

The exam totals to 20 points. Do all the questions.

1. True, False, Uncertain and Why. 1 point each.
  - a. Technology standards always cost less than technology based effluent standards, for the same amount of pollution abated.
  - b. If price is between the minimum of AVC and AC, then the firm will shutdown.
  - c. One reason to leave a river undammed is option value.\
  - d. Firms are likely to try and convince government officials to institute market-based or “polluter pays” policies (like an effluent tax or “cap and trade” permits) rather than “command-and-control” policies (like quotas or effluent standards) (You may assume that the government will implement some pollution control policy for sure)
  - e. Competitive firms choose their price so that price equals marginal cost.
2. A pollution control agency decides to control the pollution per unit output of an industry.
  - a. (3 pts) Use an isoquant and isocost diagram to show how much cost increases with a tax on clean air services versus how much cost increases with a limit on how much clean air services can be used. Tax and limit are set to consume the same amount of clean air.
  - b. (2pts) Using your diagram explain how the tax rate should be calculated so that the polluter consumes the same amount of clean air that she would under the limit system.
3. “In the long run, consumers pay the full cost of pollution control.” Use the model of the industry that has firms with U shaped cost curves to show why this is true.
  - a. (1 pt) Draw a diagram showing an industry in long run competitive equilibrium. Be sure to identify demand, short-run supply, long-run supply, and average cost.
  - b. (2pts) In your diagram for part a, why are firms content with their level of output? Why are firms content to remain in the industry and yet other firms do not wish to enter the industry?
  - c. (2 pts) Explain what a technology based effluent standard does to AC. Now use your diagram to find out what happens to price in the long run.
4. Write a short essay on the following: “The Bush administration did not enforce the Clean Air Act. Yet, because of allocation of responsibilities under the act to various other parts of government, the air did not markedly deteriorate.” A good essay will demonstrate some knowledge of both the clean air act and the material in the Barcott piece in the NYT magazine.