

ECON 102 – Principles of Microeconomics

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Midterm Exam 1

N A M E

Part I (60%) - Multiple Choice: Use a scantron to mark the single best answer the following questions (2% each).

1. We have to make choices because:
 - A) we have unlimited income.
 - B) resources are scarce.
 - C) choices involve a trade-off.
 - D) of both b and c.

2. A friend comes up to you and offers to give you a free ticket to the local professional team's baseball game that night. You decide to attend the game. It takes five hours to go to the game and costs you \$15 for transportation. If you had not attended the game, you would have worked at your part-time job for \$8 an hour. What is the cost of you attending the game?
 - A) \$40
 - B) zero—The ticket is free.
 - C) \$55
 - D) \$65

3. Specialization and trade should lead to all of the following *except*:
 - A) a decrease in total economic output.
 - B) the exchange of goods and services in markets.
 - C) individuals learning specific skills and earning a salary.
 - D) higher living standards.

4. The tradeoff between equity and efficiency occurs because:
 - A) allocating resources fairly may cause inefficiency.
 - B) to ensure equity someone will be made worse off.
 - C) efficient allocation of resources may lead to an outcome that most people consider unfair.
 - D) of all of the above.

5. When building a model, economists:
 - A) ignore the facts, and instead try to determine what the facts should be.
 - B) simplify reality in order to highlight what really matters.
 - C) attempt to duplicate reality in all its complexity.
 - D) do all of the above

6. With trade, a country may:
 - A) find its production possibilities frontier will shift outward.
 - B) consume outside its production possibilities frontier.
 - C) consume inside its production possibilities frontier.
 - D) do none of the above.

7. Economists usually make the assumption that production is subject to increasing opportunity costs because:
 - A) individuals desire constantly increasing opportunities to make themselves better off.
 - B) higher production usually results in more inflation.
 - C) if production is efficient, it is not possible to increase the production of all goods simultaneously.
 - D) all resources are not equally suited to producing every good.

8. If they spend all night writing computer programs, Dylan can write 10 programs while Megan can write 5. If they spend all night making sunglasses, Dylan can make 6 while Megan can make 4. We know that:
 - A) Dylan's opportunity cost of writing programs and of making sunglasses is less than that of Megan.
 - B) Megan's opportunity cost of writing programs and of making sunglasses is less than that of Dylan.
 - C) Megan's opportunity cost of writing programs is less than that of Dylan.
 - D) Dylan's opportunity cost of writing programs is less than that of Megan.

9. The simplest circular-flow model shows the interaction between households and firms. In this model:
 - A) attention is focused on “real” flows of goods, services, and factors of production, but money flows between households and firms are ignored for simplicity.
 - B) firms supply goods and services to households which, in turn, supply factors of production to firms.
 - C) only barter transactions take place.
 - D) households and firms interact in the market for goods and services, but firms are the only participants in the factor markets.
10. A change in the demand for Luis's Pizza would not be caused by a change in the:
 - A) price of Humberto's Pizza.
 - B) buyers' income.
 - C) popularity of Luis's Pizza.
 - D) price of Luis's Pizza.
11. Suppose you manage a corner grocery store. If peanut butter is an inferior good, what do you suppose would happen to the price and quantity of peanut butter as incomes fall during an economic recession?
 - A) the price and quantity would both decrease
 - B) the price would decrease and the quantity increase
 - C) the price and quantity would both increase
 - D) the price would increase and the quantity decrease
12. Assume that corn is an input in the production of beef, but not in the production of pork. Further, beef and pork are substitutes. A decrease in the price of corn will:
 - A) decrease the supply of beef and decrease the demand for pork.
 - B) increase the supply of beef and decrease the demand for pork.
 - C) decrease the supply of beef and increase the demand for pork.
 - D) increase the supply of beef and increase the demand for pork.
13. Many public utilities burn oil to generate electricity. If the price of oil increases, we would expect:
 - A) there will be a shift to the left in the supply curve of electricity and a higher price for electricity.
 - B) there will be a shift to the right in the demand curve for oil and a higher price for electricity.
 - C) there will be a shift to the left in the demand curve for oil and a lower price for electricity.
 - D) there will be a shift to the right in the supply curve of electricity and a lower price for electricity.
14. One of the ways rent control is inefficient is that it leads to:
 - A) black markets.
 - B) lower-quality apartments.
 - C) high opportunity costs associated with wasted time.
 - D) all of the above.
15. If New York City had no medallion system for taxicabs, the price of a taxicab ride would:
 - A) decrease.
 - B) increase, but only slightly.
 - C) not change from its current level.
 - D) increase because of the higher safety hazards.
16. In Europe, the minimum wage has led to all of the following *except*:
 - A) European governments hiring the surplus of workers.
 - B) widespread evasion of the minimum wage law in the black labor market.
 - C) high unemployment, especially among young workers.
 - D) a proliferation of tiny companies in Italy.
17. By law, FICA (the Federal Insurance Contributions Act), a payroll tax, is collected equally from the employers and the employees. In reality:
 - A) the employees bear almost all the burden of the tax.
 - B) the employers bear almost all the burden of the tax.
 - C) it's impossible to determine who bears the burden of the tax.
 - D) the law works—both the employers and the employees bear half the burden of the tax.

18. 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 raises the world price of cotton.
 - B) subsidized cotton from the United States has led to an increase in the demand for West-African cotton.
 - C) subsidized cotton from the United States leads to global cotton surpluses and lower prices for West-African farmers.
 - D) subsidized cotton from the United States has led to a global shortage of cotton.
19. The publisher of an economics textbook finds that when the book's price is lowered from \$70 to \$60, sales rise from 10,000 to 15,000. Using the midpoint method, you can calculate that the price elasticity of demand is:
- A) 50%.
 - B) 2.6.
 - C) 500.
 - D) 3.5.
20. A major state university in the South recently raised tuition by 12%. An economics professor at this university asked his students, "Due to the increase in tuition, how many of you will transfer to another university?" One student out of about 300 said that he or she would transfer. Based on this information, the price elasticity of demand for education at this university is:
- A) highly elastic.
 - B) zero.
 - C) one.
 - D) highly inelastic.
21. If demand is elastic, then the:
- A) price effect dominates the quantity effect, and a fall in price will cause total revenue to rise.
 - B) price effect dominates the quantity effect, and an increase in price will cause total revenue to rise.
 - C) quantity effect dominates the price effect, and an increase in price causes total revenue to rise.
 - D) quantity effect dominates the price effect, and a decrease in price causes total revenue to rise.
22. Suppose you manage a convenience mart and are in charge of ordering products but do not set the price. The home office provides the prices. In your area, the income elasticity of demand for peanut butter is 0.5. Due to local factory closings, you expect local incomes to decrease by 20%, on average, in the next month. As a result, you should:
- A) stock 5% more peanut butter on the shelves.
 - B) stock 10% more peanut butter on the shelves.
 - C) stock 10% less peanut butter on the shelves.
 - D) stock 20% more peanut butter on the shelves.
23. The total producer surplus for a good can be calculated in all *except* one of the following ways. Which is the exception?
- A) the sum, for all sellers of the good, of the difference between what each seller receives and the minimum amount he or she is willing to accept for selling the good
 - B) the sum of the individual producer surpluses for all sellers of the good
 - C) the area below the supply curve for the good up to the quantity of the good sold
 - D) the area above the supply curve and below the price at which the good is being sold
24. Suppose apartments rent for \$1,600 in Boston. If the City of Boston forces each landlord to charge \$1,200, there will be:
- A) a shortage of new apartments in Boston.
 - B) an increase in consumer surplus for Bostonians who can find apartments for \$1,200.
 - C) a decrease in producer surplus for each landlord.
 - D) all of the above.

Consumer Surplus and *Phantom* Tickets

Student	Willingness to pay
Jessica	\$150
Jacquelyn	125
Brad	105
Robert	60
Gwen	25

25. Using the information in this table, if the price of a ticket to see *Phantom of the Opera* is \$50, then Robert's consumer surplus is:
- \$10.
 - \$60.
 - \$240.
 - \$50.
26. Using the information in this table, if the price of a ticket to see *Phantom of the Opera* is \$50, and there is no other market for tickets, then total consumer surplus for the five students is:
- \$240.
 - \$230.
 - \$100.
 - \$175.
27. Sarah's accountant tells her that she made a profit of \$43,000 running a pottery studio in Orlando. Sarah's husband—an economist—claims Sarah lost \$42,000 running her pottery studio. This means her husband is claiming that she incurred _____ in _____ costs.
- \$85,000; explicit
 - \$1,000; explicit
 - \$85,000; implicit
 - \$42,000; implicit
28. Tara notices that one hour of studying causes her economics grade to improve by 11 points, while the second hour increases her average by 7 points, the third hour yields a 4-point gain and the fourth hour only 1 point. This means that the marginal _____ of studying decreases over time.
- time
 - cost
 - benefit
 - opportunity cost
29. You have won the lottery and have been given the choice of receiving \$5 million today or \$10 million after 10 years. Assume that the interest rate remains fixed at 10% per year for the entire 10-year period. You should choose:
- \$10 million after 10 years, since this is more than if you saved \$5 million for 10 years at a 10% annual interest rate.
 - \$5 million today, since that is larger than the present value of \$10 million paid after 10 years.
 - \$5 million today, since \$5 million saved for 10 years at 10% interest would be worth more than \$10 million.
 - both b and c.
30. Your textbook costs \$120, and you can resell it in one year's time for \$60. If the interest rate is 5%, then the cost of the textbook (to the nearest dollar) in net present value terms is:
- \$66.
 - \$57.
 - \$63.
 - \$114.

Part II (40%) - Problems and Short Answers

1. (10%) Meditest, a small medical laboratory, employs only two technicians. The first, Mr. Abel, can analyze either 50 throat cultures or 10 DNA tests in a day, while the second, Ms. Brown, can analyze either 70 throat cultures or 20 DNA tests per day.

A) What are Abel and Brown's opportunity costs for a DNA test?

B) Who has the absolute advantage in each? Who has the comparative advantage?

C) With DNA tests on the horizontal axis, draw and clearly label the production possibilities curve for Meditest;

D) If the price charged for analyzing a throat culture is \$10 and the price of a distilled vaccine is \$40, what is the profit-maximizing output combination for Meditest? What is Meditest's maximum daily revenue?

2. (18%) Assume that the monthly quantity-demanded (Qd) and quantity-supplied (Qs) for automobile tune-ups in Reno are given in the following table:

<u>P</u>	<u>Qd</u>	<u>Qs</u>
\$100	0	45,000
\$95	10,000	40,000
\$90	20,000	35,000
\$85	30,000	30,000
\$80	40,000	25,000
\$75	50,000	20,000
\$70	60,000	15,000
\$65	70,000	10,000
\$60	80,000	5,000
\$55	80,000	0

A) In the space above, draw the supply and demand diagram, and show the free-market equilibrium price and quantity. Label carefully.

B) Assuming that the above demand and supply curves are continuous and linear, calculate consumer and producer surplus at the market-clearing price.

C) Calculate the own-price elasticity of both demand and supply at the market equilibrium. Which is more elastic, supply or demand?

D) Suppose the State of Nevada imposes a \$30 tax on automobile tune-ups. On your graph above, show the new equilibrium quantity, the price the buyers pay, and the after-tax price the producers receive.

E) Calculate how much consumer and producer surplus change as a result of the \$30 tax. How much revenue does the city government receive from the tax? Who pays more of the tax, buyers or sellers? What is the amount of the deadweight loss from the \$30 tax?

F) Compare the \$30 tax with an alternative \$15 tax. Which tax would lead to more tune-ups? Which tax would give the government more revenue? Which tax would cause more deadweight loss? Calculate the amounts, if possible.

3. (12%) Suppose a new method of ocean fishing makes it possible to double the catch with current resources. Use supply and demand to answer the following. Label your graph and explain your answer.

A) How would this affect the current product market for fish at the supermarket?

B) How would this affect the market for tartar sauce? Why?

C) Assume that property rights to ocean fish are held in common, and individual fishing boats are not restricted in their catch. How would the new technology affect the market for fish at the supermarket in the future? Why?

BONUS QUESTION [from Miller, Benjamin, and North., chapter six]:

Evaluate the following statement: “Although taxpayers foot the bill for federal water sold to farmers at subsidized prices [one example in chapter six of Miller, et al., found that farmers paid only 2% of the cost of delivering their water], they also eat the crops grown with that water. Because the crops are cheaper due to the subsidized water, taxpayers get back exactly what they put in, so there is no waste from having subsidized water for farmers.” Would you give the author of this quote an A or F in economics? Explain.