

Economics 101  
Professor Brown  
May 7, 2004

# Final Exam

## Early Version

Please do not open this exam until instructed to do so. All 40 questions are multiple choice, to be answered on the bubble sheet provided. Please use a number two pencil on the bubble sheet. Fill in your answers completely.

You may write on the exam question sheet, but anything you write on this exam will not be graded. **You may keep this exam booklet; please hand in your scantron sheet only.**

Please... no calculators or scratch paper. If you have a question, please raise your hand and a proctor will assist you.

On the bubble sheet, please be sure to include your name, ID number, section number (special codes ABC), and the correct version number of your exam (found at the top of this page) in special codes DE.

You have 120 minutes to complete this exam.

Good luck and have a great summer!

		Shirley	
		L	R
Laverne	U	(5,11)	(100,9)
	D	(4,100)	(99,99)

- 1) The Nash equilibrium of the preceding game is:
- {U, L} and Laverne has a dominant strategy to play Down.
  - {U, L} and each player has a dominant strategy.
  - {D, R} and there are no dominant strategies.
  - {D, R} and both players have dominant strategies.
  - {U, L} and there are no dominant strategies.

		Scrooge		
		L	C	R
The Grinch	T	(-4, 6)	(2,x)	(1,8)
	M	(0,0)	(5,1)	(4,y)
	B	(10,-4)	(4,-5)	(8,14)

- 2) In the preceding game, what must the variables  $x$  and  $y$  satisfy in order for {M, C} to be a Nash equilibrium?
- $y$  must be less than or equal to 1.  $x$  must be less than 1.
  - $y$  must be less than or equal to 5.  $x$  may take any value.
  - $y$  must be less than or equal to 1.  $x$  may take any value.
  - $y$  must be less than or equal to 0.  $x$  must be less than 1.
  - $y$  must be less than or equal to 0.  $x$  may take any value.

3. When  $y=14$ , which pairs of strategies constitute (the) Nash Equilibria(um) of the above game?

- a. (M,C) only
- b. (M,C) and (B,R) only
- c. (M,C) and (T,R) only
- d. All of the equilibria cannot be determined without more information on the value of  $x$ .

4. The Nash Equilibrium (Equilibria) of the game represented below is (are)

	L	C	R
T	(0,4)	(4,0)	(5,3)
M	(4,0)	(0,4)	(5,3)
B	(3,5)	(3,5)	(6,6)

- a. (B,L)
- b. (T,R)
- c. (M,C)
- d. (B,R)
- e. c and d

Use the following information to solve the next 4 questions about a monopolistic market.

The demand for a good is given by:  $P = 500 - Q$ .

A monopolist's costs are given by:  $TC = 10,000 + 100Q$ .

5. Suppose a single price monopolist controls the market for this good. The monopolist's optimal price and quantity choice is:

- a)  $P^M = \$300$ ,  $Q^M = 300$ .
- b)  $P^M = \$400$ ,  $Q^M = 400$ .
- c)  $P^M = \$300$ ,  $Q^M = 200$ .
- d)  $P^M = \$400$ ,  $Q^M = 200$ .
- e)  $P^M = \$200$ ,  $Q^M = 300$ .

6. Suppose the city government auctions off a license to be the single-price monopoly provider of this good. What is the most you expect a firm to be willing to pay for the license?

- a) \$30,000.
- b) \$10,000.
- c) \$40,000.
- d) \$15,000.

7. The deadweight loss from the monopoly is:
- \$40,000.
  - \$30,000.
  - \$20,000.
  - \$15,000.
8. Now suppose that the market for this good is controlled by a perfectly price discriminating monopolist. What are the perfectly price discriminating monopolist's profits?
- \$30,000.
  - \$30,000.
  - \$160,000.
  - \$80,000.
9. A natural monopoly occurs when
- the product is sold in its natural state (such as water or diamonds).
  - there are economies of scale over the relevant range of output.
  - the firm is characterized by a rising marginal cost curve.
  - production requires the use of free natural resources, such as water or air.
10. When a firm operates under conditions of monopoly, its price is
- not constrained.
  - constrained by marginal cost.
  - constrained by demand.
  - constrained only by its social agenda.
11. For a single-price, profit-maximizing monopolist,
- $P > MR = MC$ .
  - $P = MR = MC$ .
  - $P > MR > MC$ .
  - $MR < MC < P$ .
12. The key difference between a competitive firm and a monopoly firm is the ability to select
- the price of its output.
  - the level of competition in the market.
  - the level of production.
  - inputs in the production process.
  - all of the above.

13. Assuming that demand is linear, the marginal revenue curve for a perfectly price discriminating monopoly \_\_\_\_\_, and the marginal revenue curve for a single price monopolist \_\_\_\_\_.

- a) Coincides with the demand curve; is flatter than the demand curve.
- b) Is steeper than the demand curve; coincides with the demand curve.
- c) Is steeper than the demand curve; is exactly twice as steep as the demand curve.
- d) Coincides with the demand curve; is exactly twice as flat as the demand curve.
- e) Coincides with the demand curve; is exactly twice as steep as the demand curve.

14. Which one of the following is true in both perfect competition and monopoly?

- a)  $P = MC$
- b)  $P = TC$
- c)  $MC = MR$
- d)  $P = AVC$
- e)  $MR = ATC$

15. A perfectly competitive market is \_\_\_\_\_ efficient than a single price monopoly, and a single price monopoly is \_\_\_\_\_ efficient than a monopoly that perfectly price discriminates.

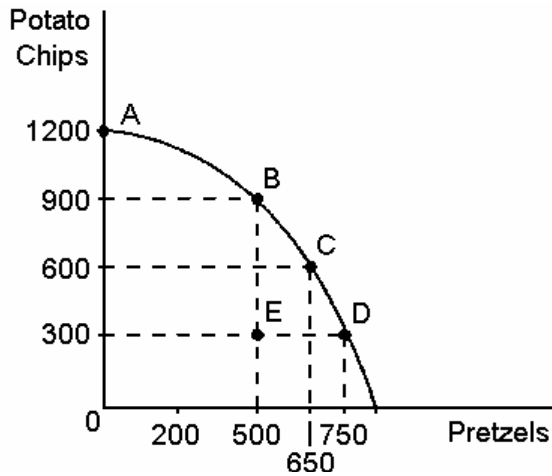
- a) more, more.
- b) less, more.
- c) more, neither more nor less.
- d) more, less.
- e) less, less

16. Dell and Gateway are selling identical desktop PCs. Market demand for the desktop PCs is given by  $Q_d = 50 - P$ . Dell and Gateway both have fixed marginal costs per computer of 10. Suppose Dell and Gateway are the only producers of desktop PCs and they compete by choosing prices. What price does Dell charge? What price does Gateway charge? How many desktop computers are bought & sold in total in the market?

- a. 20, 30, 40
- b. 10, 10, 40
- c. 10, 20, 20
- d. 20, 20, 20

17. Now suppose that, in a market identical to the one described above, Dell's marginal cost of producing a desktop is 20. What price does Gateway charge in equilibrium? How many computers does Gateway sell to the market?

- a. 20, 15
- b. 10, 15
- c. 19.99, 30.01
- d. 19.99, 15.01



18. In the production possibilities frontier above, what is the opportunity cost to society of the movement from point C to point B?

- a) 750 pretzels
- b) 500 pretzels
- c) 250 pretzels
- d) 150 pretzels
- e) 650 pretzels

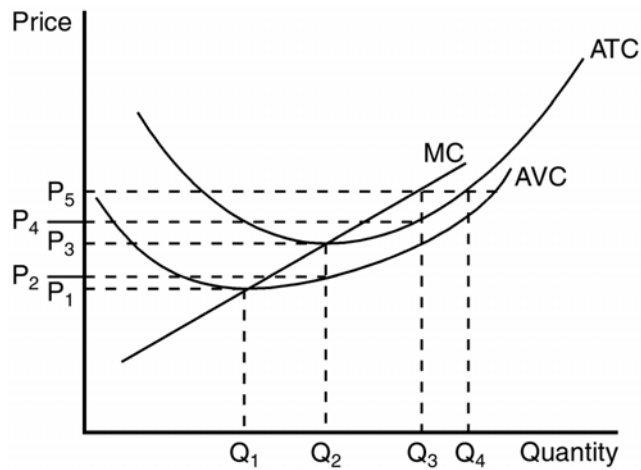
19. If additional units of a good could be produced at a constant opportunity cost, the production possibility frontier would be

- a) bowed outward.
- b) bowed inward.
- c) positively sloped.
- d) horizontal.
- e) None of the above

20. If people buy less of good 1 when the price of good 2 falls, these goods are

- a) Complements.
- b) Substitutes.
- c) Giffen goods.
- d) Inferior goods.
- e) None of the above.

The figure below depicts the cost structure of a firm in a competitive market. Use the figure to answer questions 86 through 88.



21. When market price is  $P_5$ , a profit-maximizing firm's profits can be represented by the area
- $P_5 \times Q_3$ .
  - $(P_5 - P_3) \times Q_2$ .
  - $(P_5 - P_4) \times Q_3$ .
  - When market price is  $P_5$  there are no profits.
22. Firms would be encouraged to enter this market for all prices that exceed
- $P_1$ .
  - $P_2$ .
  - $P_3$ .
  - None of the above are correct.

For the next two questions, consider the following information concerning potential crop outputs in two states. Figures listed are in units of output.

	Soybeans	Sugarcane
Louisiana	X	600
Mississippi	50	150

23. At which of the following values of X will Louisiana have a comparative advantage in Sugarcane output?

- a) 99
- b) 100
- c) 149
- d) 199
- e) all of the above

24. Assume X is 200. Which of the following statements is correct?

- a) Mississippi has a comparative advantage in Soybean output.
- b) Louisiana has a comparative advantage in Soybean output.
- c) Louisiana has an absolute advantage in both types of output.
- d) Neither state has a comparative advantage in either type of output.
- e) c & d

25. The combination of two goods a consumer chooses depends on

- a) her demand and her supply.
- b) her preferences and her demand.
- c) her budget constraint and her preferences.
- d) her budget constraint and her supply.
- e) her preferences and her supply

26. An optimizing consumer will select a consumption bundle in which the

- a) marginal rate of substitution is equal to income.
- b) marginal rate of substitution is equal to the relative price.
- c) ratio of expenditure shares equals the marginal rate of substitution.
- d) utility exceeds price.
- e) marginal rate of substitution is equal to the utility.

The next three questions consider the market for cigars, where the market demand is given by

$Q_D = 60 - 2P$  and the market supply is given by  $Q_S = P$ .

27. The market equilibrium price and quantity of cigars is:

- a)  $P^* = \$30$ ,  $Q^* = 20$ .
- b)  $P^* = \$20$ ,  $Q^* = 20$ .
- c)  $P^* = \$60$ ,  $Q^* = 60$ .
- d)  $P^* = \$10$ ,  $Q^* = 10$ .
- e)  $P^* = \$30$ ,  $Q^* = 40$ .

28. If the government imposed a price floor of \$25,

- a) a surplus of 30 cigars would result.
- b) a shortage of 30 cigars would result.
- c) a surplus of 15 cigars would result.
- d) a shortage of 15 cigars would result.
- e) the price floor would have no effect on the market.

29. Now suppose that the government introduced a unit tax of \$15 per cigar on sellers, instead of the price floor. The after tax equilibrium price and quantity of cigars would be:

- a)  $P^* = \$23$ ,  $Q^* = 15$ .
- b)  $P^* = \$15$ ,  $Q^* = 10$ .
- c)  $P^* = \$20$ ,  $Q^* = 20$ .
- d)  $P^* = \$22$ ,  $Q^* = 15$ .
- e)  $P^* = \$25$ ,  $Q^* = 10$ .

30. A public good is best defined as:

- a) Non-excludable.
- b) Non-rival.
- c) Excludable but Non-Rival.
- d) Non-excludable but Rival.
- e) Non-excludable and Non-rival.

31. What will happen in the rice market if buyers are expecting higher prices in the near future?

- a) The demand for rice will increase.
- b) The demand for rice will decrease.
- c) The demand for rice will be unaffected.
- d) The supply of rice will increase.
- e) The supply of rice will decrease in anticipation of these prices.

32. Suppose that the price of product X is reduced from \$120 to \$100 and, as a result, the quantity of X demanded increases from 200 to 240. Using the midpoint method, the price elasticity of demand for X in the given price range is,

- a) 0.5
- b) 1
- c) 1.33
- d) 1.5
- e) 2

33. For goods with a positive externality, the competitive market will generally produce \_\_\_\_\_ of the good. For goods with a negative externality, the competitive market will generally produce \_\_\_\_\_ of the good. Positive externalities can often be remedied with a \_\_\_\_\_, while negative ones can be remedied with a \_\_\_\_\_.

- a) Too much; too little; subsidy; tax.
- b) Too little; too much; subsidy; tax.
- c) Too much; too little; tax; subsidy.
- d) Too much; too little; tax, subsidy.
- e) None of the above.

34. Domestic consumers' demand for steel in country A is given by  $Q_D = 100 - 2P$ . Domestic producers' supply of steel is  $Q_S = 2P$ . Suppose the world price of steel is \$10. When country A imports steel from the rest of the world, what is country A's gain from trade in terms of total surplus?

- a) \$100
- b) \$200
- c) \$450
- d) \$625
- e) \$1600

35. Members of which of the following age groups most often live in poverty in the U.S.?

- a. Children under 16
- b. 18-24 year olds
- c. Retirees
- d. 40-50 year olds
- e. Poverty status is uncorrelated with age in the U.S.

36. Families in the lowest quintile of the U.S. family income distribution in 1998 enjoyed what percentage of total 1998 U.S. income?

- a. 20 percent
- b. 12.7 percent
- c. 47.3 percent
- d. 4.2 percent
- e. the cash income of lowest-quintile earners has not been measured

37. In the market for low-skilled workers' labor hours, demand for worker hours is  $H_D = 10 - w$ . Supply of worker hours is  $H_S = w$ . What are the equilibrium wage, hours worked and workers' surplus from participating in the market?

- a.  $w = 4, H = 4$ , workers' surplus = 16
- b.  $w = 5, H = 5$ , workers' surplus = 12.5
- c.  $w = 4, H = 4$ , workers' surplus = 8
- d.  $w = 5, H = 5$ , workers' surplus = 25
- e.  $w = 3, H = 5$ , workers' surplus = 15

38. The government imposes a minimum wage of \$6/hour in the above labor market. What is the surplus gained by workers who remain employed after the minimum wage is imposed? What is the surplus lost by workers who are fired when the minimum wage is imposed? Is total surplus to low-skilled workers in this market increased or decreased by the minimum wage?

- a. gain = 4, loss = 5, total worker surplus is decreased
- b. gain = 8, loss = 1, total worker surplus is increased
- c. gain = 4, loss =  $\frac{1}{2}$ , total worker surplus is increased
- d. gain = 4, loss = 1, total worker surplus is increased
- e. gain = 0, loss = 0, total worker surplus is unchanged

39. Hiram consumes food and \$s worth of all other goods. He has \$6000 of his own money to spend this year. If he had \$7000 and no food stamps for the year, he would prefer to spend \$900 on food and \$6100 on all other goods. Assuming more is better, which of the following bundles of cash and in-kind transfers from the government would make Hiram strictly happier this year than a transfer of (i) food stamps redeemable for \$1000 of food and (ii) \$0 of cash?

- a. \$10,000 cash, \$0 food stamps
- b. \$1000 cash, \$0 food stamps
- c. \$0 cash, \$900 food stamps
- d. a and b
- e. a, b and c

40. Miette and Ein sell term papers to UW students. Each term paper is unique, to avoid detection. No other potential sellers are able to compete in this market, because Miette and Ein have extremely low costs of time relative to all other potential term paper writers. Further, their term papers are of homogeneous quality. Miette's marginal cost of one term paper is \$10 in supplies and foregone leisure. Ein's marginal cost of one term paper is \$14. If Miette could price as a monopoly, she would set  $P = \$15$ . If Ein could price as a monopoly, he would set  $P = \$17$ . Which of the following describes the Nash equilibrium of the price competition between Miette and Ein?

- a. Miette and Ein split the market and the price is \$14.
- b. Ein controls the market and the price is \$9.99.
- c. Miette and Ein split the market and the price is \$10.
- d. Miette controls the market and the price is \$13.99.
- e. Miette controls the market and the price is \$12.99.