

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 cannot give extra time because some students have a class after your class.

1) (10 points each) For TWO of the following, tell me if it used when we calculate: GDP, GNP from GDP, NNP from GNP, NI from NNP, PI from NI, or DPI from PI. State if it is added or subtracted and why it is done at that step.

A) Retained earning

B) Interest received from abroad

C) The government sends Social Security payments to retired people.

2) (14 points) Answer EITHER Part A OR Part B.

A) Borrowing constraints can cause problems for the Life-Cycle Model. Explain how borrowing plays an important role in the model and how borrowing constraints may affect how people behave.

B) Explain how durable goods can cause problems with the Permanent Income Hypothesis.

3) (14 points) Every statistic has problems with the way it is defined. For EITHER the unemployment rate OR the GDP. Explain two problems with it.

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

A) Explain this equation including why  $\pi^e$  appears twice. 
$$r_{a-t} = \frac{i(1-t) - \pi^e}{1 + \pi^e}$$

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

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

A) Explain Ricardian equivalence. What does it mean about the effectiveness of fiscal policy at stabilizing the economy? Explain your logic.

B) Draw the inter-temporal budget constraint. Illustrate the effects of a decrease in future income. Explain why the curve moved as drawn. What happens to the level of consumption this period and the level of saving this period? State how you reached your conclusion.

6) (34 points) Answer EITHER Part A OR Part B.

A) Draw the production function with labor on the axis and the labor supply/demand diagram. Illustrate the effects of an earthquake destroying lots of buildings. Explain why the curve(s) moved as drawn. What happens to amount of labor hired, the real wage rate, and the production? State how you see them on the graph.

B) Draw the labor supply/labor demand diagram. Illustrate the effects of expected increase in future income. Explain why the curve(s) moved as drawn. What happens to the real wage and the level of employment? Explain why the labor supply curve takes its shape.

7) (36 points) Draw the S/I diagram and  $MPK^f/uc_K$  diagram. Illustrate the effects of either the event in Part A or the event in Part B on the diagram. Explain why the curves moved. What happens to the user cost of capital, the desired amount of capital, the interest rate, and the level of investment?

A) Government spending increases. Assume Ricardian Equivalence does NOT hold.

B) A new technology increases the productivity of capital.