

Part I (70 points) - Multiple Choice: on a scantron mark the single best answer, 2 pts. each.

- 1) An increase in the price of Arco gasoline is likely to result in:
 - a. a rightward shift in the demand for hybrid automobiles.
 - b. a leftward shift in the demand curve for Arco's gas.
 - c. a rightward shift in the demand for large automobiles, a complement.
 - d. a leftward shift in the demand curves for other brands of gasoline.

- 2) All of the following, except one, will cause a shift in the demand curve for gasoline. Which will not?
 - a. A decline in the price of hybrid automobiles.
 - b. An increase in consumers' incomes.
 - c. A decrease in oil production due to war in the Middle East.
 - d. An increase in airline ticket prices.

- 3) In the short run the stock of machines and buildings is _____, but in the long run it is _____, with the result that the price elasticity of supply tends to be _____ in the long run.
 - a. variable; fixed; lower
 - b. variable; fixed; higher
 - c. fixed; variable; lower
 - d. fixed; variable; higher

- 4) If the supply curve of a product is relatively inelastic and the price of a complement to a product rises, equilibrium quantity will _____ and equilibrium price will _____, but equilibrium _____ will change proportionately more.
 - a. increase; increase; price
 - b. decrease; decrease; price
 - c. increase; increase; quantity
 - d. decrease; decrease; quantity

- 5) If the demand curve for a product is relatively inelastic and there is a rise in the price of an input used in the manufacture of the product, equilibrium quantity will _____, equilibrium price will _____, but equilibrium _____ will change proportionately more.
 - a. decrease; increase; price
 - b. increase; decrease; price
 - c. increase; decrease; quantity
 - d. decrease; increase; quantity

- 6) West-African cotton farmers are very upset about the subsidies the U.S. government pays to American cotton farmers. One reason for this could be that:
 - a. subsidized cotton from the United States has led to an increase in the demand for West-African cotton.
 - b. subsidized cotton from the United States has led to a global shortage of cotton.
 - c. subsidized cotton from the United States raises the world price of cotton.
 - d. subsidized cotton from the United States leads to global cotton surpluses and lower prices for West-African farmers.

- 7) Karen consumes gasoline and other goods. A new excise tax on gasoline raises gas prices. However, the government pays Karen an income subsidy which is just enough for her to stay on her original (pre-tax) indifference curve. Her new optimal consumption bundle will have:
- the same amount of both goods as before.
 - less gas and more of other goods.
 - less of other goods and more gas.
 - This question can't be answered, since some essential information is missing.
- 8) The Cozy Chair Company believes it can sell 20 chairs per day at \$200 per chair, or 30 chairs at \$150 per chair. Using the midpoint formula, you can calculate that the price elasticity of demand (to the nearest tenth) for Cozy Chairs is:
- 0.7.
 - 0.5.
 - 1.4.
 - 2.5.
 - 10.
- 9) Assuming its demand curve is linear, the Cozy Chair Company's marginal revenue of selling the 30th chair is:
- 5.
 - 50.
 - 150.
 - 200.
 - 500.
- 10) A recent news story reported that OPEC is expected to increase the supply of oil in summer. Summer is traditionally a time of increased demand for oil because of the many families driving and flying to vacation sites. What would be the combined effect of these two events on the summer market for gasoline?
- an increase in the price and the quantity
 - an increase in the price and an unpredictable change in the quantity
 - an unpredictable change in both the price and the quantity
 - an increase in the quantity and an unpredictable change in the price
- 11) In which of the market structures do all firms have to consider the responses of other firms?
- perfect competition
 - oligopoly
 - monopolistic competition
 - monopoly
- 12) For a monopolist:
- the demand curve will graph as a horizontal line because marginal revenue is constant.
 - the total revenue curve will graph as a downward-sloping line because marginal revenue is negative.
 - the marginal revenue curve lies above the demand curve because to sell more, price must be increased.
 - the total revenue curve will graph as a straight line because marginal revenue is constant.
 - the marginal revenue curve lies below the demand curve because to sell more, price must be reduced.
- 13) A natural monopoly occurs when:
- total costs decline throughout all output ranges.
 - average fixed costs of production decline throughout the relevant output range.
 - the average costs of production decline throughout the relevant output range.
 - fixed costs are larger than average costs throughout the relevant output range.
 - marginal revenue is horizontal throughout all output ranges.
- 14) When all firms coordinate their decisions so as to maximize their joint profits, we have a:
- cartel.
 - monopoly.
 - competitive oligopoly.
 - duopoly.

15) Chuckles the clown is the only clown in his part of town. If he charges \$250 per birthday party, he will have a party two times a month. If he charges \$225, he will have three, if he charges \$200 he will have four, and if he charges \$175 he will have 5 per month. The marginal revenue of the fourth party is:

- a. \$75. b. \$100. c. \$125. d. \$200. e. \$800.

16) Following up on #15, assume that Chuckles values his time and supplies at \$100 per party. He will therefore set his price at:

- a. \$100. b. \$175. c. \$200. d. \$225. e. \$250.

For questions 17-20: Although her product is illegal, Lola Slimeball operates her drug enterprise according to the sound business practices she learned in ECON 102 (that is, before she failed her final exam, dropped out of the university, and turned to crime). She has two sets of customers, experimenters and addicts, and she has no competitors for this particular nasty drug. The demand schedules for each customer market per day are listed below. Her marginal cost per dose is \$39.99 (you may round this to \$40 in your calculations). Her fixed costs are \$300 per day for the BMW with dark windows, the cellular phone, life insurance, and bribes. Assume that she makes her customers pay in ten dollar bills to reduce her carrying costs, and will not give change. (This table is for your convenience, and is not graded.)

Price	Experimenters			Addicts			Combined		
	Doses	Rev	MR	Doses	Rev	MR	Doses	Rev	MR
\$80	2	_____	_____	6	_____	_____	_____	_____	_____
\$70	4	_____	_____	8	_____	_____	_____	_____	_____
\$60	10	_____	_____	10	_____	_____	_____	_____	_____
\$50	20	_____	_____	12	_____	_____	_____	_____	_____
\$40	30	_____	_____	14	_____	_____	_____	_____	_____

17) First, assume that experimenters and addicts are unable to resell the dose to each other (say she makes them use it in front of her). What price will Lola charge experimenters per dose?

- a. \$80 b. \$70 c. \$60 d. \$50 e. \$40

18) Assuming that experimenters and addicts are unable to resell the dose to each other, what price will Lola charge addicts per dose?

- a. \$80 b. \$70 c. \$60 d. \$50 e. \$40

19) Now, assume instead that experimenters can easily resell the dose to addicts. What price will Lola charge experimenters per dose?

- a. \$80 b. \$70 c. \$60 d. \$50 e. \$40

20) Finally, assume that Lola's nasty drug is legalized and the market becomes competitive (using prices, not guns). Assuming that the fixed costs of dealers like Lola are no longer necessary, and the marginal cost per dose does not change, what price will Lola charge her customers per dose?

- a. \$80 b. \$70 c. \$60 d. \$50 e. \$40

21) The principal difficulty facing a cartel is that:

- a. each member has an incentive to cheat on the agreement.
 b. consumers do not like to purchase products from monopoly industries.
 c. it is impossible to determine the profit-maximizing level of output for its members.
 d. each member will have to spend time and money policing an agreement.

- 22) The prisoners' dilemma is a simple game in which:
- one party is made better off and another worse off by following independent self-interests.
 - both parties are made worse off by independently following their own self-interests.
 - both parties gain by independently following their own self-interests.
 - no one gains because each acts independently.
 - the gain of one participant will exceed the losses of the other participant if they act independently.
- 23) Assume that if either Coca-Cola or Pepsi cuts its price, the other firm will match the price cut to keep from losing market share, but if either raises its price then the other firm will keep its own price unchanged to gain market share. The outcome of this assumption is that:
- Both firms raise their prices.
 - Both firms cut their prices.
 - One firm cuts its price and the other doesn't.
 - Neither firm changes their prices.
- 24) If the price charged by a natural monopoly is set by a regulatory body such that it is equal to marginal cost:
- the level of output will not be high enough to satisfy all needs for the product.
 - the firm will not be producing efficiently.
 - the firm will be producing at an inefficient output level.
 - the firm will make a profit but it will not be able to maximize profits.
 - the firm will have to be subsidized since it will incur losses.
- 25) A binding price ceiling imposed on a competitive industry will _____, while a binding price ceiling imposed on a monopolistic industry is likely to _____.
- reduce marginal costs, increase average costs due to the higher administrative burden of this type of regulation.
 - reduce industry profits, increase industry profits.
 - reduce quantity-supplied, increase quantity-supplied.
 - reduce quantity-supplied, reduce quantity-demanded.
- 26) In 2000-2001, California experienced severe electricity shortages. Which of the following problems does not help explain those shortages?
- deregulation of the retail electricity market
 - government's role in setting price ceilings
 - prohibition of long-term contracts
 - monopoly power on the part of gas suppliers
 - rapidly growing consumer demand
- 27) In general, advertising will be profitable only if it:
- attracts customers for one-time purchases.
 - attracts repeat customers.
 - reduces the costs of production.
 - increases the marginal benefits from search.
- 28) Market failure is said to occur when:
- competition is based upon the premise of maximizing self-interest.
 - a disequilibrium condition exists.
 - goods are rationed only to those who are willing and able to pay.
 - the market process does not lead to an equality between social marginal costs and benefits.
 - individual marginal costs do not equal individual marginal values.

- 29) In an unregulated private market with many participants, the amount of a public good that is privately produced will be:
- Equal to the efficient quantity .
 - Greater than the efficient quantity.
 - Less than the efficient quantity.
 - The amount that maximizes the total cost of production.
- 30) To correct the market failure associated with public goods, governments usually:
- Provide the public good directly, paying for it out of tax revenues.
 - Rely on the invisible hand to solve the problem through voluntary trade.
 - Hold a lottery in which firms are randomly designated as the only supplier of the public good.
 - Use taxes or regulations to limit production of the public good.
- 31) A tax that rises less than in proportion to income is described as:
- progressive.
 - proportional.
 - regressive.
 - structural.
- 32) From 1960 to 2003, federal spending as a percentage of GDP:
- doubled.
 - tripled.
 - decreased.
 - remained about the same.
- 33) The economic argument for patent protection of life-saving drugs is that:
- government intervention may be necessary to enforce superior standards.
 - monopolization should always and everywhere be prevented.
 - a temporary monopoly provides an incentive that encourages research and innovation.
 - most new inventions are actually public goods.
- 34) A network externality occurs when:
- an externality follows an information network.
 - the value of the good to an individual rises when a large number of other people use that good.
 - any information good is produced.
 - a series of externalities results in an information good.
- 35) The QWERTY problem is a classic, although controversial, example of how:
- network effects can lead to the adoption of inferior standards.
 - network effects always lead to the adoption of superior standards.
 - standards are used to enforce network effects.
 - superior standards can be produced only at a higher marginal cost.

Part II (30 points) - Short Answer (words and graphs)

1) (8%) Assume that there are two countries, the USA and Mexico, each producing only two products, petroleum and consumer goods with the single input of labor under constant returns to scale. The USA has 150 (million) workers, and each can produce 1 unit of each product in a year (but not both at the same time!). Mexico has 50 (million) workers, and these workers can each produce either 1 unit of petroleum or 0.25 units of consumer goods in a year.

- a. Graph the PPFs for both countries, with petroleum on the horizontal axis.
- b. Which country has the comparative advantage in which product?
- c. Which country has higher real incomes, and why?
- d. Assume that each country initially devoted 20% of its labor to the production of petroleum, and the rest to the production of consumer goods. Show that full specialization according to comparative advantage would increase total output.

2) (8%) Assume that the Organization of Petroleum Exporting Countries (OPEC) is considering their optimal production strategy. For simplicity, assume there are four equally-sized members of OPEC, and assume the average cost of production is constant for all members at \$20 per barrel. If all four members produce 1 million barrels each per day, the price of oil will rise to \$50. If only one member country raises its production to 2 million barrels per day, the price of oil will fall to \$45 per barrel. If all four member countries increase their production to 2 million barrels per day, the price will fall to \$30 per barrel.

- a. Create a payoff matrix for two member countries, where each country is considering whether to produce either 1 or 2 million barrels. Calculate each country's net profit under the four scenarios. Given that there are four members in our example, not two, what is the production level which maximizes joint profit? What is the production level which minimizes joint profit?
- b. Assume each country tries to maximize its net welfare in a one-play game, taking the actions of the other country as independent (or given). Is there a Nash or other stable equilibrium? Using the payoff matrix, explain why member countries have an incentive to collude, as well as an incentive to cheat.

3) (7%) A century or more ago, most Americans considered the country's natural resources (land, timber, minerals, animals, water, air, et cetera) to be limitless. Using a supply and demand diagram, explain how "nature" could be a free good even if the supply was finite and inelastic. How and why would this change over time? Once it is no longer a free good, what happens to the amount of available resources? What are society's alternatives?

4) (7%) Assume that the market price of gasoline is currently \$2.50 per gallon, but there is a negative consumption externality of \$3 per gallon. On a supply and demand diagram, show the deadweight loss to society from a free and competitive market in gasoline. Then suggest a corrective government policy, and show how this would affect the market price and quantity (via the demand and/or supply curve) on your diagram.

BONUS: In “Bye, Bye, Bison,” Chapter 26 of Miller, Benjamin, and North, there is a comparison of the quality of fishing streams in the United States, which are mostly publicly-owned and where anglers pay a flat fee for a fishing license, and fishing streams in the United Kingdom, which are mostly privately-owned. Based on your reading, in which country has the quality of fishing declined over the past thirty years, and in which country has it improved? Why? Explain.