

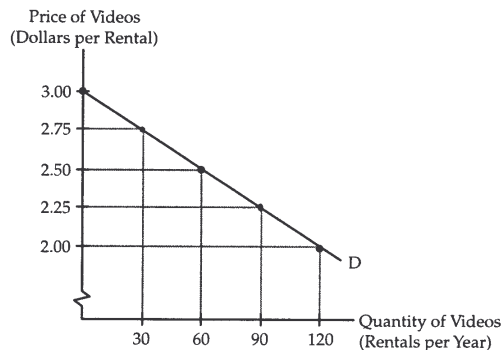
The following exam consists of 2 parts and has a total of 100 points. Part A has 32 multiple choice questions and is worth 80 points. Part B is a 20 point problem. Please check to see that you have all parts of the exam before beginning. You have 50 minutes to complete the exam. *Time may be a factor, so do not get stuck on any question.* You may use a calculator. Good Luck.

A. 80 points. Multiple Choice

(32 question, 2.5 points each)

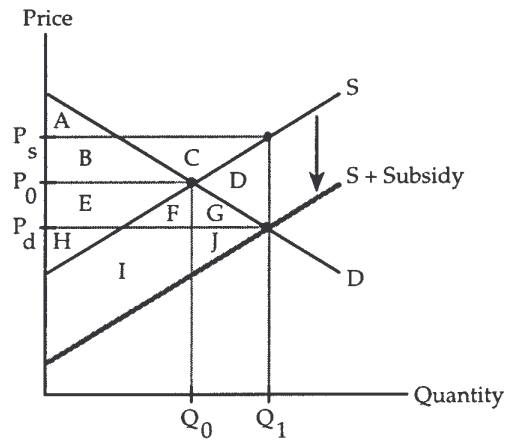
- Any firm, competitive or not, desiring to maximize profits, will choose its quantity according to the rule, produce that quantity at which
 - marginal revenue = price.
 - marginal revenue = marginal cost.**
 - average variable cost is at its minimum.
 - marginal cost is at its minimum.
- A competitive firm's shutdown price is equal to the minimum value of the firm's
 - marginal cost.
 - average cost.
 - average variable cost.**
 - fixed and sunk costs.
- Gonzo is in business for himself making and selling pizzas. His daily cost for ingredients is \$100 and his daily revenue is \$120. Gonzo quit his job at the Puffin Muffin factory where he earned \$15 a day, to enter the pizza business. Given this information, we know that his accounting profit
 - is \$120 while his economic profit is \$105.
 - and economic profit are both \$20.
 - is \$20 while his economic profit is \$5.**
 - and economic profit are both \$5.

Use the following information for questions 4 and 5. The diagram below shows Shontel's annual demand for videos. Shontel currently rents videos from Blockpopper's, which charges \$2.50 per rental.



- How much consumer's surplus does Shontel receive from renting videos?
 - \$150
 - \$75
 - \$30
 - \$15**
- Blockpopper's starts a "frequent viewers" club. For a membership fee of \$35 per year, club members can rent as many videos as they wish at the discounted price of \$2 per rental. Should Shontel join the "frequent viewers" club? If yes, how much surplus value would Shontel receive as a club member? If no, what membership fee would Shontel be willing to pay to join the club?
 - Yes, she would get \$60 in surplus.
 - Yes, she would get \$25 in surplus.**
 - No, she would be willing to pay \$30 to join.
 - No, she would be willing to pay \$25 to join.

Excise Subsidy: Questions 6-9 refer to the accompanying diagram which shows the effects of an excise subsidy given to firms. The initial price and quantity are P_0 and Q_0 , respectively. After the subsidy is granted, the equilibrium quantity is Q_1 , firms receive the price P_s , and consumers pay the price P_d .



6. Refer to Excise Subsidy. After the subsidy is granted, producers' surplus equals
 - a. area A + B + E + H.
 - b. area E + H + F + I.
 - c. **area B + C + E + H.**
 - d. area H.

7. Refer to Excise Subsidy. The amount of the subsidy paid to firms is given by
 - a. area A + B + E + H.
 - b. **area B + C + D + E + F + G.**
 - c. area D.
 - d. area F + G + I + J.

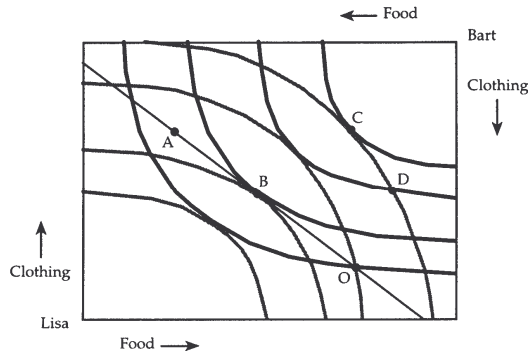
8. Refer to Excise Subsidy. The deadweight loss created by the subsidy is represented by
 - a. area F + G.
 - b. area D + G + J.
 - c. area C.
 - d. **area D.**

9. Refer to Excise Subsidy. After the subsidy is granted, which areas count as part of the measure for both consumer's surplus and producer's surplus?
 - a. areas A, B, E and H.
 - b. areas B, E and F.
 - c. **areas B and E.**
 - d. no areas can count as part of the measure for both.

10. When a firm with market power practices third-degree price discrimination, it charges the highest price to the group that
 - a. has the most elastic demand.
 - b. **has the most inelastic demand.**
 - c. purchases the highest quantity.
 - d. purchases the lowest quantity.

11. A country club charges a membership fee. Members pay competitive prices for the club's recreation and restaurant services. This situation is an example of
 - a. first-degree price discrimination.
 - b. second-degree price discrimination.
 - c. third-degree price discrimination.
 - d. **a two-part tariff.**

Questions 12-14 refer to the following diagram which shows an Edgeworth box economy. The initial endowment is point O.



12. Which of these points do Bart and Lisa both prefer to the endowment point O?

- a. A,B,C,D
- b. A,B**
- c. B,C
- d. B,C,D

13. Which of these points are Pareto optimal?

- a. A,B,C,D
- b. A,B
- c. B,C**
- d. B,C,D

14. Which of these points are competitive equilibria?

- a. A,B
- b. B**
- c. C
- d. B,C

15. Which of the following is the best example of second-degree price discrimination?

- a. A car salesperson's attempts to discover and charge the highest price that the customer is willing to pay.
- b. A sub shop that gives you a half-price sandwich on every sixth visit.**
- c. Manufacturers' use of discount coupons printed in Sunday newspapers.
- d. Polaroid cameras and film.

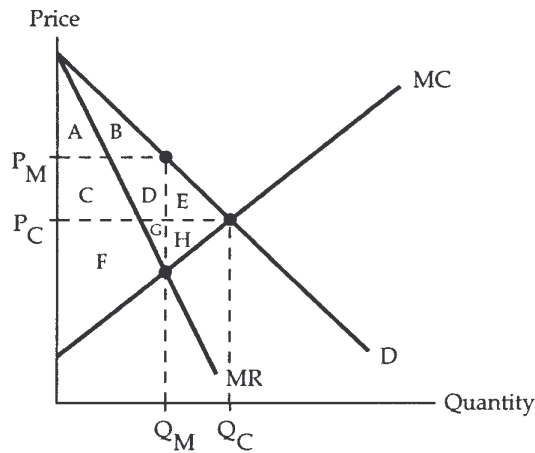
16. The key defining feature of oligopoly, in addition to firms' market power, is

- a. collusion.
- b. free entry and exit.
- c. firms take rivals' actions into account.**
- d. the Prisoner's Dilemma.

17. In the Bertrand model of oligopoly, each firm chooses its output assuming that its rivals

- a. do not change their price.**
- b. do not change their output.
- c. can enter and exit the industry costlessly.
- d. use the tit-for-tat strategy.

Use the following information for questions 18 through 21. P_C and Q_C are the equilibrium price and quantity if the firm behaves competitively, and P_M and Q_M are the equilibrium price and quantity if the firm is a simple monopoly.



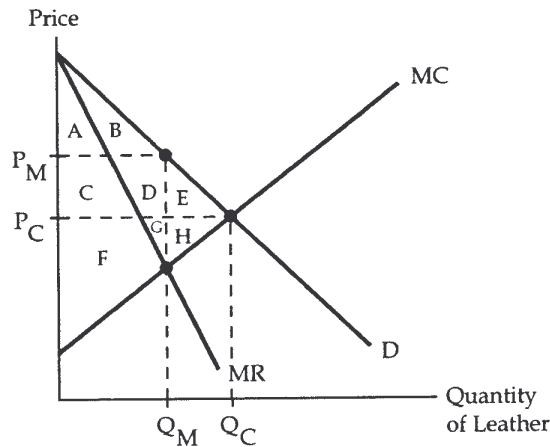
18. What area represents the producer's surplus earned in the competitive equilibrium?
 - a. $A+B+C+D+E$
 - b. $C+D+F+G$
 - c. $A+B$
 - d. **$F+G+H$**

19. If the firm switched to the simple monopoly equilibrium (Q_M), how much deadweight loss would be created?
 - a. $D+E+G+H$
 - b. **$E+H$**
 - c. none
 - d. $C+D+E$

20. Suppose the firm could perfectly price discriminate, how much *additional* producer surplus would producers earn when compared to their producer surplus under the simple monopolist scenario?
 - a. $A+B+C+D+E$
 - b. $C+D+F+G$
 - c. **$A+B+E+H$**
 - d. $A+B+C+D+E+F+G+H$

21. How much deadweight loss is created if the firm perfectly price discriminates (versus the competitive equilibrium)?
 - a. $D+E+G+H$
 - b. $E+H$
 - c. **none**
 - d. $C+D+E$

Monopoly Supplier and Manufacturer: Questions 22-25 refer to the accompanying diagram, which shows a monopoly leather supplier selling leather to a monopoly shoe manufacturer. The leather supplier initially produces Q_M and charges the shoe manufacturer P_M . Then the leather supplier acquires the shoe manufacturer in a vertical merger.



22. Refer to Monopoly Supplier and Manufacturer. Before the merger, the leather supplier earned surplus equal to
- $A + B$
 - $A + B + C + D + E$
 - $C + D + F + G$**
 - $F + G + H$
23. Refer to Monopoly Supplier and Manufacturer. After the merger, the leather supplier will
- continue to produce Q_M .
 - reduce its production from Q_M to force the shoe manufacturer to pay higher prices.
 - increase production to Q_C .**
 - produce more than Q_M but less than Q_C .
24. Refer to Monopoly Supplier and Manufacturer. The vertical merger causes social gain to
- rise by area $A + B$.
 - rise by area $E + H$.**
 - fall by area $B + D + G$.
 - remain equal to area $A + B + C + D + F + G$.
25. Refer to Monopoly Supplier and Manufacturer. After the merger, the integrated leather company will earn surplus of
- Area $A+B$.
 - Area $A+B+C+D+E$.
 - Area $F+G+H$.
 - Area $A+B+C+D+E+F+G+H$.**
26. Firms in monopolistic competition resemble monopolies in that both types of firms
- earn positive economic profits in the long run.
 - charge prices higher than their marginal costs.**
 - possess barriers to entry that keep potential rivals out of the market.
 - produce their output so that their average cost is minimized.

Game Matrix I: Questions 27-30 refer to the game matrix below.

Player A can play the strategies ♣ and ♠, and Player B can play the strategies ♦ and ♥.

		Player B's Strategies	
		♦	♥
Player A's Strategies	♣	A gets 7 B gets 3	A gets 2 B gets 2
	♠	A gets 9 B gets 1	A gets 6 B gets 4

27. Refer to Game Matrix I. What are the dominant strategies in this game?
- A's dominant strategy is ♠, and B's dominant strategy is ♥.
 - A's dominant strategy is ♠, but B does not have a dominant strategy.**
 - B's dominant strategy is ♥, but A does not have a dominant strategy.
 - Neither player has a dominant strategy.
28. Refer to Game Matrix I. The Nash equilibrium(a) for this game is in
- the upper left-hand corner & the lower left-hand corner.
 - the lower right-hand corner.**
 - the lower left-hand corner.
 - the lower right-hand corner & lower left-hand corner
29. Refer to Game Matrix I. The only outcome in this game that is *not* Pareto optimal is
- the upper left-hand corner.
 - the upper right-hand corner.**
 - the lower left-hand corner.
 - the lower right-hand corner.
30. Refer to Game Matrix I. If this game is played sequentially with Player A first, the Stackelberg equilibrium is
- the upper left-hand corner.**
 - the upper right-hand corner.
 - the lower left-hand corner.
 - the lower right-hand corner.
31. Consider an outcome in which it is impossible to make one player better off without simultaneously making the other player worse off. We can conclude that this outcome
- cannot be a Nash equilibrium.
 - must be Pareto optimal.**
 - will not occur when the players use mixed strategies.
 - is a Stackelberg equilibrium.
32. When both players in a game play a dominant strategy, the outcome will be
- Pareto optimal.
 - a Prisoners' Dilemma.
 - a Stackelberg equilibrium.
 - the game's only Nash equilibrium.**

Part B. 20 Points.
(2 points each)

Name _____

Widgets are provided by a competitive constant cost industry. **Each firm faces fixed costs equal to \$50.** The following charts show the industry-wide demand and the marginal cost schedule of a typical firm. The blank columns are to be used to help answer the questions below.

Firm Costs		Scrap		Industry Demand	
q	MC	TC	ATC	Price	Qd
1	\$15	65	65	\$15	1000
2	20	85	42.5	20	900
3	25	110	36.66	25	800
4	30	140	35	30	700
5	35	175	35	35	600
6	40	215	35.83	40	500
7	45	260	37.14	45	400
8	50	310	38.75	50	300
9	55	365	40.56	55	200
10	60	425	42.5	60	100

Suppose the initial market price of a widget is \$30.

- If the firms produce, how many widgets will each firm produce (q)? 4
- How much profit will each firm earn if they produce? $TR-TC = (4*30) - 140 = -\20
- Is the industry in the short run or long run? How do you know? No, firms are earning a negative profit. In the LR, firms earn zero profit in a competitive constant cost industry.
- Will firms shutdown? Why or why not? No, $P > AVC$ ($30 > 22.5$) or profit is greater (less negative) than FC - $-20 > -50$
- How many firms are initially in the industry? $700/4 = 175$
- On the industry-wide short-run supply curve, what quantity (Qs) corresponds to a price of \$25? $175*3 = 525$
- What is the long-run price of widgets? $P = MC = ATC = \$35$
- What is each firm's output (q) in the long-run? 5
- In the long-run, do firms exit or enter the industry? If so, how many? Yes, firms exit. Now, there are $600/5 = 120$ firms. This means $175 - 120 = 55$ have exited.
- Suppose the fixed costs were a function of the number of firms in the industry instead of the fixed \$50, specifically, $FC = N*12$, (where N = the number of firms), would this be an increasing, decreasing or constant cost industry?
increasing