

Attention: Not all questionnaires are the same. This is questionnaire **A**. On the answer sheet, you must indicate the letter of your questionnaire with the course's number as follows: **ECO2143A**. You must answer according to **the material seen in this course**. Read all answer choices before choosing your answer. Calculator permitted. GOOD LUCK!

QUESTIONNAIRE A

I. MULTIPLE CHOICE QUESTIONS (3 points each)

- Suppose that output per worker is given by $y_t = k_t^\alpha$, where k_t is the capital stock per worker at year t and $\alpha = 1/3$. Workers invest 15% of their income. The capital stock depreciates at the rate of 10% per year. The size of the capital stock per worker at year $t = 0$ is $k_0 = 10$. According to the Solow model, what is the predicted growth rate of output per worker between years 0 and 1. (Assume zero population growth.)
 - 2.3%
 - 1.2%
 - 0%
 - 3.1%
 - 6.3%
- Given the data provided in question 1, what is the predicted steady-state size of the capital stock per worker over the very long run?
 - 1.233
 - 0
 - 1.837
 - 12
 - The Solow model does not allow for a long-run steady-state.
- Which of the following is generally TRUE? According to the *development trap* argument discussed in class,
 - poor countries differ fundamentally from rich ones.
 - any amount of development aid, however small, can help increase a country's long run income level.
 - due to limited natural resources, all countries will have zero income in the long run.
 - lobster traps are good for growth.
 - initial conditions determine a country's long-run income level.

4. Between 1950 and 1980, the rate of growth of output per capita was highest in which of the following countries?
- (a) USA
 - (b) UK
 - (c) Japan
 - (d) Canada
5. Suppose there are two countries that are identical with the following exception: The investment rate in country A is greater than the investment rate in country B. Given this information, in the long run, the Solow model informs us that:
- (a) the capital-labor ratios (k) will be the same in both countries.
 - (b) the growth rate of output per capita will be the same in both countries.
 - (c) the growth rate of output per capita will be greater in B than in A.
 - (d) the growth rate of output per capita will be greater in A than in B.
6. Assume that the GDP/capita for the country of Coronado in 1950 was \$10,000. By 2000, the GDP/capita of this country was \$25,000. Using the yearly average growth rate of income per capita over this period, what is the projected GDP/capita of Coronado in 2020?
- (a) 36,071\$/capita
 - (b) 43,906\$/capita
 - (c) 48,769\$/capita
 - (d) 31,239\$/capita
 - (e) None of the above is anywhere close to the projection.
7. Which of the following is generally TRUE? If one uses the basic Solow model in order to predict the per capita income of countries today and then compare with their actual income, one typically concludes that ...
- (a) the basic Solow model should be discarded.
 - (b) the USA's actual income tends to be higher than the predicted one when compared to almost all countries of the world.
 - (c) the correlation between predicted income and actual income is negative.
 - (d) most countries of the world must have a lower investment rate than that of the USA.
 - (e) All of the above are clearly FALSE.

8. Which of the following is clearly FALSE?
- (a) Over the past 100 years or so, the yearly growth rate of per capita income in Japan has never exceeded that of the USA.
 - (b) For the USA, the yearly growth rate of income per capita in the past 130 years or so has averaged around 1.8%.
 - (c) Between 1820 and today, the inequality levels within countries of the world has remained rather stable.
 - (d) Over the past 10 years or so, African countries make up about half of the top performers in the list of world countries with the highest per capita growth rates.
 - (e) In terms of goods that are traded in world markets, the price of goods that are not traded tends to be higher in rich countries compared to poor countries.
9. Which of the following is clearly FALSE?
- (a) When one looks at the data since 1950, the theory of convergence applies quite well to the experience of today's richer (OECD) countries.
 - (b) When one looks at the data since 1960, the theory of convergence does not apply so well to the experience of African countries.
 - (c) When one compares the standards of living between individuals living in Europe just before the beginning of the industrial revolution (early 1700s) to that of those who lived in Rome one century A.D., they are roughly the same.
 - (d) According to the *Law of one price*, given the market exchange rates, a haircut should cost about the same in India than in Canada.
10. The basic Solow model does a pretty good job at explaining ...
- a) growth in the long run for today's rich countries.
 - b) the high growth rates that Japan experienced during its catch-up phase after the second World War.
 - c) the *fundamental* reason why South Korea is rich today while the Philippines is still poor, even though both had similar income levels in 1960.
 - d) the link between democracy and economic growth.

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c) (10 points) Take the following values: $Y_{1d} = 30,000\$$, $Y_{2d} = 40,000\$$, $W_1 = 10,000\$$ and $r = 10\%$. Suppose that Penelope wants to have a consumption level equal to $35,000\$$ in period 2. How much should she save? Explain your steps.

2. The Solow model (35 points)

a) (20 points) A country is described by the Solow model, with a production function of $y = k^{1/3}$. Suppose that today, k is equal to 600. The fraction of output invested is 30% and the depreciation rate is 2%. How does the output per worker today compare with the steady-state one? Explain your conclusion.
