

Econ 4545 Second Midterm, Fall 2017: multiple-choice part
Answer on scantron all in pencil. Indicate that this is Version 1.

1. Imagine that the U.S. government want to reduce CO2 emissions so increases the tax rates on only gasoline and diesel. This tax change could increase the amount of coal that is being burned, and could, in theory, increase the amount of CO2 emissions. (This multiple-choice is based on one of the essay questions on last-year's second midterm.)
 - A) Incorrect
 - B) Correct

2. Policy A will ban all tobacco products in the U.S. Previous research has determined that the CV for Policy A varies in the U.S. population from a low of -\$100 to a high of \$100. You ask a 100 randomly selected Americans if they would pay \$20 to invoke Policy A and 40% vote yes. For sure, the average CV is **larger** than:
(Don't forget that if two numbers are negative, the one closer to zero has a larger value.)
(Choose the answer that is both correct and most informative.)
 - A) -\$50
 - B) **-\$60**
 - C) -\$100
 - D) 0

The lower-bound estimate is $-.55 (.6(-100)+.4(20))=-\55 (which is not one of the alternatives. So, what to do? We cannot say the minimum is at least -\$50. But it is at least -\$60

I was pleased that so many of you got this one correct.

3. For a market commodity ____ is exogenous and quantity is _____. For a nonmarket commodity ____ is exogenous and ____ is endogenous. (choose the best fill-ins)
 - A) price, exogenous, price, quantity
 - B) price, endogenous, price, value
 - C) price, endogenous, quantity, price
 - D) price, endogenous, quantity, value

I have no idea why so many of you got this wrong. There are the definitions of market and non-market commodities, and one of the first things we discussed when we started the section on non-market valuation.

4. According to U.S. law, damages from an environmental injury are
- A) Willingness to pay: what those injured would pay to restore the resource to its pre-injury state.
 - B) Willingness to pay: what those injured would have to be compensated to agree to not restore the environmental resource to its pre-injury state
 - C) Willingness to accept: what those injured would pay to restore the environmental resource to its pre-injury state
 - D) Willingness to accept: what those injured would have to be compensated to agree to not restore the environmental resource to its pre-injury state
5. The fact that catalytic converters catalyze NO_x, CO, and HC emissions into water and CO₂ is an example of materials balance in practice.
- A) Incorrect
 - B) Correct
6. You are an expert at estimating use values. You used to work for the EPA but that is over: the agency was eliminated in 2018. The Donald owns a big swamp in Florida; he is going to drain half the swamp to build and sell 100 houses. He is trying to figure out whether to drain the other half to build a golf course. The golf course would be public (open to all who would pay the green's fees). Note that some people like swamps, and some do not, and some like golf, and some do not. Donald, of course, does not care about non-use values. So, he hires you to estimate the use-values associated with the development of the golf course. You and Donald correctly assume that the golf course will not affect wage rates. (Choose the answer that is both correct and most informative.)
- A) A travel-cost study could **fully** estimate the use values associated with the developing the land into a golf course. (4%)
 - B) Estimating the total use value associated with developing the course is complicated by the fact that some golfers would buy a house in the development if there is a course (to be close to a golf course), but other golfers will not, but still would play the course. (55%)
 - C) A hedonic property-value study could **fully** estimate the use values associated with developing the land into a golf course. (42%)

A travel-cost study would miss the use values that are capitalized into the land prices in the new development.

A hedonic property-value study would miss that the value implicit in the additional trips to the site because of the golf course.

In my mind B is a better answer than C, but one could argue C is correct, so you will be given credit for this question for either B or C. (and the same for the other version).

7. This question will be marked correct if you answer it, no matter how you answer it. Consider this set of multiple-choice question in terms of their content, difficulty, and number. Comparing this set of multiple-choice questions to the set on on the first midterm, this set is:
- A) Neither set did a good job of assessing my understanding of the material
 - B) Both sets did a reasonable job of assessing my understanding of the material
 - C) This set does a worse job of assessing my understanding of the material
 - D) This set is a better in terms of assessing my understanding of the material

Q7 **A (4, 16.67%)** **B (8, 33.33%)** **C (3, 12.50%)** **D (9, 37.50%)**

I was hoping for D. I guess our President would say I did a great job. Others might disagree.

8. Consider the statement, "Coasian bargaining, with no government intervention could achieve efficiency wrt vehicle emissions." Edward would most likely say
- A) Yes
 - B) Maybe
 - C) Unlikely
 - D) No way

First off, property right for the air on not well-defined, and to the extent that they are defined they are not owned by private individuals or firms. That is, neither you, me, nor anyone else, has the right to keep me, you, or anyone else, from using the air molecules that currently reside at the corner of Broadway and University.¹

Two: Hundreds of millions of people currently produce negative external effects in terms of vehicle emissions (but each only an insubstantial amount) and hundreds of millions of people are negatively affected by these emissions.

Coasian bargaining requires that all the places can identify each other, can identify each's contribution, and can all somehow get together to reach a low-cost private bargains/contracts as to who will do what.

9. Assume everyone prefers cleaner air. Imagine that the Snerd Corporation wants to start producing gubers, and their production of gubers will decrease air quality by some specific amount. What would the Snerd Corporation know if they only knew the sum of the EV's for this decrease in air quality?
- A) They would know how much people would have to be compensated to accept this reduction in air quality.
 - B) They would know how much people would pay to stop this reduction in air quality.

¹ In a moment the wind will disperse these molecules far and wide, so it would hard to keep which molecules you have the right to.

10. Consider our theory of location-choice, the theory that is the foundation of the hedonic technique. Assume that a small proportion of Boulder's population is deaf (they hear nothing). Assume all deaf people know sign language but most of the hearing do not. (Choose the answer that is both correct and most informative. WB=well-being.)
- A) Deaf people might get a bump in their WB by choosing, all else constant, not to live near the opera
 - B) Deaf people might get a bump in their WB by living, all else constant, where it is noisy.
 - C) All of the other answers are correct and seem reasonable.
 - D) Deaf people might get a bump in their WB by working, all else constant, in a noisy environment.
11. America is on the verge of electing a Democrat (Harvey W.) our next President. But you are gun-ho to elect Trump to a second term. Your willingness-to-accept Harvey as President is
- A) It depends, it: it could be either a compensating variation or an equivalent variation.
 - B) It is neither a compensating variation nor an equivalent variation.
 - C) an equivalent variation
 - D) a compensating variation
12. You do a referendum CVM survey for Project A (banning heavy-metal music). God tells you that no one has a WTP for Project A that is higher than \$40 (only poor young people listen to it). You survey 100 randomly-selected individuals and ask if they would pay \$20 to have heavy-metal music banned. 25% say yes. You then survey a different 100 randomly-selected individuals and ask them if they would pay \$40 to have it banned, and 5% say yes. (Choose the answer that is both correct and most informative.)
- A) Average WTP is no more than \$40
 - B) Average WTP is at least zero.
 - C) Average WTP is no more than a bit less than \$40

75% are between -infinity and \$19.99; 20% are between \$20 and \$399.99; and 5% are exactly \$40

The average WTP is at least -infinity (so we know nothing on that end)

The upper bound is $.75(19.99)+.2(39.99)+.5(40)$ = a little bit less than \$28.

So, I mucked up this question, because did the math in my head.

Given the way, I asked the question, it looks like A is correct, B is not Correct, and C would only be correct if \$28 was a little bit less than \$40.

So, because of my screwup, I will add 6% to everyone's score on this part of the exam.

13. The law that require vehicles to have catalytic converters, and the law that bans high-sulfur diesel fuel: (Choose the answer that is both correct and most informative.)
- A) are examples of environmental standards.
 - B) are examples of environmental incentives
 - C) both provide the same incentives as would a tax on that pollutant
14. We are on a path such that in fifty years, average global temperatures will be 5% higher than they are today. You have a WTP to not have temperatures rise. Your one-time WTP for temperatures to rise by $(5-x)$ % rather than 5% is $WTP(x)=x + \sqrt{x}$. (Note that $\sqrt{1}=1$, $\sqrt{2}=1.4$, $\sqrt{3}=1.7$, $\sqrt{4}=2$ and $\sqrt{5}=2.2$). Note that your WTP for $x=0$ is zero.
- You are asked on a referendum CVM question whether you would pay a one-time payment of \$5 to have temperatures rise by 2% rather than 5%. How would you vote? (Assume you would vote yes if your WTP for this reduction is greater than \$5)
- A) I would vote no
 - B) Not enough information is given to determine how I should vote.
 - C) I would vote yes
15. Consider the other question about deaf people. Why, all else constant, would a deaf person get a bump in WB if they worked in a noisy environment? (Choose the answer that is both correct and most reasonable.)
- A) Those who hear would never choose to work in a noisy environment.
 - B) Since noise is a disamenity for most people, all else constant, wages are higher in noisy work-environments.

16. If there was a mandate to reduce SO_x emissions for gas and diesel-powered vehicles, the auto and truck industry would lobby for a ban on high-sulfur fuels over other methods (e.g. a sulfur tax on emissions).
- A) Unlikely, but bans are never a cost-effective way to achieve a mandated reduction in SO_x emissions.
 - B) Likely, but bans are never a cost-effective way to achieve a mandated reduction in SO_x emissions.
 - C) Likely
 - D) Unlikely

Luke asked me about this in an email why auto manufacturers would like a ban on high-sulfur fuels. I answered to you all that sulfur mucks about engines so manufactures would prefer to not deal with that or trying to remove sulfur from emissions.

So, B or C (many of you chose B). But say a ban is never a cost-effective way to achieve a mandated reduction is too strong. What if the mandated reduction was to zero? What if the efficient amount of sulfur emissions was close to zero?

Answer Key

1. B
2. B
3. D
4. A
5. B
6. B
7. *(No Answer Provided)*
8. D
9. B
10. C
11. C
12. C
13. A
14. A
15. B
16. C