Spring, 2011 Environmental Economics Phil Graves
2nd Midterm, A EC4545 U. of Colorado

1) Which of the following is among the three types of environmental control costs that were discussed in Chapter 9 and in the class discussion of Box 1 of the 5-Box diagram?
a) Required add-on controls
b) Residuals impact on environmental quality (dispersion).
c) Process changes shifting toward less costly and more damaging inputs.
d) Costs of moving pollution from high damage locations to low damage locations.
e) Only a) and d) were among the costs discussed.

2) The hedonic method (e.g. property value studies or studies of wage differentials) is one approach to valuing environmental improvements. Which of the following is a true statement about this approach?
a) households must have poor perceptions of environmental damage and variations in environmental quality among locations.
b) one would expect rents to be higher in cleaner locations.
c) rent (or property value) variation and wage variation must be considered separately since they are alternative approaches.
d) one would expect wages to be higher in cleaner locations.
e) Only b) and d) are true.

3) In Box 1 of the 5 Box diagram, costs of environmental policy are evaluated. Which of the following is was argued to be true?
a) The dominant approach to environmental policy in the U.S. has been requiring siting requirements of major polluters.
b) Merely moving pollution around is always inefficient.
c) Requiring add-on control devices has been the dominant approach to environmental policy in the United States.
d) The economic incentive approach (pollution taxes or salable emission rights) offers the largest cost saving over other approaches when marginal costs of clean-up vary greatly among firms.
e) Both c) and d) are true.

4) Which, if any, of the following are true?
a) When accurately measured dollar benefits exceed dollar costs of a particular policy, we will always make society better off in dollar terms by adopting that policy, although concerns of equity could make such a policy undesirable.
b) Proper valuation of the environmental benefits that are captured by hedonic methods can be done in either the labor market or the land market separately.
c) Optimal environmental controls would generally be expected to cause the prices of goods whose production involves pollution to fall.
d) All of the statements are true.
e) None of the above is true.

5) In Box 5 of the 5-Box diagram, it was argued in class that environmental policy as practiced in the U.S.:
a) helps rich and poor equally, since we all breathe and drink the cleaner air and water.
b) helps those with above average income more than those with below average income.
c) helps those with below average income more than those with above average income.
d) demonstrates greater concern for other species than for humans.
e) Only b) and d) are true.

6) Which, if any, of the following is true of the Sum of Specific Damages (SSD) approach to evaluating the benefits of environmental policies?
a) SSD works best if the cause of damages is not perceived by households.
b) SSD has certain values attached to the physical effects of concern.
c) SSD has certain physical effects which are to be valued.
d) SSD should ideally attempt to value only a subset of health effects.
e) Only b) and c) are true of the Sum of Specific Damages approach.

7) Some discussion in class related to spatial impacts of environmental policy (Boxes 2 and 4). Which of the following best captures that discussion?
a) We don’t want to just move pollution around, we want to eliminate it.
b) Fortunately, there is very little variation in marginal damages over space; hence uniform policies can generally be employed without loss of efficiency.
c) Pollution should, on efficiency grounds, always be moved to where it does the least damage if the benefits exceed the costs of that movement.
d) Spatial variation in environmental policy is unfair to those in low-damage locations.
e) Both c) and d) capture important features of the spatial discussion.

8) For the hedonic method for valuing environmental improvements to work well, a number of conditions must hold. Which of the following is among those conditions?
a) households must have poor perceptions of environmental damage and variations in environmental quality among locations.
b) there must be fewer people desiring a location in a good environment than there are locations possessing good environments.
c) rent (or property value) variation and wage variation must be considered together.
d) there must be many bads, e.g. crime, that are omitted from the estimating equation and that are positively correlated with pollution.
e) Only b) and c) are among the conditions required the hedonic method to work well.

9) Assume that Boulder City Council members enact legislation that helps local firms but harms local residents. What can you most accurately say about what will happen to local wages and rents as a result of this legislation?
a) Rents and wages will both fall.
b) Rents and wages will both rise.
c) Rents will rise and wages will fall.
d) Wages will rise, but the affect on rents is ambiguous.
e) Rents will fall, but the affect on wages is ambiguous.

10) If households are able to accurately perceive variation in environmental quality, but are unaware of how much environmental quality benefits them, then the use value of environmental quality
a) will be over-valued with the hedonic method.
b) will be under-valued with the hedonic method.
c) will be valued in an unbiased measure with the hedonic method.
d) will be accurately captured, but non-use values could be higher.
e) Only c) and d) are true.

11) The biggest single worry discussed in class about the "Constructed Markets" approach to environmental valuation was that:
a) willingness-to-pay might be elicited rather than the desired environmental attitude.
b) it does not reflect intensity of wants.
c) perceptions of environmental values are too perfect under these approaches.
d) income variation of respondents would make the values vary too much.
e) none of the above was the biggest single concern about these approaches.

12) The travel cost method of valuing an environmental good might result in a bias that understates its value when
a) there are other environmental goods in the area being visited.
b) people have an inability to properly perceive the value of the environmental good
c) non-use values for the environmental good are large relative to use values.
d) gasoline rises in price causing fewer trips to an area.
e) All of the above could lead to understating the value.

13) It was argued in class that housing compensation for amenities and wage compensation for amenities should be added together because
a) people first pick a labor market on the basis of wages, later hunting for a house.
b) people first pick a house-type, later determining which labor market to buy in.
c) it would be irrational to consider moving to a place without looking at both wage rates and property values.
d) looking at either market separately will generally result in upward bias in valuing amenities, overstating their importance.
e) both c) and d) are correct.

14) In class, we discussed a difference between salable emission rights and pollution taxes, concluding that:
a) salable emission rights result in certain environmental outcomes, and a certain equilibrium price.
b) salable emission rights result in uncertain environmental outcomes, and an uncertain equilibrium price.
c) pollution taxes result in certain equilibrium price and certain environmental outcomes.
d) the ability to monitor emissions is critical to the ability to employ either salable emission rights or pollution taxes.
e) Only a) and c) reflect conclusions discussed in class.

15) Firm A has a cost of cleanup of \$30/ton of pollution and Firm B has a cost of cleanup of \$15/ton. These are the only two firms in a region to become subject to environmental regulation. Each firm has received rights to pollute 60% of last year’s pollution. What will happen?
a) Firm B will buy rights to pollute from Firm A.
b) Firm B will sell rights to pollute to Firm A.
c) Each of the two firms will clean up 40%, since no mutually beneficial trades can occur in this case.
d) Emission rights would sell for less than \$15/ton
e) None of the above are correct.

16) In the “baby certificate” example of population control (as with more general salable pollution rights), a central advantage over other control mechanisms was that:
a) any individual family could have as many children as they wished, if they are willing to pay the price of a baby certificate.
b) all individual families were limited to exactly two children, out of concerns of fairness.
c) the baby certificate is of no value to a possessor who does not wish to have a baby.
d) the equilibrium price would ensure that each family would have exactly two babies.
e) both a) and c) are correct.

17) Of the following problems associated with the use of voting as a way to determine environmental policy, which was argued to be of greatest importance?
a) The frequent occurrence of Voting Paradoxes (intransitive preferences) strengthening the power of the agenda setter.
b) Complex environmental referenda are likely to be poorly understood despite the rational voter's desire to be fully informed.
c) Voting fails to correctly reflect intensity of wants, since those with high benefits are unable to express those benefits effectively.
d) "Marginal" voter power leads to known efficiency bias harming the environment.
e) each of the preceding were argued to be of equal importance as problems with voting.

18) It was argued in class that the methods used in environmental economics to value benefits are best at ascertaining which of the following types of benefits:
a) preservation values
b) existence values.
c) bequest values.
d) other non-use values.
e) None of the above.

19) Which of the following methods have the best chance of working to reveal "preservation" values?
a) Sum of Specific Damages methods.
b) Hedonic methods.
c) Travel Cost methods.
d) Constructed markets.
d) Any of the above can reveal preservation values, with the choice among them being best determined by their respective cost.

20) Which of the following are among the concerns discussed in class about constructed markets (surveys and interviews)?
a) failure to reflect intensity of want.
b) damage perceptions must be poor for this method to work well.
c) multiple trip destinations.
d) revelation of environmental attitude rather than true WTP
e) b) and d) are among the concerns with this method discussed in class.

21) Which of the following is among the problems discussed in class with the use of the sum of specific damages approach to benefit estimation?
a) all damage categories should be included, not just a subset of health damages.
b) those damaged must have zero perceptions of damage cause.
c) values to be placed on the physical damages are uncertain.
d) physical damages are uncertain.
e) All of the above were brought up in class as potential problems SSD.

22) If a location has an amenity which is bad for firms relative to other locations other things equal, then one would expect, in equilibrium, to observe _________ wages and ________ rents in that location relative to other locations. Which answer properly fills in the blanks?
a) higher, higher.
b) higher, lower.
c) lower, higher.
d) lower, lower.
e) Impossible to say in this case.

23) If a location has an amenity which is bad for households relative to other locations other things equal, then one would expect, in equilibrium, to observe _________ wages and ________ rents in that location relative to other locations. Which answer properly fills in the blanks?
a) higher, higher.
b) higher, lower.
c) lower, higher.
d) lower, lower.
e) Impossible to say in this case.

24) From an economist's perspective the highest "quality-of-life" locations for households, other things equal, would be expected to have:
a) higher wages.
b) lower rents.
c) lower wages.
d) higher rents.
e) both c) and d).

25) The methods of valuing environmental benefits presume that decision-makers are interested in the accurate measurement of those benefits. We discussed concerns in class suggesting that decision-makers might wish to systematically ignore certain benefits or costs, due to:
a) faulty incentives due to political problems.
b) ignorance of decision-makers of the desires of their constituents.
c) faulty incentives due to jurisdictional problems.
d) political desires to preserve environmental assets for the future, rather than using them now.
e) both a) and c) were argued to be potential problems.

26) Which of the following descriptions of categories of goods corresponds to the class discussion of fisheries?
a) rivalrous and excludable.
b) non-rivalrous and excludable.
c) rivalrous and non-excludable.
d) non-rivalrous and non-excludable.
e) None of the above.

27) The central problem of fisheries collapse was seen in class to be:
a) the greed of mankind.
b) recent trends toward greater fish consumption for health benefits.
c) technological advance in fishing efficiency.
d) a missing market for fish scarcity value.
e) a) and b) together were seen as the central problems.

28) The economist, as compared to the environmentalist, is likely to prefer __________ people experiencing an environmental good (e.g. a wilderness area). What word(s) properly completes the sentence?
a) fewer.
b) more.
c) the same number of.
d) any of the above properly complete the sentence.

29) The economist, on efficiency grounds, would be most likely to recommend which of the following methods of rationing a scarce environmental amenity?
a) lottery
b) price
c) contest
d) queue
e) first, a contest to gauge interest, then a queue to see who is willing to wait longest.

30) In the Downward Economic-Environmental Spiral model, which of the following was assumed?
a) the global eco-system was assumed robust to pollution shocks.
b) assimilative capacity was zero.
c) exceeding assimilative capacity in the current period raised future assimilative capacity by stimulating growth in degrader populations.
d) exceeding assimilative capacity in the current period lowered future assimilative capacity by damaging degrader populations.
e) None of the above.

31) In the Downward Economic-Environmental Spiral model, it was (optimistically) assumed that:
a) assimilative capacity could never be exceeded.
b) humans “cared” about any biological effects from exceeding assimilative capacity.
c) the biological effects of exceeding assimilative capacity would not affect humanity.
d) there was no relationship between output and waste load.
e) none of the above.

32) Possible “offsets” to the implications of the Downward Economic-Environmental Spiral model discussed in class were:
a) the relationship between output and waste load could be improved (rotated downward).
b) assimilative capacity could be enhanced.
c) we might, in fact, currently be far below maximum sustainable output.
d) movement to eco-systems distant from human production could be undertaken.
e) only a), b), and c) above were among the offsets discussed.

33) The condition best characterizing the economists’ solution to how many to allow access to an environmental amenity (e.g. wilderness area) is:
a) let people in as long as the person entering has a positive value for the amenity.
b) let people in only to the point where they begin to have negative effects on others.
c) let people in as long as the value of their experience is at least as large as the aggregate harm they impose on others.
d) let people in who are willing to wait a length of time sufficiently long to ration the amenity to the proper number of people.
e) both b) and c), since they are equivalent.