UCBE 2021

Written Exam Sample Questions

Instructions

1. Questions will be graded based on both work and correctness, so students should attempt each problem. Please note that some questions have multiple parts.

2. Students can discuss with each other and use the whiteboard feature on zoom to share ideas, but ultimately work for problems must be submitted using a picture of written work or preferably, typed.

3. For open-ended questions, a short response of about 1-4 sentences would suffice as long as the key idea is presented.

4. For numerical questions, please show full working, and circle the final answer. Show numerical answers to 2 decimal places.

1. Will an increase in housing prices necessarily make homeowners better off?

2. What is the dual mandate of the Federal Reserve? Briefly explain them and why are they important. What is the current fed funds rate?

3. Why might fiscal policies not be effective in promoting economic growth in some situations?

4. What are some of the reasons there might be less hospitals and less hospital beds now than in 1975?

5. What is the expected number of coin flips required to get 3 heads in a row followed by a tail i.e. "HHHT"?

6. Suppose a consumer's demand function for bottled water is $q_b = 12 - 12p_b$ where q_b is the number of bottled water, and p_b is the price of bottled water. Would the consumer accept or refuse an all-or-nothing offer to pay 4 dollars for 6 bottles of water?

7. Examine the following game and answer the following questions

Player 2

		Confess	Not Confess
Player 1	Confess	$(1, 1)$	$(3, -1)$
	Not Confess	$(-1, 3)$	$(2, 2)$

a) What is the Nash Equilibrium? Is the Nash Equilibrium optimal?

b) Instead of a singular game, consider now a potentially infinitely repeated game of the same game above. At every point of time, there is a probability p of having a repeated game in the next point of time. Consider the following strategy: I will play Not Confess every period and expect you to play Not Confess every period. Once you play Confess at

any period, I will play Confess for every period forever. For what values of p can we sustain the optimal outcome?

8. Consider a market with inverse supply function $P = 5Q - 4$ and inverse demand function $P = -\frac{Q}{2} + 5$.

a) What is the equilibrium price and quantity?

b) What happens to consumer surplus when the government institutes a price ceiling of P = 2?

c) What is the deadweight loss when the government institutes a price floor of $P = 4.5$?

9. Consider a monopolist facing the inverse demand function $P = a - bQ$ and marginal cost function $P = c$, where a, b, c, are constants. Assume the monopolist has perfect information on consumers and implements first degree price discrimination. Express, using a, b, c:

a) Producer surplus

b) Consumer surplus

c) Deadweight loss

10. Consider an oligopoly made up of 3 identical firms that simultaneously set production quantities. Market demand is given by $Q = a - P$, where a is a constant. Each firm faces a common constant marginal cost of c.

a) What is the output and profit level of each firm? (Hint: Assume firms are profit maximizing, express each firm's profit function in terms of other firms' production quantities and maximize that function)

b) Suppose two of the firms merge. What is the output level of each remaining firm?