Test 3 – Econ 5000   Name_____
Spring 2004 – Dr. Rupp
42 Multiple Choice questions (2.5 points each)   Signature_____
                                                        "I have neither given nor received aid on this exam"

(Keep your answers covered. Bubble in name and id#)

1. Southwest and JetBlue are the only airlines that have continued to make profits since September 11th, 2001. What kind of flight network do these carriers use?
A) Hub-spoke.
B) Point-to-point.

2. United Airlines and US Airways both requested loan guarantees from the U.S. government. What did the government decide?
A) Both loan guarantee requests were rejected.
B) Both loan guarantee requests were approved.
C) The loan guarantee was approved for United Airlines and rejected for US Airways.
D) The loan guarantee was approved for US Airways and rejected for United Airlines.

Matrix 1:

		Column		
		X	Y	Z
	A	5, -2	-8, 4	0, 1
Row	B	7, 12	6, 2	1, 1
	C	1, 200	1, 2	0, 0

3. In matrix 1, identify the (pure strategy) equilibrium solution:
A) A, Y
B) B, X
C) B, Y
D) B, Z
E) C, X

4. In matrix 1, identify the **strongest** equilibrium concept used to solve this game:
A) Sub-game Perfect Equilibrium
B) Iterative Dominance Equilibrium
C) Dominant Strategy Equilibrium
D) Nash Equilibrium
E) Perfect equilibrium

5. The Wright Brothers were the first to fly (in Kitty Hawk, NC). What year was the inaugural flight?
A) 1776
B) 1864
C) 1903
D) 1919
E) 1953

6. Since deregulation, what has happened to carrier yields? (Yield = average ticket price / distance)
A) Increased
B) Decreased
C) Unchanged

Matrix 2:

		Column		
		X	Y	Z
	A	-4,-1	-6,-2	-1,-3
Row	B	-3,-8	-9,-1	-2,-1
	C	-1,-1	-3,-3	-3,-2

7. In Matrix 2, identify the (pure strategy) equilibrium solution:
A) A, X
B) B, Y
C) B, Z
D) C, X
E) C, Z

8. In Matrix 2, identify the *strongest* equilibrium concept used to solve this game:
A) Sub-game Perfect Equilibrium
B) Iterative Dominance Equilibrium
C) Dominant Strategy Equilibrium
D) Nash Equilibrium
E) Perfect equilibrium

9. In 1900, barriers to entry in the auto manufacturing business were
A) Minimal.
B) Substantial.

10. In the auto industry, which of the following is an example of a "transplant"?
A) A Japanese manager that works in the U.S.
B) A Japanese car that is manufactured in Japan, yet assembled in the U.S.
C) A Japanese car that is manufactured in Japan, yet sold in the U.S.
D) A Japanese car that is manufactured in Japan, yet sold by an American auto company.
E) A Japanese auto company that manufactures cars in the U.S.

11. Which firm is the most inefficient (takes the longest time to build a car)?
A) DiamlerChrysler
B) Ford
C) General Motors
D) Nissan
E) Toyota

12. In 1938, the Civil Aeronautics Board (CAB) was created. What was the purpose of CAB?
A) Ensure that all airlines satisfy existing safety standards.
B) Issue pilot licenses to those that complete the federal certification course.
C) Oversee flight-training schools.
D) Keep fares low for passengers.
E) Ensure the growth and profitability of the airline industry.

13. Boeing recently announced plans to launch a new commercial aircraft: 7E7. What does the "E" stand for?
a. Efficient
b. Electronic
c. Elegant
d. Enormous
e. Excellent

14. Given the demand curve: $P = 100 - 2Q$ and $MC = Q$ and $FC = 0$. If two firms (q_1 and q_2) form a cartel, what is the profit maximizing output for each firm to produce?
a. $q_1 = 10$, $q_2 = 10$
b. $q_1 = 12.5$, $q_2 = 12.5$
c. $q_1 = 15$, $q_2 = 15$
d. $q_1 = 20$, $q_2 = 20$
e. $q_1 = 22.5$, $q_2 = 22.5$

15. What is the profit maximizing price for the cartel?
a. 10
b. 20
c. 40
d. 50
e. 60

16. Use the following game tree, GM sets prices first (high or low) and Ford moves second (high or low). (GM's payoffs are on top and Ford's are on bottom). Find the Sub-game Perfect equilibrium strategy:

GM

	High Prices		Low Prices	
	Ford		Ford	
	High Prices	Low Prices	High Prices	Low Prices
	100	35	200	20
	100	125	15	10

a. (High, {Low, Low})
b. (High, {Low, High})
c. (Low, {High, High})
d. (Low, {Low, High})
e. (Low, {Low, Low})

17. Airbus and Boeing are the only suppliers of large commercial aircraft in the world. What is the term that economists use for this market structure?

a. Cartel
b. Duopoly
c. Monopolist Competition
d. Monopoly
e. Oligopoly

18. In the following game tree, Adam moves first (climb or stay) followed by Ben (climb or stay). Adam's payoffs are listed on top while Ben's are listed on bottom. Find the Sub-game Perfect equilibrium.

Adam

Climb   Stay

Ben   Ben

Climb   Stay   Climb   Stay
-1   1   0   0
-2   0   1   0

a. (Stay, {Climb, Stay})
b. (Climb, {Stay, Climb})
c. (Stay, {Climb, Climb})
d. (Climb, {Stay, Stay})
e. (Stay, {Stay, Climb})

19. 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:

```
Player 1-----in-----Player 2---------in------Player 1----------in---------Player 2-----in--------
    |                    |                        |                            |                 |
   out                  out                      out                          out               |
    |                    |                        |                            |                 |
    4                    3                        8                            6                16
    2                    6                        5                           12                11
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a. (4, 2)
b. (3, 6)
c. (8, 5)
d. (6, 12)
e. (16, 11)

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

Olive Garden

Enter   Stay out

Ragazzi's

Lower Prices   Prices Unchanged
    -20   30   0
    20   10   50

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

The course packet had an article that compared United Airline's and jetBlue's costs on the route: Dulles Airport (Washington, D.C.) and Oakland, California. Both carriers fly an Airbus A320 on the route, both use the same number of pilots (2) and the same number of flight attendants (4), and both fly the same number of miles (2,415). Finally, the lowest one-way ticket price is $129 for both carriers. Yet, their costs substantially differ.

21. Which carrier had lower operating costs on this route?
a. jetBlue
b. United Airlines

22. What is the primary reason for these cost differences?
a. cost of meals
b. gate lease arrangements
c. labor costs
d. corporate income taxes
e. jet fuel costs

23. In 1983 this company was the first to launch the minivan in the U.S. Who is this company?
   A) Chrysler
   B) Ford
   C) General Motors
   D) Toyota
   E) Honda

24. Why did the company mentioned in the previous question decide to launch the minivan?
A) They had a dominant market share in station wagons
B) They wanted to appear as a company who is concerned about the American "family"
C) They had a dominant market share in small car segment
D) Gasoline prices were at all-time highs at the time
E) They were in bankruptcy and needed a new product to survive

25. In hindsight, would you say that the launch of the minivan by company mentioned in question #23 was a success or a failure?
A) failure
B) success

26. The Stackleberg model assumes:
A) Firms are price competitors
B) Firms collude in setting output
C) A leader commits to a quantity and the follower takes this quantity as given
D) Firms produce where price equals marginal cost
E) Firms produce the same quantity since they are quantity competitors

27. Given the demand curve: $Q = 110 - P$ and $MC = 10$ and $FC = 0$. Find the quantity that the **first firm** produces in the Cournot model.

   A) $Q_1 = 33.33$
   B) $Q_1 = 35$
   C) $Q_1 = 25$
   D) $Q_1 = 43.33$
   E) $Q_1 = 50$

28. Given the demand curve: $Q = 110 – P$ and $MC = 10$ and $FC = 0$. Find the price in the Cournot model.

    A) $P = 33.33$
    B) $P = 35$
    C) $P = 40$
    D) $P = 10$
    E) $P = 43.33$

29. Given the demand curve: $Q = 110 – P$ and $MC = 10$ and $FC = 0$. Find the ***total quantity*** produced by firm 1 and firm 2 in the Stackleberg model.

    A) 25
    B) 33.33
    C) 50
    D) 66.66
    E) 75

30. Given the demand curve: $Q = 110 – P$ and $MC = 10$ and $FC = 0$. Find the ***total profit*** for firm 1 and firm 2 in the Stackleberg model.

    A) 1875
    B) 625
    C) 1250
    D) 1555.12
    E) 2625

Consider the following situation. Construct a game tree with appropriate preference rankings where the twins (acting as one player) move first and the father moves second. A father with twin girls wants to take them to the circus and he has already bought the tickets. But the twins have been fighting. The father's preferred outcomes, ranked from best (#1) to worst (#4) are as follows:

#1: twins don't fight & go to circus
#2: twins fight & go to circus
#3: twins don't fight & don't go to circus
#4: twins fight & don't go to circus.

The twin's preferred outcomes, ranked from best to worst, are as follows:
#1: twins fight & go to circus
#2: twins don't fight & go to circus
#3: twins fight & don't go to circus
#4: twins don't fight & don't go to circus.

31. In your game tree diagram, how many decision nodes do the twins have?
A) 0
B) 1
C) 2
D) 3
E) 4

32. Find the sub-game Perfect equilibrium strategy for the previous game (remember #1 is best and #4 is worst)
A. {Fight, (No Circus, No Circus)}
B. {Fight, (Circus, Circus)}
C. {No Fight, (Circus, Circus)}
D. {No Fight, (No Circus, No Circus)}
E. {No Fight, (No Circus, Circus)}

Use this matrix to find the mixed strategy Nash equilibrium of this game.

		Column	
		Left	Right
Row	Up	5, 7	8, 4
	Down	7, 1	6, 2

33. Based on your mixed strategy Nash equilibrium, what is the probability that Row choose Up?
A. 1/4
B. 1/2
C. 1/3
D. 2/3
E. 3/4

34. Based on your mixed strategy Nash equilibrium, what is the probability that Column choose Left?
A. 1/4
B. 1/2
C. 1/3
D. 2/3
E. 3/4

35. What market segment in the automobile industry has seen the most growth since 1980?
A. Car
B. Pickup
C. SUV
D. Van

36. For the demand curve: $P = 100 - 2Q$ and $MC = Q$ and $FC = 0$. Use the Bertrand model to calculate the total output for the two firms.
A. Q = 16.67
B. Q = 33.33
C. Q = 20
D. Q = 40
E. Q = 25

37. For the demand curve: $P = 100 - 2Q$ and $MC = Q$ and $FC = 0$. Use the Bertrand model to calculate the price.
A. 20
B. 33.33
C. 50
D. 60
E. 66.67

38. What is the theory of "contestable" markets?
A. The argument in the auto industry which supports the usage of import quotas
B. The rationale that Japanese transplants help U.S. consumers yet hurt U.S. auto makers.
C. The theory that low cost carriers lower air fares.
D. The theory that smaller auto makers take the larger auto makers output as given.
E. The theory that every airline route is subject to possible entry, hence monopolist prices are not possible.

39. Pilot pay for captains in the airline industry is based heavily on which of the following:
A. Certification levels obtained
B. Employee age
C. Seniority
D. Education
E. On-time performance

40. Since 1997, what has happened to the average route length served by Southwest?
A. Increased since Southwest is now flying longer routes
B. Decreased since Southwest is now flying shorter routes
C. It has remained constant.

Extra Credit (+2.5 points each)
41. Since 1997, what has happened to the average cost per passenger mile for Southwest?
A. It has increased.
B. It has decreased.
C. It has remained constant.

42. Use the following game tree, GM sets prices first (high or low) and Ford moves second (high or low). ***Write this game in normal form***. (GM's payoff is on top & Ford's is on bottom). How many Nash equilibrium exist?

GM

	High Prices		Low Prices	
	Ford		Ford	
	High Prices	Low Prices	High Prices	Low Prices
	100	35	200	20
	100	125	15	10

a. 0
b. 1
c. 2
d. 3
e. 4