Econ 2: Spring 2014: Sample Final Exam II

Name: _____ GSI: _____ Section: _____ SID: _____

A. Identifications (20 minutes—if you are not through after 20 minutes, skip to the next question): Briefly, in one or two sentences, explain the terms set out and how they have been used in the course:

1. "Utility"

2. "Social Welfare" or "Societal Well-Being"

3. Market Failure

4. Quotas

5. Willingness-to-Pay

6. Non-Rivalry and Non-Excludability

7. "Say's Law"

8. Output Gap

B. Supply and Demand: (20 minutes—if you are not through after 20 minutes, skip to the next question): In the central part of the state of Euphoria there is an enormous suburban sprawl, somewhere in the middle of which is Tall Stick, home of Crony Capitalism University. [Founded by a nineteenth-century Robber Baron who told his British investors that their money was safe in his enterprises because he was not just a financier but also a big wheel in the dominant political party and an ex-governor of the state of Euphoria. Ha, ha! Silly British investors! What they thought would be their profits became instead the core endowment of CCU.] We will look at the daily market for bubble-tea drinks near CCU.

Suppose that the quantity of espresso drinks demanded and the quantity of espresso drinks supplied daily are given by the equations:

- Demand: $Q = 32,000 - 1600P$
- Supply: $Q = \max(-8000 + 800P, 0)$

where P is the price of a bubble-tea drink in dollars:

1. What is the market equilibrium price?

2. What is the market equilibrium quantity?

3. What is the producer surplus?

4. What is the consumer surplus?

5. Explain, intuitively, why the distribution of producer and consumer surplus is what it is.

6. What would the distribution of consumer and producer surplus be if the supply curve equation were: {IF (P < 10) THEN (Q=0)} AND {IF (P≥10) THEN (Q=16000)?

C. Natural Monopoly: (20 minutes—if you are not through after 20 minutes, skip to the next question): All of the 10,000 students at Crony Capitalism University are addicted to The Social Network. The Social Network has no costs: the programming has been done, and the maintenance, bandwidth, and cloud-storage costs are negligibly small. The Social Network sells ads at $1/minute per student—thus if every student watches an ad the advertiser pays The Social Network $10,000; if half the students watch an ad the advertiser pays The Social Network $5,000; and if no students watch an ad the advertiser pays The Social Network $0. The students at CCU who do not install ad-blocking software on their browsers see all ads. The students at CCU who do install ad-blocking software on their browsers see no ads. The fraction F of CCU students who install ad-blocking software is given by the following equation:

$$F = 0 + Q/300$$

where Q is the number of minutes of advertisements TSN sells.

1. What is the revenue curve for advertisements sold by TSN—that is, how much money does it earn as a function of how many ads it sells?

2. What is the profit-maximizing number of ads that TSN as a natural monopolist sells?

3. Suppose that it costs each CCU student $300 to install ad-blocking software—they have to hire computer-science majors from Euphoric State as consultants to do the job, you see. Assuming watching each one-minute ad is equally painful in utility terms to each CCU student, what is the willingness to pay of CCU students for ad-blocking software—if TSN finances itself via advertising at the profit maximizing level?

4. Suppose that CCU decided to charge each of its students a flat fee and use that money to make a take-it-or-leave-it offer to induce TSN to supply an ad-free version to CCU students. How large a fee would CCU have to charge to induce TSN to take the deal? Qualitatively, which CCU students would gain from this arrangement relative to the natural-monopoly equilibrium? Which CCU students would lose?

D. Elasticity (20 minutes—if you are not through after 20 minutes, skip to the next question): Consider the demand curve:

P = 30 - Q/30000

1. What is the elasticity of demand at Q = 900000?

2. What is the elasticity of demand at Q = 450000?

3. What is the elasticity of demand at P = 30?

4. What point on the demand curve maximizes total revenue?

5. Why wouldn't a monopolist ever produce a quantity more than 450,000?

E. "Say's Law" (20 minutes—if you are not through after 20 minutes, skip to the next question): Back in 2009 University of Chicago Professor and (now) Nobel prize-winner Eugene Fama wrote:

> Bailouts and stimulus plans are funded by issuing more government debt.... The added debt absorbs savings that would otherwise go to private investment.... [S]timulus plans do not add to current resources in use. They just move resources from one use to another.... I come back to these fundamental points several times below....

> **The Sad Logic of a Fiscal Stimulus**
> In a "fiscal stimulus," the government borrows and spends the money on investment projects or gives it away as transfer payments to people or states. The hope is that government spending will put people to work.... Unfortunately, there is a fly in the ointment.... [G]overnment infrastructure investments must be financed -- more government debt. The new government debt absorbs private and corporate savings, which means private investment goes down by the same amount....

> Suppose the stimulus plan takes the form of lower taxes... we can't get something for nothing this way either... lower tax receipts must be financed dollar for dollar by more government borrowing. The government gives with one hand but takes them back with the other, with no net effect on current incomes...

Fama's argument is that the government cannot increase its total planned expenditure without somebody else decreasing their planned expenditure—that any cash the government spends must be either borrowed from or taxed from private individuals, who then must cut their planned expenditure by as much as the government increases its. This is, it seems to me, the doctrine called "Say's Law". Write a 20-minute essay trying to convince Professor Fama he is wrong.

F. Macroeconomic Policy (20 minutes—if you are not through after 20 minutes, skip to the next question): Suppose that it is December 2018 and you are in charge of forecasting the state of the economy in 2020. You believe that potential output in 2022 will be $20 trillion, with a 2% inflation rate, and your baseline forecast given current policies for output in 2020 is $19.4 trillion. You also believe that the marginal propensity to consume is 2/3, and you are working in the income-expenditure model. Suppose, also, that you believe the aggregate supply curve is strongly kinked with inflation anchored at 2%/year: that whenever potential output is above actual real expenditure the inflation rate is 2%/year, but if expenditure rises above the level consistent with output equal to potential output times the price level at 2% inflation, inflation accelerates and the price level rises to keep actual output from rising above potential.

1. Suppose that the federal government undertakes an extra $200 billion fiscal stimulus infrastructure construction program for 2020, and the Federal Reserve remains passive. How does this change your forecast of GDP and inflation in 2020?

2. Suppose that the federal government undertakes an extra $400 billion fiscal stimulus infrastructure construction program for 2020, and the Federal Reserve remains passive. How does this change your forecast of GDP and inflation in 2020?

3. Suppose that the federal government undertakes an extra $400 billion fiscal stimulus infrastructure construction program for 2020, but the Federal Reserve acts to keep inflation from rising above 2%/year. How does this change your forecast of

GDP and inflation in 2020? What components of GDP do you think rise and what components of GDP do you think fall in this scenario?

4. How would your answer to (1) have been different if potential output were not $20 trillion but $21 trillion?

5. How would your answer to (2) have been different if potential output were not $20 trillion but $21 trillion?

6. How would your answer to (3) have been different if potential output were not $20 trillion but $21 trillion?

G. Government Budget (20 minutes—if you are not through after 20 minutes, skip to the next question): In the first quarter of 2014 the Commerce Department's Bureau of Economic Analysis estimated that local, state, and the federal government purchased $716.2 billion worth of goods and services, in a context in which total GDP in that quarter was $3,986.6 billion—government purchases were thus 17.9% of the entire economy. Do you believe that this number is lower than is optimal, about optimal, or too high to be optimal? Why? What things have you learned in this course that have changed or confirmed your view of this question?

H. Next time (20 minutes—if you are not through after 20 minutes, skip to the next question): This is the first time we have taught Econ 2 since 2007, so we are especially anxious for feedback. Write a four-paragraph essay. Pick one element of the course that you thought worked best, and explain why you thought it worked best. Pick one element of the course that you thought worked badly but needs to be improved, and explain how you think it could be improved. Pick one element of the course that you thought worked badly and should be dropped. and explain why it should be dropped. And pick one topic not covered in the course that you think should be added, and explain why it should be added.

I. You now have 20 minutes left to go back over your exam, check your work, and make what progress you can on questions that you could not finish in the time allotted. Good luck…