Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Econ 301

**Exam 04**

* There are 110 possible points on this exam. The test is out of 100.
* You have two hours to complete this exam, but you should be able to complete it in less than that
* Please turn off all cell phones and other electronic equipment.
* You are allowed a calculator for the exam. This calculator cannot be capable of storing equations. This calculator cannot double as a cell phone.
* Be sure to read all instructions and questions carefully.
* Remember to show all your work.
* Recall basic logic. “Water is wet” is a true statement. “Water is wet and leopards have stripes” is a false statement.
* *Please print clearly and neatly.*

**Part I: Multiple Choice.** *Choose the best answer to the following.*

3 points each.

1. Consider a demand curve: Q = 12 – P2. When P = 2, what is the elasticity of demand?
   1. -2, elastic
   2. -2, inelastic
   3. -0.5, elastic
   4. -0.5, inelastic
   5. None of the above
2. Which of the following is an example of a sunk cost?
3. Buying forested land which you intend to turn into a camping ground
4. Purchasing specialized equipment which can only be useful with your business model
5. Researching a new drug
6. B & C
7. None of the above
8. If a risk adverse person spends $10 to gamble, which of the following games could such a person be playing?
   1. If two coins are flipped and if both are heads, she’d win $16.
   2. If a six-sided die is rolled and on a “1” or a “2”, she’d win $30.
   3. If two four-sided dice are rolled and if both are “1”s or both are “2”s, then she’d win $80.
   4. B and C
   5. None of the above
9. If the marginal product of labor is 10 and the marginal product of capital is 5, what is the marginal rate of technical substitution?
   1. 0.5
   2. 2
   3. 15
   4. 50
   5. None of the above
10. Suppose you calculated an optimal bundle for an indifference curve. How would you know if it is a corner solution?
11. The bundle doesn’t pass through the individual demand curve.
12. The marginal rate of substitution doesn’t equal the ratio of prices.
13. The Engel Curve slopes down.
14. A & C
15. None of the above
16. If the supply side pays more of a tax than the demand side, what must be true?
17. The supply curve is more elastic than the demand curve
18. The supply curve is more inelastic than the demand curve
19. The supply side will receive more of a subsidy than the demand side
20. B & C
21. None of the above
22. If you make zero economic profit, what must be true?
    1. Your accounting profit equals your opportunity cost
    2. Your marginal cost equals your marginal revenue
    3. Your price equals your average total cost.
    4. A & C
    5. None of the above
23. What is the Herfindahl-Hirshman Index used to calculate?
    1. Deadweight loss
    2. Industry concentration
    3. Monopoly profits
    4. A & C
    5. None of the above
24. Where and what does the marginal cost curve always intersect?
    1. The minimum point of the average total cost curve
    2. The highest point of the marginal revenue curve
    3. Halfway through the demand curve
    4. B & C
    5. None of the above
25. Which of the following is an example of a Type I error?
26. Passing on a good investment
27. Letting the guilty go free
28. Approving a damaging drug
29. A & B
30. None of the above
31. In *The Use of Knowledge of Society*, Hayek emphasizes the importance of what kind of knowledge?
    1. Scientific
    2. Economic
    3. Local
    4. Entrepreneurial
    5. None of the above
32. Assume the demand curve for an industry is P = 1 – Q. Which of the following total cost functions would result in a natural monopoly?
    1. TC = 100 + Q
    2. TC = 10 + Q2
    3. TC = 1 + Q3
    4. A & B
    5. None of the above
33. Which of the following is ***not*** a requirement of perfection competition?
    1. Perfect information
    2. Large number of buyers and sellers
    3. Identical goods
    4. A & B
    5. None of the above
34. How are monopolies like monopsonies?
    1. Both result in higher-than-normal prices.
    2. Both create deadweight loss.
    3. Both generate a lower output.
    4. B & C
    5. None of the above

**Part II: True/False.** *Answer true or false and justify your answer.*

6 points each.

1. If a price-consumption curve slopes up, the good in question is a normal good.

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1. Regulatory capture describes a scenario when a government agency prioritizes private industry as the expense of the public interest.

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1. The short-run shutdown point is ultimately determined by a company’s sunk costs.

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**Part III: Short Answer.** *Answer the following.*

10 points each.

1. Suppose the demand curve for cigarettes is QD = 42 – 0.5PD and the supply curve for cigarettes is QS = 10 + 3PS. Consider an excise tax of 10. Calculate the price demanders pay, the price suppliers receive, the new quantity in this market, the deadweight loss, the government tax revenue. Remember to show all your work and print clearly and neatly.
2. Consider the following utility function: U = (XY)3; the following prices: Px = 3 and Py = 2; and the following income: I = 6. Using a Lagrangian, calculate how much of X and Y the consumer with this utility function determines. Remember to show all your work.
3. Consider the following cost function: Q = 2K0.75L0.25; the following prices: r = 4 and w = 1; and you wish to make 100 units. Using a Lagrangian, calculate how much of K and L will minimize the costs of production. Remember to show all your work.
4. Suppose the total cost function of a monopoly is TC = 60 + Q2 and its demand curve is P = 120 – Q. Find the profit maximizing quantity and the amount of profit or loss the firm is making. Use integration to determine the deadweight loss. Remember to show all your work.
5. Consider a perfectly competitive market and a firm with a TC = 50 + Q2 and a price of 10. How much revenue/loss is this firm making? What will price have to be so that there is zero economic profit?