

Write your name on the cover of the test booklet and nowhere else. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 150 points) and is scheduled to take 50 minutes, but you can take the full 1 hour and 25 minutes. Therefore, expect to spend 1 minute for every 2 points.

1) (8 points) Define EITHER recession OR trough.

2) (10 points) Answer EITHER Part A OR Part B.

A) In Economics 162, we said that the MPC was 0.9. Given the *permanent income hypothesis* and/or the *life cycle model*, is this more likely to be accurate for a temporary change in income or a permanent change? Explain your logic.

B) Without drawing any graph, what will happen to the amount of investment if the  $MPK^f$  increases? Explain your logic.

3) (14 points) Answer EITHER Part A OR Part B.

A) Developing countries complain that using real GDP per capita as a measure of development does not work well because their GDP statistics do not reflect the production within the country. Give two reasons why this is probably true.

B) Why might the unemployment numbers be misleading? Give two reasons.

4) (16 points) Illustrate EITHER the event in Part A OR the event in Part B on the savings and investment diagram. Assume we are a small open economy with balanced trade. Explain why the curve(s) moved as drawn. What happens to interest rates and the current account? Explain your logic.

A) There is a temporary negative production shock.

B) The corporate tax rate decreases.

5) (16 points) Explain EITHER the equation in Part A OR the equation in Part B.

A)  $\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + a_K \frac{\Delta K}{K} + a_N \frac{\Delta N}{N}$ . You can ignore the  $a_K$  and  $a_N$  and you can treat  $\Delta$ variable/variable as one variable, but make sure you define it.

B)  $M^d = P * L(Y, r + \pi^e)$ .

6) (18 points) Answer EITHER Part A OR Part B.

A) Illustrate an increase in the depreciation rate on Solow's diagram of savings per capita as a function of the capital-to-labor ratio. Explain why the curve(s) moved as drawn. Explain the economic reason why the capital-to-labor ratio changed as drawn.

B) Illustrate on the  $MPK^f/UC_K$  diagram an improvement in technology. What happens to the amount of capital desired? Why does that happen?

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

A) Illustrate an increase in the tax rate on earned income on the labor supply and demand diagram.

B) Illustrate an improvement in technology on the production function as a function of labor.