Test 3 – Econ 5000   Name_____
Spring 2002 – Dr. Rupp
20 Multiple Choice questions (2 points each) & 6 Discussion questions (10 points each)
(Keep your answers covered. Bubble in name and id#)

1. A markets with only a few sellers, each offering a similar product, is called a
A) duopoly.
B) monopolistic competition.
C) monopoly.
D) oligopoly.
E) perfect competition.

2. Strategy X is said to be strictly dominated if
A) strategy X is never chosen.
B) strategy X is chosen less than 50 percent of the time.
C) another strategy Y exists that just as good or better than X.
D) another strategy Y exists that is always better than X.
E) strategy X is always preferred to all other strategies.

Matrix 1:

		Column		
		Left	Middle	Right
	Up	1,0	1,2	0,1
Row	Down	0,3	0,1	2,0

3. In matrix 1, identify the (pure strategy) equilibrium solution:

A) Up, Left
B) Up, Middle
C) Down, Left
D) Down, Right
E) No pure strategy equilibrium exists

4. In matrix 1, identify the strongest equilibrium concept used to solve this game:

A) Nash Equilibrium
B) Iterative Dominance Equilibrium
C) Dominant Strategy Equilibrium
D) Greenspan Equilibrium
E) No pure strategy equilibrium exists

5. Since 1986, what has happened to the average number of "effective competitors" on airline routes?

A) Increased
B) Decreased
C) Unchanged

6. Which traveler has a more inelastic demand for air travel?

A) Business traveler
B) Leisure traveler

Matrix 2:

		Column		
		Left	Center	Right
	Top	0,4	4,0	5,3
Row	Middle	4,0	0,4	5,3
	Bottom	3,5	3,5	6,6

7. In Matrix 2, identify the (pure strategy) equilibrium solution:

A) Top, Right
B) Middle, Left
C) Bottom, Center
D) Bottom, Right
E) No pure strategy equilibrium exists

8. In Matrix 2, identify the strongest equilibrium concept used to solve this game:
A) Nash Equilibrium
B) Iterative Dominance Equilibrium
C) Dominant Strategy Equilibrium
D) No pure strategy equilibrium exists

9. Since September 11th what have auto manufactures done to increase vehic le sales?
A) 0% interest promotion.
B) Began the advertising campaign: "Buy American-Made Cars".
C) Lowered prices.
D) Offered free oil changes and gas for a year on all new car purchases.
E) Extended warranties from 3 years (36,000 miles) to 5 years (60,000 miles).

10. What event caused Japanese market share in the U.S. to increase from 3% to 25% during the 1970s?
A) President John F. Kennedy assassination.
B) President Lyndon Johnson reduced import tariffs.
C) Vietnam War.
D) Iranian Revolution.
E) OPEC oil embargo.

11. The first inexpensive, mass produced automobile was the:
A) Buick LeSabre
B) Oldsmobile Cutlass
C) Volkswagen Beatle
D) Ford Model T
E) Dodge Duster

12. The duopoly model that assumes firms compete on price causing both firms to earn zero economic profits is:
A) Cartel model
B) Cournot model
C) Bertrand model
D) Nash model
E) Stackleberg model

A small town has two residents Tony and Jill that own drinking wells. Each week, Tony and Jill jointly decide how many gallons of water to pump and sell at whatever price the market will bear. Tony and Jill can pump as much water without cost; so, the marginal cost of water equals zero.

The weekly town demand schedule and total revenue schedule for water is in the table below.

Weekly Quantity (in gallons)	Price	Weekly Total Revenue (and Total Profit)
0	$12	$0
10	11	110
20	10	200
30	9	270
40	8	320
50	7	350
60	6	360
70	5	350
80	4	320
90	3	270
100	2	200
110	1	110
120	0	0

13. If Tony and Jill operate as a profit-maximizing monopoly in the market for water, what price will they charge to sell 80 gallons of water?

a. $2
b. $4
c. $6
d. $9
e. $12

14. If the market for water is perfectly competitive instead of monopolistic, how many total gallons of water would be produced?

a. 60
b. 70
c. 90
d. 110
e. 120

15. If Tony and Jill form a cartel, how many total gallons of water would be produced?

a. 50
b. 60
c. 70
d. 80
e. 110

16. Use the following game tree, Coke moves first and Pepsi moves second. Find the Sub-game Perfect equilibrium payoffs. (Coke's payoff is listed on top, Pepsi's payoff on bottom)

Coke

Positive   Negative

Pepsi   Pepsi

Positive   Negative   Positive   Negative
100   35   111   5
100   125   33   5

a. (100, 100)
b. (35, 125)
c. (111, 33)
d. (5, 5)

17. Using the game tree in question #16, find the Sub-game Perfect equilibrium strategies:

a. (Positive, {Positive, Positive})
b. (Positive, {Positive, Negative})
c. (Positive, {Negative, Negative})
d. (Negative, {Negative, Positive})
e. (Negative, {Positive, Positive})

18. In the following game below: Player 1 makes the first decision: in or out. If Player 1 chooses "out" the game ends, if Player 1 chooses "in", then the game continues and Player 2 chooses: in or out. (The top payoff is for Player 1 and the bottom payoff is for Player 2.) Find the sub-game perfect equilibrium payoff for this game:

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Player 1-----in-----Player 2---------in------Player 1----------in--------Player 2-----in-------
       |              |                      |                  |              |
      out            out                    out                out            |
       |              |                      |                  |              |
       4              3                      8                  6             16
       2              6                      8                  12            8
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a. (4, 2)
b. (3, 6)
c. (8, 8)
d. (6, 12)
e. (16, 8)

19. Many examples of predatory pricing were discussed in class and presented in the textbook. Which of the following firms has not been accused of predatory pricing:

a. American Tobacco Company
b. Miller Brewing Company
c. Northwest Airlines
d. Standard Oil
e. Wal-Mart

20. In the following game the entrant: Litchfield Theaters is considering to enter Greenville to compete with the incumbent: Carmike12. Find the sub-game perfect equilibrium strategy (Litchfield's payoff is listed on top and Carmike's on bottom):

<div align="center">Litchfield Theaters</div>

Enter	Stay out

Carmike12

Lower Prices	Prices Unchanged	
-20	10	0
5	15	50

a. (Enter, Lower Prices)
b. (Enter, Prices Unchanged)
c. (Stay out, Lower Prices)
d. (Stay out, Prices Unchanged)

Discussion Questions.
1. Define the term "Nash Equilibrium."

2. Briefly explain how abolishing the Civil Aeronautics Board (between 1978-83) affected the airline industry.

3. Use game theory to explain why Chrysler, instead of the world's largest automaker (GM), introduced the minivan in 1983.

4. Explain the theory of "contestable" markets. Does the theory hold? Why or why not?

5. Find the mixed-strategy Nash equilibrium of the following game: (no credit if you don't show your work)

		Column	
		Left	Right
Row	Up	2,1	0,2
	Down	1,2	3,0

6. Given the demand curve: $P = 100 - Q$ and $MC = ATC = 10$. (No credit given if you don't show your work)

    a) Find the Cournot equilibrium quantities for firm 1 and firm 2.

    b) Find the Cournot equilibrium price.

    c) Find the Cournot equilibrium profits for firm 1 and firm 2.

I have neither given nor received aid on this examination_____.

                                                     (signature)