

Test 3 – Econ 3144  
Spring 2012 – Dr. Rupp  
25 Multiple Choice Questions (66 points)  
2 Discussion Questions (34 points)

Name \_\_\_\_\_

Signature \_\_\_\_\_

“I have neither given nor received aid on this exam”

Madison grows corn in Ayden. Assume that she is a price taker. The prevailing market price for a bushel of corn is \$6. Madison’s costs are given by:  $TC = 0.2q^2 + 2q + 4$ ,  $MC = 0.4q + 2$ ,  $VC = 0.2q^2 + 2q$  where  $q$  is the number of bushels of corn. Use this information to answer questions 1-4:

1. How much are fixed costs for Madison?
  - a. Cannot be determined
  - b. \$6
  - c. \$10
  - d. \$4
  - e. \$20
  
2. How many bushels of corn should Madison produce in the short-run?
  - a. 4
  - b. 10
  - c. 20
  - d. 5
  - e. 0 (since closed in the short-run)
  
3. How many bushels of corn should Madison produce in the long-run?
  - a. 4
  - b. 10
  - c. 20
  - d. 5
  - e. 0 (since closed in the long-run)
  
4. What is Madison’s profit in the short-run?
  - a. \$16
  - b. \$8.80
  - c. \$24
  - d. \$3.50
  - e. -\$4
  
5. There are six identical firms in the competitive t-shirt industry which have the same short-run marginal cost curve of the  $i^{th}$  firm is given by:  $SMC = 2 + 4Q_i$ . Find the market supply curve.
  - a.  $4 + 12Q_{mkt}$
  - b.  $2 + Q_{mkt}/3$
  - c.  $12 + 24Q_{mkt}$
  - d.  $2 + 3Q_{mkt}/2$
  - e.  $2 + 2Q_{mkt}/3$
  
6. Given the market supply curve that you just found in the previous question, use the following demand curve in this industry is:  $P = 42 - Q/3$  to find the equilibrium quantity.
  - a.  $Q = 10$
  - b.  $Q = 8$
  - c.  $Q = 40$
  - d.  $Q = 20$
  - e.  $Q = 30$

7. Given the market supply equation from the previous two questions, find the equilibrium price
- $P = \$32$
  - $P = \$38.67$
  - $P = \$28.67$
  - $P = \$22.33$
  - $P = \$39.33$
8. A perfectly competitive firm will close in the short run if what happens?
- Firm is losing money
  - Firm cannot pay all of its sunk cost
  - Firm cannot pay all of its variable cost
  - Firm cannot pay all of its fixed cost
9. What is certainty equivalence?
- The amount of utility a person receives with certainty
  - The expected value of a gamble
  - The reduction in total surplus from a monopolist
  - The willingness to pay some positive amount to avoid the gamble
10. A deck of 52 cards has 26 red and 26 black cards. Calculate the expected value of the game where you receive \$2 if you draw a black card and you pay \$1 if you draw a red card.
- \$0
  - \$1
  - \$1.50
  - \$0.50
  - \$0.50
11. Is the above game considered to be a “fair game”
- Yes.
  - No.
12. When you buy auto insurance from State Farm Insurance Company do you pay the “fair insurance” price?
- Yes
  - No
13. Which curve is the supply curve of a firm?
- Average fixed cost
  - Average total cost
  - Average variable cost
  - Economies of scope
  - Marginal cost
14. What is the allocative efficiency rule?
- Add workers until the MP begins to diminish
  - Add workers until the MP becomes negative
  - Always produce at the minimum of AVC
  - Produce the quantity where marginal benefit = marginal cost
  - Always produce at the minimum of ATC

15. Having insurance causes some individuals to be willing to take greater risks (i.e., those with life insurance maybe more willing to sky dive, those with car insurance might drive faster, etc.). What is the term for this phenomenon?
- Fair insurance
  - Unfair insurance
  - Certainty equivalence
  - Adverse selection
  - Moral hazard

16. Given the supply curve is:  $P = 4 + 2Q^s$  and demand curve is:  $P = 10 - Q$ . Find the consumer surplus.



- \$2
- \$4
- \$6
- \$8
- \$10

17. Given the supply curve is:  $P = 4 + 2Q^s$  and demand curve is:  $P = 13 - Q$ . Find the producer surplus.
- \$2
  - \$4
  - \$6
  - \$8
  - \$10

Use the following information to answer **questions 18-21**. A monopolist incurs \$6 in fixed costs. The marginal cost is \$2 per unit produced.

P	Q	TR	MR	TC	Profit
\$8	0				
7	1				
6	2				
5	3				
4	4				

18. Will this monopolist produce in the short run? If yes, how much does it produce?
- No.  $Q = 0$
  - 1
  - 2
  - 3
  - 4
19. What is the profit maximizing quantity for this monopolist in the **long run**?
- 0 (since closed in long run)
  - 1
  - 2
  - 3
  - 4

20. How much profit (or loss) does this monopolist incur in the **short run**?
- A) \$3
  - B) -\$2
  - C) -\$3
  - D) \$2
  - E) -\$6
21. How much profit (or loss) does this monopolist incur in the **long run**?
- A) \$0
  - B) -\$3
  - C) -\$2
  - D) \$2
  - E) \$3
22. Under perfect competition, if an industry is characterized by positive economic profits in the short run:
- A. firms will leave the market in the long-run and the short-run supply curve will shift outward.
  - B. firms will enter the market in the long-run and the short-run supply curve will shift outward.
  - C. firms will enter the market in the long-run and the short-run supply curve will shift inward.
  - D. firms will leave the market in the long-run and the short-run supply curve will shift inward.
23. Positive economic profits exist for a firm in the long-run if the price is above:
- A. long-run average cost
  - B. long-run marginal cost
  - C. long-run total cost
  - D. long-run variable cost
24. A natural monopoly
- A. is a monopoly in the production of raw materials
  - B. occurs when one firm can supply the entire market more cheaply than can a number of firms.
  - C. is one result of a patent.
  - D. necessarily involves inefficient pricing.
25. Why are monopolists said to be inefficient?
- A. their production process wastes more resources
  - B. they advertise too much
  - C. they stop producing a good even though marginal benefit exceeds marginal cost
  - D. they invest in too much capital stock
  - E. they produce where the marginal value product of labor exceeds marginal value product of capital

Extra Credit (+2 points)

26. What is the definition of a monopoly?

Discussion Question: (16 points question 1)

1. Suppose that there is a 10 percent chance that you wreck your \$20,000 car this year. If you wreck the car it is a complete loss. Your current wealth is \$40,000. There is a 90 percent chance of no car wreck.

a. Calculate the cost of actuarially fair insurance.

b. Assume utility has the form:  $U = \sqrt{\text{wealth}}$ . Calculate expected utility without insurance.

c. Assume utility has the form:  $U = \sqrt{\text{wealth}}$ . Calculate expected utility with fair insurance.

d. Use the utility graph to show that the individual will prefer fair insurance to no insurance.



2. A monopolist has the following demand curve:  $P = 200 - 2Q^d$  and total cost:  $TC = 20Q$  and marginal cost:  $MC = 20$ . (18 points)

A. Graph the demand curve below.



B. Find the profit maximizing quantity.

C. Find the profit maximizing price.

D. On the graph above, pin-stripe the producer surplus.

E. On the graph above, lightly shade the consumer surplus.

F. On the graph above, heavily shade the deadweight loss.