

Attention: Not all questionnaires are the same. This is questionnaire B. On the answer sheet, you must indicate the letter of your questionnaire with the course's number as follows: **ECO2143B**. You must answer according to the material seen in this course. Read all answer choices before choosing your answer. GOOD LUCK!

QUESTIONNAIRE B

I. MULTIPLE CHOICE QUESTIONS (4 points each)

- (1) Which of the following is not a good example of physical capital?
 - (a) a manufacturing plant
 - (b) an electric drill
 - (c) a computer
 - (d) a classroom
 - (e) a better way to organize work
- (2) Suppose that physical capital and labor are the only two production factors. The assumption of constant returns to scale implies that
 - (a) if the amount of capital doubles but the amount of labor is constant, then total production doubles.
 - (b) if the amount of labor doubles but the amount of capital is constant, then total production doubles.
 - (c) if the amount of capital doubles but the amount of labor is constant, then total production less than doubles.
 - (d) if both the amounts of capital and labor double, then total production doubles.
 - (e) if both the amounts of capital and labor double, then total production less than doubles.
- (3) Suppose that physical capital and labor are the only two production factors and that nothing else varies between countries. An important implication of the constant returns to scale assumption is that
 - (a) income per worker depends only on the quantity of capital per worker.
 - (b) income per worker depends only on the total quantity of capital, independently of the number of workers.
 - (c) the quantity of capital per worker is not helpful in understanding wealth differences between countries.
 - (d) the more capital there is, the less workers produce.
 - (e) there cannot be any long-run steady state equilibrium.

- (4) A study has estimated the quantity of capital per worker in Mexico to be worth 42 991\$(US2000), while that of India is worth 6 270\$(US2000). Which property of the national production function allows us to anticipate that an additional unit of capital will have a larger impact on production in India than in Mexico?
- (a) If capital increases, output increases.
 - (b) The marginal product of capital is decreasing.
 - (c) Constant returns to scale.
 - (d) An efficient use of capital.
 - (e) capital depreciation.
- (5) Which of the following characteristics of physical capital makes it different from natural resources (such as land, forest, minerals, oil, etc) as an input to production?
- (a) Physical capital is productive.
 - (b) Physical capital is produced.
 - (c) Physical capital has limited use, i.e. rival use.
 - (d) Physical capital produces a return to its owner.
 - (e) All of the above choices apply equally well to natural resources.
- (6) In the Solow model with investment rate $s > 0$, the presence of capital depreciation plays an important role to understand income differences between countries because without depreciation
- (a) economic growth would be zero.
 - (b) capital would be useless.
 - (c) there would be no point in making investments.
 - (d) there would not be any steady state equilibrium with a positive income level.
 - (e) economic growth would be negative.
- (7) Suppose that the production of a country can be represented by a Cobb-Douglas production function, i.e. $Y = K^\alpha L^{1-\alpha}$, where variables and parameters are as seen in class. We have seen that the value of parameter α
- (a) is very different between the countries of the world.
 - (b) can be relatively easily estimated by dividing total capital income with total income in a country.
 - (c) must be larger than 1.
 - (d) denotes the number of hours worked.
 - (e) is not very useful to help us understand wealth differences between countries.

- (8) According to a recent study on the evolution of income inequalities between all persons in the world since 1820, it appears that
- (a) World inequalities have increased mainly because of an increase in inequalities between countries.
 - (b) World inequalities have increased mainly because of an increase in inequalities within countries.
 - (c) World inequalities have decreased mainly because of a decrease in inequalities between countries.
 - (d) World inequalities have decreased mainly because of a decrease in inequalities within countries.
 - (e) World inequalities have remained roughly the same.
- (9) Suppose that there are only two goods produced in the world: rice and restaurant meals. Rice is traded on the world market but not restaurant meals. The following table provides information about output quantities and prices for countries *A* and *B*.

Country	rice output per capita	rest. meal output per capita	price rice local currency	price rest. meal local currency
A	8	2	3	9
B	4	1	1	2

What should we expect the market exchange rate between dollars of country *A* and dollars of country *B* to be (assume no-arbitrage possibilities)?

- (a) 1\$A/\$B
 - (b) 2\$A/\$B
 - (c) 3\$A/\$B
 - (d) 4\$A/\$B
 - (e) 5\$A/\$B
- (10) (Question (9) continued.) What should the PPP adjusted exchange rate be?
- (a) 2\$A/\$B
 - (b) $(15/6)\$A/\$B = 2.5\$A/\B
 - (c) 3\$A/\$B
 - (d) $(19/6)\$A/\$B = 3.167\$A/\B
 - (e) $(21/6)\$A/\$B = 3.5\$A/\B
- (11) According to the *development trap* argument,
- (a) all countries in the world are bound to become poor in the future.
 - (b) all countries in the world are bound to become rich in the future.
 - (c) with just a little bit of aid, poor countries could come out of poverty forever.
 - (d) poor countries are poor because they are *fundamentally* different from rich countries and there is nothing that can be done about it.
 - (e) poor countries are not *fundamentally* different from rich countries; it is their initial poverty that keeps them into poverty.

- (12) We have seen that both the Malthus and the Solow models can be used to explain the effects of population growth of people's income levels. A fundamental difference concerning the *basic assumptions* of the two models is that
- (a) the capital depreciation rate is larger with Malthus than Solow.
 - (b) the quantity of production factors is fixed with Malthus while it is endogenous with Solow.
 - (c) population always grows faster with Malthus than Solow.
 - (d) the savings rate is endogenous with Malthus while it is exogenous with Solow.
 - (e) population growth is exogenous with Malthus while it is endogenous with Solow.

II. PROBLEMS

(1) **(20 points) The Solow Model**

- (a) Show, with the help of a graphic and within the framework of the Solow model, how population growth can explain income differences between countries. (NB Make sure to define properly all your variables and curves. Short but complete answers are signs of good comprehension. Information that is not relevant can be detrimental.)

(2) **(20 points) Mortality, fertility and population growth**

- (a) Explain why the mortality transition happened faster in LDCs than in the history of today's rich countries.
- (b) Give three economic arguments explaining the drop in fertility during the 20th century and describe them *briefly*.
- (c) How can we explain the faster population growth in LDCs today compared to the history of today's rich countries?