

Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 240 points (to be scaled down to 200 points) and is scheduled to take 120 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 14-point question should take 7 minutes. I cannot give extra time because some students have an exam after this exam.

1) (12 points) Answer EITHER Part A OR Part B.

A) Why does a Von Stackelberg leader produce more than a Cournot firm facing the same costs and demand? Explain your logic.

B) Describe the equilibrium for the Bertrand model when the products are identical. Explain why it results in that equilibrium.

2) (12 points) Answer EITHER Part A OR Part B.

A) It won't be too long before you are on the job market. In addition to getting an education, how can you signal to a firm that you will be a hard-working employee? Be specific on how that action would send that signal.

B) The book gives an example of how the free agents in Major League Baseball show the *lemons problem*. Explain that example.

3) (14 points) Answer Part A OR Part B.

A) Why is the MRP_L diagram for a monopolistic firm different from the MRP_L for a perfectly competitive firm? Draw both lines and explain the logic.

B) Draw the D_L for a firm with variable capital. Draw the MRP_L line on the same graph. Explain why they are not the same line.

4) (16 points) Answer EITHER Part A OR Part B.

A) Suppose the company you run has an average return of 9% and the risk-free return is 4%. What is your company's β ? Show all work. What does that tell you about the company? Briefly explain your logic.

B) What number would you expect the β for farming would be? (In a different course, we argue that agriculture is more stable than manufacturing.) Explain your logic. If the risk-free return is 5%, then given your estimated value of β , what should the discount rate be for a farmer? Show all work.

5) (20 points) Answer EITHER Part A OR Part B using the following information. Suppose your dishwasher died. You have the following three options. 1) Do dishes by hand. 2) Buy a LG dishwasher which costs \$300 and costs about \$30 per year to run. At the end of 10 years, it will need to be replaced. 3) Buy a GE dishwasher which costs \$330 and costs about \$25 per year to run. At the end of 10 years it will need to be replaced. You are willing to pay \$60 per year to not have to do dishes by hand. Your discount rate is 2%. Not all information is used in both parts.

A) Which is better for you, buying the GE dishwasher or doing them by hand? Set up the calculation **without actually solving it**. Explain how you decided what numbers to put where and how you would use the final result to determine which is better.

B) Which is better for you, buying the LG dishwasher or the GE dishwasher? Set up the calculation **without actually solving it**. Explain how you decided what numbers to put where and how you would use the final result to determine which is better.

6) (20 points) Answer EITHER Part A OR Part B.

A) We drew a diagram which was basically supply and demand for an input like a raw material which is controlled by a monopsony. However we did not label the lines supply and demand. Draw the diagram. Explain why we labeled the lines as we did and how we find the quantity produced and the price paid. Prove that is not an efficient level of production.

B) Draw the MC/D diagram for a monopoly facing a price ceiling. Find the price charged and quantity produced. Explain how you found them. Prove that this can be an efficient level of production.

7) (22 points) For EITHER *positive externalities* OR *negative externalities*, explain what it is using an example. Draw a diagram which proves the market will not be efficient at producing that good. Which efficiency condition (technical, production, or consumption) does not hold? Explain your logic.

8) (22 points) Give EITHER an example of *adverse selection* OR *moral hazard* in the credit markets. Explain how that is an example. Give one example of how banks reduce the problem. Explain how that has the desired effect.

9) (22 points) Answer EITHER Part A OR Part B.

A) There is a lot of drilling going on in this area. According to the Coase Theorem, what proof do we have that this is the correct amount of drilling? What are potential problems with this logic?

B) Draw the D/MC diagram for a public good with two consumers. Use it to find the optimal level of production. Explain how you found it.

10) (24 points) Answer EITHER Part A OR Part B.

A) Copy the payoff matrix into your text booklet. Find the Nash equilibrium (equilibria) for the following payoff matrix. BRIEFLY explain how you found it (them). Does either person have a dominant strategy? BRIEFLY explain your logic. Find both people's secure, a.k.a., safe, a.k.a., maximin strategy. BRIEFLY explain how you found them.

Question #6		Dick			
		High Quality	Medium Quality	Low Quality	
Jane	High Quality	14	10	8	7
	Medium Quality	4	11	8	5

B) For a common value action, would you want it to be an open-bid auction or a closed-bid auction? Explain your logic. Explain why repeated games with a certain, finite number of repetitions will not achieve the cooperative equilibrium.

11) (26 points) Answer EITHER Part A OR Part B.

A) Draw the diagram for third degree price discrimination for a firm with two different markets. Explain how the quantity produced, the quantity sold in each market, and the price charged in each market are found. Given a real-world example of how this is done in practice.

B) Draw the ATC/AVC/MC/D diagram for a monopolistically competitive firm in the long-run equilibrium. Find the quantity produced and the price paid. Explain how you found the quantity produced, price paid, and how you know the company is in the long-run equilibrium.

12) (30 points) Answer EITHER Part A OR Part B.

A) Draw the diagram for *price leadership*, a.k.a., *dominant firm with a competitive fringe*. Use the diagram to find the quantity produced by the dominant firm, quantity produced by the fringe, the total quantity produced, and the price charged. Explain how you found the dominant firm's demand, its marginal revenue, the price charged, and all three quantities asked for.

B) Suppose a Cournot-Nash style duopoly has an industry demand of $P = 90 - \frac{1}{2}Q$. Suppose the two firms have a constant marginal cost of \$30/unit. Draw the MC/D diagram for the industry. Use it to find the two firms' best response functions. Explain what you did. Plot the two best response functions and find the equilibrium outputs of the two firms and the price charged. Briefly explain what you did.