be in place first.*
- 4. All trade with complete information benefits both parties involved; like any sort of voluntary relationship, it's hard to argue that it's a bad thing.*
- 5. This law only works if transportation costs are low. If not, differences in prices can and will persist. Note E is also a pretty good answer but getting there relies on employing the pure/perfect competition model that's covered in introductory microeconomics.*
- 6. If voters change their preferences, the median voter will change, too (assuming the change affects the median voter; it's possible it won't).*

In the U.S., it's common to see a politician "pivot" when they move from the primaries (where only certain people can vote) to the general election (where a larger number of people can vote). Since the median voter has moved, the politicians move as well and the preferred policies change.

7. *Methodological individualism treats individuals as the only relevant actor. Institutions, like government, do not make decisions.*

Part II: Multiple Choice. *Choose the best answer to the following.*

4 points each.

8. Suppose the Gini ratio increases. Which of the following possible explanations could justify such a change?
- a. The rich get richer while the poor get poorer and everyone else is the same.
 - b. The rich get richer while everyone else makes the same amount of money.
 - c. Everyone gets equally poorer.
 - d. A & B**
 - e. All of the above

If the Gini ratio increases, that means there's more inequality. If the wealthy get wealthier, the poor will get a smaller share of total income even if the amount of income they have doesn't change. Similarly, if the poor lose income then, ceteris paribus, inequality increases. But if everyone loses proportionally loses the same amount of money, the percent of total each person has doesn't change.

9. Which of the following is an example of rent dissipation?
- a. Three airplane manufacturers each spending \$100 million, competing to try to get an overly lucrative \$300 million government contract.**
 - b. Stacy buys a hot dog from a hot dog vendor.
 - c. Randy loses his job and cannot afford to pay his rent.
 - d. One wealthy person gets a \$10,000 raise and, at the same time, twenty poor people see their pay cut by \$500.
 - e. None of the above.

Rent dissipation describes the total amount of resources attempting to get a single rent, or prize. In this case, the rent is "fully" dissipated: though one manufacturer will come out \$200 million ahead, two others will lose \$100 million; on net, nothing is awarded. Rent dissipation is the natural result of rent seeking; if you allow agents to pursue rents, you open the opportunity for them to compete for rents.

10. According to compensating differentials, which of the following jobs should pay the most?
- Coal miner**
 - Dancer
 - Dog walker
 - B or C; it's hard to tell which
 - It is impossible to tell with the information provided.

A typical individual would find coal mining the least desirable job: it's dirty, difficult, and dangerous. Thus few people want to do it and employers must offer a lot to encourage people to do it.

Note that you must think in terms of the typical person, not what you'd like. Personally, I don't like dogs that much and dancing isn't something I'd love to do all the time. But those are atypical preferences. Most people find dog walking and dancing pleasant (even if some parts are unpleasant).

11. Suppose San Diego had the comparative advantage in medical devices. What does that mean?
- San Diego can make the most medical devices.
 - San Diego can make the highest quality medical devices.
 - San Diego is better at making medical devices compared to its ability to provide tourism.
 - San Diego can make the cheap, lowest quality medical devices.
 - None of the above**

San Diego can make medical devices cheaper than anyone else; one medical device produced means it sacrificed the least amount of something else. In this case, quality is no different than quality (both require resources) so we hold quality constant.

Note that San Diego can have the comparative advantage in medical devices even if it can produce more tourism than medical devices. That's possible because another city may be able to make the same amount of tourism but supply far fewer medical devices. For example:

| | | City | |
|----------------|------------------------|-----------------|------------------|
| | | <i>Honolulu</i> | <i>San Diego</i> |
| Product | <i>Tourists</i> | 800 | 500 |
| | <i>Medical Devices</i> | 100 | 100 |

San Diego can entertain more tourists than it can build medical devices. But for every medical device built, it gives up 5 tourists while for every medical device built, Honolulu gives up 8 tourists. San Diego has the comparative advantage in medical devices even though it can entertain more tourists than build medical devices.

12. Is the trade deficit debt?

- a. Yes, because the money that leaves the country must be paid back.
- b. Yes, because any resources used beyond what the country could employ must come from somewhere.
- c. No, because utility is increasing.
- d. No, because no borrowing had to occur to create it.**
- e. None of the above

The trade deficit is just the distinction between the net flow of goods and services and the net flow of capital. Importing more than you export means you could pay for those imports by selling assets (net flow of capital); no debt is created in such a case.

13. The theory of convergence relies on what idea?

- a. Diminishing marginal productivity of capital**
- b. Diminishing marginal productivity of education
- c. Diminishing marginal utility of education
- d. B & C
- e. None of the above

Poor countries tend to have very little capital while wealthy ones have a lot of capital. Because of diminishing marginal productivity of capital, a unit of capital in a poor country won't add much to the country's wealth. But that same unit of capital in a poor country would add a great deal to that country's wealth. Thus the wealth of each country will converge over time.

14. The founder of public choice, Nobel laureate James Buchanan, described it as "politics without romance." Why?

- a. Because it assumes politicians aren't benevolent.**
- b. Because it assumes government and businesses won't cooperate (they're not "in love" with each other).
- c. Because it assumes political actors are inherently evil.
- d. A & C
- e. None of the above

Public choice is not about how the political process, and the agents that are a part of it, are terrible people. It's about their incentives and how their incentives, not a desire to "do good", ultimately governs their behavior.

15. Which of the following is a zero-sum game?
- a. Soccer
 - b. War
 - c. Economic growth
 - d. A & B**
 - e. All of the above

As discussed in class, economic growth is a positive-sum game: all countries can grow. But in soccer and war, there must be a loser for there to be a winner; not everyone can win.

You could argue this is wrong, that soccer is a positive-sum game, too. While there must be a loser to have a winner, both sides enjoyed playing (that's why each decided to play in the first place) so the group as a whole comes out ahead.

You could also argue that war is actually a negative-sum game: the gains to the victor are less than the losses to the loser because so many lives were lost and resources destroyed (not to mention the opportunity cost!).

16. What does a point to the right of an economy's production possibilities frontier indicate?
- a. The economy can produce more of the good on the x-axis but no more of the good on the y-axis.
 - b. The economy can produce more of the good on the y-axis but no more of the good on the x-axis.
 - c. If the economy produced at that point, it would be allocatively efficient but not productively efficient.
 - d. If the economy produced at that point, it would be productively efficient but not allocatively efficient.
 - e. None of the above**

Such a point is not possible to produce at. It describes a level of X and a level of Y that the economy cannot produce at the same time.

17. In "Toward a Theory of Property Rights," Economist Harold Demsetz argued private property rights appear when the benefits of establishing such rights exceed the costs of establishing them. For example, city roads are not private property because the benefits of making them private are small (better maintenance and less traffic) compared to the logistical cost of denying non-owners their use. Yet

we discussed that the key reason poor countries have trouble developing is the lack of private property. Economic growth in these areas would be a huge benefit! What would explain this apparent contradiction?

- a. Poor countries have private property; the problem is that it's not legally recognized.
- b. While the benefits of society may be large, the costs to those who could make it easy to legally own that property are also large.
- c. While the benefits of society may be large, the benefits to those who could make it easy to legally own that property are relatively small.
- d. B & C
- e. **All of the above**

A tricky one. A is true because it's not as if there is no private property in developing countries. It's just not legally recognized. But people still find having informal private property is better than having none at all. These countries would be even poorer without it.

So why isn't it legal? Because what matters are the costs and benefits to the rule makers. They get to determine how easy it is to make something official; that's perfectly in line with Demsetz's argument. For private property to be officially recognized, the benefits of legalizing it must exceed the costs. Remember public choice! What are the incentives of these actors?

First: the benefits. As we discussed, these barriers to entry are helpful for the politically connected. They restrict competition and offer an opportunity to charge bribes. Make it easier to establish private property and you've robbed these powerful individuals an important perk.

Second: the costs. It would be very difficult to sift through the generations of customs and figure out exactly where the property lines are. Plus you'll have to get the public to trust the government again, which will be very hard to do.

18. Which concept explains why production possibilities frontiers are concave?
- a. **Diminishing marginal returns**
 - b. Absolute advantage
 - c. Law of one price
 - d. They're not; they are convex.
 - e. None of the above

No, they are concave. If one imagines an economy producing products on just one axis and starts to produce on the other axis, the first part of that

economy that switches production will have the comparative advantage in the new product. It will sacrifice the least.

These returns will be very high; they economy didn't have to sacrifice much to get a lot of the new thing. But as more and more of the new thing is made, more parts of the economy will have to switch and these parts will be increasingly good at making whatever is on the original axis.

19. Why does the balance of payments tell us about the trade deficit?
- a. Trade deficits occur within countries so it's not a big deal.
 - b. The trade deficit is half of the problem: the other half is the net loss of investment.
 - c. **The trade deficit is the result of distinguishing capital flows with the flow of goods and services.**
 - d. A & C
 - e. None of the above

The balance of payments argues that money that leaves a country in the form of a trade deficit comes back in the form of investment. It says something about the composition of an economy but nothing about its quality.

While option A is also true, one doesn't need the balance of payments to get there.

Part III: Short Answer. *Answer the following.*

16 points each.

20. Consider the following table of maximum capacities and determine which state has the comparative advantage in coal and in corn. For each good, also determine which state is the runner-up for comparative advantage.

| State | Coal (tons) | Corn (tons) |
|--------------------|-------------|-------------|
| Maryland (MD) | 100 | 175 |
| West Virginia (WV) | 120 | 30 |
| Virginia (VA) | 300 | 200 |
| Delaware (DE) | 3 | 15 |
| Pennsylvania (PA) | 250 | 750 |

Let's start with coal:

$$\begin{aligned} \text{MD: } & 175/100 = 1.75 \text{ corn} \\ \text{WV: } & 30/120 = 0.25 \text{ corn} \\ \text{VA: } & 200/300 = 0.67 \text{ corn} \end{aligned}$$

$$\begin{aligned} \text{DE: } 15/3 &= 5.00 \text{ corn} \\ \text{PA: } 750/250 &= 3.00 \text{ corn} \end{aligned}$$

At a cost of just a quarter of a ton of corn per ton of coal, West Virginia has the comparative advantage in coal.

Second place is Virginia, with a cost of 0.67 tons.

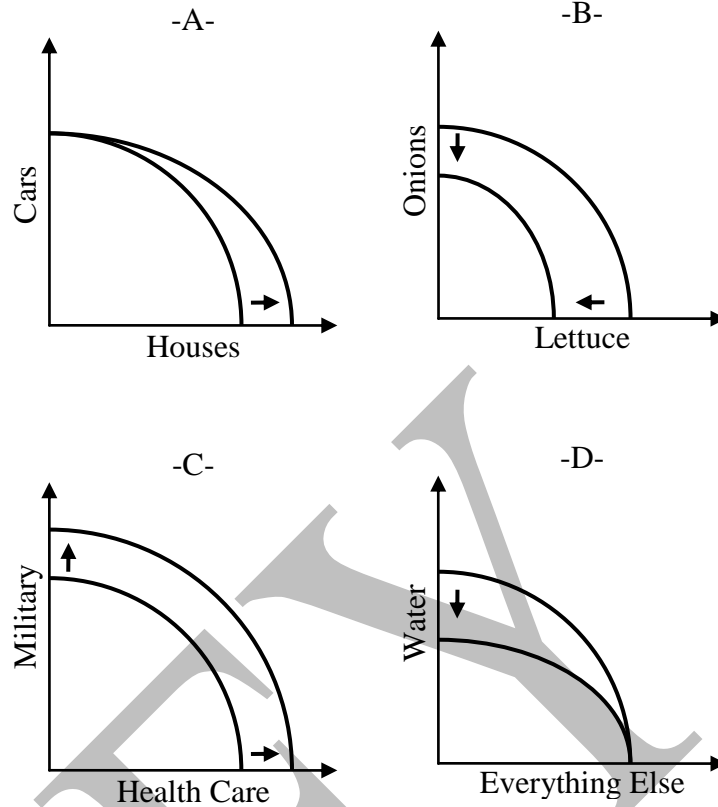
Corn:

$$\begin{aligned} \text{MD: } 100/175 &= 0.57 \text{ corn} \\ \text{WV: } 120/30 &= 4.00 \text{ corn} \\ \text{VA: } 300/200 &= 1.50 \text{ corn} \\ \text{DE: } 3/15 &= 0.20 \text{ corn} \\ \text{PA: } 250/750 &= 0.33 \text{ corn} \end{aligned}$$

It only costs Delaware 0.20 tons of coal to get one ton of corn; Delaware has the comparative advantage in corn.

Second place is Pennsylvania at a cost of just 0.33 tons.

21. Using the provided diagrams, illustrate the effects of the following (4 points each).
- New technology makes it easier to harvest trees for lumber.
 - There's a terrible drought.
 - More people enter the country.
 - Poor pipes result in contaminated water.



- A. Because the economy can get more lumber, it can make more houses (which are mostly wood). But cars have no lumber in them; the maximum number of cars the economy can make doesn't change.
- B. A drought would reduce the maximum amount of lettuce and onions an economy could produce; the whole PPF shifts in.
- C. If there are more people in the country, maximum amounts of health care and military both increase.
- D. Contaminated water due to piping means the economy can't produce as much water as it used to. This shouldn't affect the maximum amount of other things, though. (To the extent that other things need water to be made would be captured in the fact that less water can be provided; the y-axis is untangled from the x-axis.)

22. Use the following information to construct a production possibilities frontier. Use the diagram provided, making sure to label each part of your production possibilities frontier. Be sure it's to scale!

| Kingdom | Food (tons) | Stone (tons) |
|----------------|-------------|--------------|
| The North | 10 | 50 |
| The Vale | 40 | 60 |
| The Reach | 80 | 80 |
| The Riverlands | 70 | 10 |

