

Exam 1: Version A Spring 2016

Do not open this exam until instructed to do so.

- You have 75 minutes to complete this exam
- You may use a calculator; you may **not** use any other device (cell phone, etc.)
- You may consult one page of notes (both sides); you may not use books, notebooks, etc.
- Show your work

I understand that the honor code applies: I will not lie, cheat, or steal to gain an academic advantage, nor tolerate those who do.

Signature

Printed Name

For each question below, **write the letter of the most correct answer to the left of the question.**

1. (3 pts.) In fourteenth-century Europe, the bubonic plague (or "Black Death") reduced the labor force substantially. The concepts of diminishing marginal products and profit maximizing behavior predict that
 - A. the real wage should increase.
 - B. the marginal product land should increase.
 - C. the rental rate of land should increase.
 - D. real GDP should increase.
2. (3 pts.) Assume that the production function is Cobb-Douglas with parameter $\alpha = 0.30$. In the model developed in Chapter 3, if the labor force increases by 10 percent, then output:
 - A. increases by about 3 percent.
 - B. does not increase since new workers are typically unemployed.
 - C. increases by about 10 percent
 - D. increases by about 7 percent.
3. (3 pts.) If the adult population equals 250 million, of which 145 million are employed and 5 million are unemployed, the labor force participation rate is:
 - A. 58 percent
 - B. 60 percent
 - C. 67 percent.
 - D. 50 percent
4. (3 pts.) Given growth in technological progress (g) and the labor force (n), on a Balanced Growth Path:
 - A. the the real rental rate of capital and the real wage grow at the rate of technological progress and the growth of the labor force.
 - B. the real rental rate of capital is constant, the real wage grows at the rate of technological progress.
 - C. the real rental rate of capital and the real wage grow at the rate of technological progress.
 - D. the real rental rate of capital grows at the rate of technological progress, and the real wage grows at the rate of technological progress and the growth of the labor force.
5. (3 pts.) If saving exceeds investment demand, and consumption is not a function of the interest rate
 - A. the interest rate will fall.
 - B. the interest rate will rise.
 - C. savings will fall.
 - D. the demand for loans exceeds the supply of loans.

6. (3 pts.) The CPI is determined by computing:
- A. Nominal GDP relative to real GDP
 - B. The price of a fixed basket of goods and services, relative to the price of the same basket in a base year.
 - C. The average of prices of all goods and services
 - D. The price of a basket of goods and services that changes each year, relative to the same basket in a base year.
7. (3 pts.) Institutions such as a country's legal system and the level of corruption in a country have been found to be:
- A. unrelated to the rate of economic growth in a country.
 - B. significant determinants of the rate of economic growth in a country.
 - C. important topics for political discussion, but not economic explanations of growth.
 - D. important variables explaining the Golden Rule level of capital.
8. (3 pts.) Assume that a bakery hires more workers and pays them wages and that the workers produce more bread. GDP increases in all of the following cases except when the bread:
- A. is sold to households.
 - B. is sold to other firms.
 - C. is stored away for later sale.
 - D. grows stale and is thrown away.
9. (3 pts.) The growth of labor productivity (Y/L) may be expressed as the rate of growth of total factor productivity (A)
- A. plus the capital share multiplied by the rate of growth of the capital-to-labor ratio.
 - B. minus the rate of growth of capital productivity.
 - C. minus the capital share multiplied by the rate of growth of the capital-to-labor ratio.
 - D. plus the rate of growth of capital productivity.
10. (3 pts.) Two equivalent ways to view GDP are as the:
- A. total expenditures on all goods produced in the economy or the total income earned from producing services in the economy.
 - B. total income of everyone in the economy or the total expenditure on the economy's output of goods and services.
 - C. total payments made to all workers in the economy or the total profits of all firms and business in the economy.
 - D. total profits of all firms and business in the economy or the total consumption of goods and services by households in the economy.

11. (35 pts.) **Make America Great Again.** Donald J. Trump's Presidential platform outlines a substantial tax decrease by reducing tax rates for a large majority of Americans. This tax reduction will be off-set by a substantial reduction in government spending. That is Trump's tax plan is deficit neutral.
- a. (7 pts.) Working with our model developed in Chapter 3, carefully explain the impact of Trump's tax plan on investment and the real interest rate—if at all. If not, please carefully explain why not.

- b. (7 pts.) Working with our model developed in Chapter 3, carefully explain the impact of Trump's tax plan on real GDP. If not, please carefully explain why not.

- c. (7 pts.) Given your answers in Part **a.** and Part **b.** carefully explain how Trump's tax plan is changing each expenditure component of GDP.

- d. (7 pts.) Consider the following premise: People work more as their after-tax income rises.

Carefully describe how this premise interacts with Trump's plan, if at all. That is describe how will investment, the real interest rate, and real GDP change (if at all). Please provide a qualitative ranking with respect to your answer in Part **a.** and Part **b.**

- e. (7 pts.) Speculate how Trump's plan might effect real GDP in the future (within the boundaries of our class material). Be as clear and specific as possible.

12. (35 pts.) **Parental Leave.** Firm's often argue and lobby in Congress against laws that mandate the provision of parental leave to their employees. As a junior aide to Senator Kirsten Gillibrand(D,NY) you have been tasked to compile a portfolio describing the economic arguments for and against parental leave.

A summer intern compiled some information that may be of use: the national savings rate is 20 percent; labor's share of income is $2/3$; and the depreciation rate of the capital stock is 5 percent. Capital has been growing at 2 percent per year. Unfortunately, the summer intern only partially completed table below.

		Contribution to growth of Y/L	
	Y/L	A	$\alpha K/L$
1990–2015	2.00		$2/3$

- a. (7 pts.) As a first task, please complete the summer intern's work by filling in the table above.
- b. (7 pts.) Is this country on balanced growth path? Carefully explain why or why not.

- c. (7 pts.) In the short-run (i.e. with factors of production and technology fixed), if one thinks of mandated parental leave as resulting in a reduction in labor force (less people to work), how does the real rental rate on capital change, if at all? Carefully explain why or why not. If the owners of capital took this “short-view,” would they still be against parental leave?

- d. (7 pts.) In the long-run (i.e. with factors of production and technology growing in a balanced fashion), if parental leave incentives adults to have more children, this will lead to faster growth in the labor force. How does this affect (if at all) the real rental rate on capital? If the owners of capital took this "long-view," would they still be against parental leave?
- e. (7 pts.) In helping Senator Gillibrand prepare congressional testimony on this subject, provide a **quantitative** comparison of today's real rental rate on capital with the long-run, real rental rate on capital associated with a one percentage point increase in the growth rate of the labor force. Assume that other factors such as technological progress, savings rates, etc. will not change.

Extra Space

Clearly label the question number, and leave a reference to this page near the question.