

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 150 points (to be scaled up to 210 points) and is scheduled to take 75 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I can give extra time, but not a lot.

1) (12 points) Give an example of EITHER frictional unemployment OR structural unemployment. Explain why it fits that definition.

2) (14 points) Explain EITHER the equation in Part A OR the equation in Part B.

A)  $r = \frac{(1-t)i - \pi^e}{1 + \pi^e}$  Including why  $\pi^e$  is there twice.

B)  $uc_K = \frac{(r+d)p_k}{1-\tau}$

3) (16 points) Answer EITHER Part A OR Part B.

A) Draw the production function with labor on the axis. Illustrate the effects of an earthquake which destroys a large number of buildings. Explain why the curve moved as drawn.

B) Draw the labor supply and labor demand diagram. Illustrate the effects of an improvement in technology. Explain why the curve moved as drawn.

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

A) When we drew the labor supply curve, we drew it nearly vertical. Why is that? Which effect did we assume was stronger? Explain your logic.

B) One version of Okun's Law is written as  $\Delta Y/Y = 3 - 2\Delta u$ . However, that is specific to the USA. I would guess that for Japan, the equation is probably more like  $\Delta Y/Y = 2 - 4\Delta u$ . What would that mean about their economy? Why would the first number be smaller and the second number be larger?

5) (16 points) Answer EITHER Part A OR Part B.

A) If I gave you NNP and asked you to calculate NI, what information would you need? How would you use it? Why would you use it in that manner?

B) What are the three ways to calculate GDP? For two of them, explain why they should give the same value.

6) (18 points) All variables have problems with their definitions which make them less useful than we would like. This is especially true in macroeconomics. For EITHER real GDP OR the unemployment rate, explain TWO problems with measuring that variable. Give examples of why those are problems.

7) (18 points) Answer EITHER Part A OR Part B.

A) Draw the intertemporal budget constraint diagram. Illustrate the effects of an expected tax increase in the future. Explain why the curve moved as drawn. What happens to this year's saving? Explain your logic.

B) Use Friedman's Permanent Income Hypothesis to explain Ricardian Equivalence for a tax cut. Make sure you mention the impact upon the total saving.

8) (40 points) Draw the  $MPK^f/uc_K$  diagram and the S/I diagram. Illustrate the effects of EITHER the event in Part A OR the event in Part B. Explain why the curves moved as drawn. What happens to the interest rate, desired level of capital, user cost of capital, and investment?

A) A new technology is developed which will make capital more productive.

B) Government spending decreases. Assume Ricardian Equivalence does NOT hold.