Write all answers in your blue book and show all work there. Return your exam in your blue book.

18 pts.
1) Suppose that price goes up and the quantity demanded goes up too.
a) Is this theoretically possible? Use utility models that we’ve studied to show if it’s possible or not.
b) Be sure to identify the substitution and income effects in your work.

10 pts.
2) Draw a well-labeled diagram that shows:
a) Why it is unprofitable to produce past the point where MR=MC.
b) Why it is inefficient to produce past the point where P=MC.

22 pts.
3) If \( Q = L^{1/3}K^{2/3} \) and \( P_L = 4 \) and \( P_K = 5 \),
a) Find the \( MP_L \) and \( MP_K \).
b) Find the MRTS.
c) Find the cost minimizing \( K/L \) combination to produce 684 units of \( Q \).
d) Describe the returns to scale present here. Is this a long run or short run concept? Why?
e) Draw the LRAC results from this production function.

18 pts.
4) Use a well-labeled diagram to show the effect of an increase in demand on price in the long run and the short run in an increasing cost industry.

18 pts.
5) Suppose that to control health care costs, a price ceiling is imposed on the wages of doctors and nurses.
a) Use a well-labeled diagram to show and describe the consequences of such a policy.
b) Would the problem you describe be worse or better in the long run? Why?

14 pts.
6) Sketch an Edgeworth box where there are
a) Two people, A and B, where A has much higher income and
b) Both are maximizing utility and
c) There are equilibrium competitive prices.

I have neither given nor received unfair aid on this test nor am I aware of anyone else who has.