ECO2143 Macroeconomic Theory II
Final examination: April 19, 2011
University of Ottawa
Professor: Louis Hotte
Time allotted: 3 hours

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. Suppose that Canada and the United States are openly trading with each other. Now assume that Canada suddenly becomes twice as productive in the production of all its goods and services while productivity in the USA remains the same. Based on the comparative advantage argument, what is the likely impact on the USA economy of the higher productivity in Canada?
   (a) None because the opportunity costs of production in Canada are essentially unaffected.
   (b) None because the absolute costs of production in Canada are essentially unaffected.
   (c) Americans will be richer because of the higher productivity in Canada.
   (d) Americans will be poorer because of the higher competitiveness of the Canadian economy.
   (e) Canadian workers will be worse off because higher productivity implies more hours worked.

2. Assume that a country is perfectly open to international trade and to movements of factors of production. Further assume that the law of one price holds, so that the domestic rental rate of capital equals the world rental rate of capital. Knowing this, what is the impact of an increase in the country's domestic savings rate?
   (a) The country will right away experience a large inflow of foreign capital.
   (b) In the long run, the country will move to a higher level of GDP per capita while GNP does not change.
   (c) The increase in domestic savings rate would cause the population growth rate to increase right away.
   (d) In the long run, the country's GNP should be higher whereas GDP will stay roughly unaffected.

3. Which of these would you expect to grow faster in terms of GDP per capita?
   (a) Rich country with protective tariffs on imports
   (b) Poor country closed to trade
   (c) Poor country opened to trade
   (d) Rich country with very large population growth
   (e) Rich country opened to trade

4. Which of the following is FALSE about the comparative advantage argument:
   (a) Exchange can potentially bring benefits to both sides, even when both can produce all the goods being traded.
   (b) All that is necessary for comparative advantage is that the ability to produce be different.

(c) Comparative advantage holds even if one party is much better at producing everything than the other party.
(d) Beneficial trade under comparative advantage is based on differences in opportunity costs of production.
(e) Countries have comparative advantage when their opportunity costs are equal.

5. According to the Solow model, the aggregate output of a closed economy can be represented by the following equation: $Y = AK^{\alpha}L^{1-\alpha} = K^{\alpha}(eL)^{1-\alpha}$ where $e^{1-\alpha} \equiv A$. Suppose that productivity grows at rate $\hat{A}$. Assuming that the investment rate, depreciation rate and population growth are all constant, at what rate does output per effective worker Y/eL grow in the long run steady state?
(a) $n + \hat{e}$
(b) n
(c) $\gamma - \delta$
(d) 0
(e) $\hat{e}$

6. Calculate the Solow residual $\hat{A}$ for the 10 year period based on the following information for a country: (Assume Cobb-Douglas production function $Y = AK^{\alpha}L^{1-\alpha}$, where $\alpha = 0.5$.)

Year	2000	2010
Capital stock K	225	324
Labor size L	400	484
Output Y	360	535

(a) 1.23%
(b) 1.61%
(c) 2.12%
(d) 2.57%
(e) By definition, the Solow residual must be 0.

7. Which of the following is TRUE?
(a) According to the Malthusian model of population and economic growth, a technological improvement leads to higher standards of living in the long run.
(b) The Malthusian model of population and economic growth is useful to explain increases in standards of living in the developed world over the last 200 years.
(c) A drop in the mortality rate can lead to lower fertility through the effect of increased incentives to invest in a child's education.
(d) A drop in the mortality rate can only lead to higher population growth in the long run.
(e) Better access to contraceptives is the leading explanation for lower population growth in today's developed world.

8. According to observations, which of the following assertions is TRUE?
(a) Productivity differences between the countries of the world are not very important. We should thus look elsewhere to target development aid.

(b) Differences in the quantities of accumulated factors of production between the countries of the world are not very important. We should thus look elsewhere to target development aid.
(c) For most of the countries of the world, differences in the quantities of accumulated factors of production are the most important to explain differences in wealth levels. Development should thus target solely factor accumulation in the form of physical and human capital.
(d) For most of the countries of the world, differences in productivity are the most important to explain differences in wealth levels. Development should thus target solely increases in productivity.
(e) All of the above are false.

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	12	3	2	10
B	4	1	1	2

Based on the absence of arbitrage possibilities, the market exchange rate between dollars of country A and dollars of country B predicts a GDP ratio Y_A/Y_B equal to
(a) 1
(b) 2.5
(c) 3
(d) 4
(e) 4.5

10. (Question 9. continued.) What should the PPP adjusted exchange rate be?
(a) 0.5\$A/\$B
(b) 3\$A/\$B
(c) 5\$A/\$B
(d) 9\$A/\$B
(e) None of the above

Your friendly TA's bonus question:

11. Which of the following is clearly FALSE:
(a) GDP is the sum of all income earned by factors of production located in a given country.
(b) GNP is the sum of all income earned by factors of production owned by the residents of a given country.
(c) A developing country with lots of foreign investment within will likely have a higher GDP than GNP.
(d) The wages of a Mexican worker who takes a temporary job in Canada will count as part of Mexican GDP, and not Canadian GDP.
(e) None of the above

II. PROBLEM

Answer within the space provided. Your answers must be accompanied with clear explanations. Graphs and equations without explanations will not get you far.

1. Open economies and factor movements (20 points)

In the chapter on economic efficiency, we have seen that an impediment to the free flow of labor between the rural and the urban sectors of an economy can lead to an inefficient allocation of labor between the two sectors. A graphic was used to illustrate the problem. The same type of graphical argument can be made to study the effect of labor movements between two countries simply by replacing the urban and rural sectors with country A and country B respectively. With the help of a graphic, therefore, explain why the free movement of labor between Mexico and the USA is likely to increase the joint output of the countries. Assume that each country has a total population of L_A and L_B respectively. Explain intuitively with words. Why is it, then, that the US border remains virtually closed to the free movement of labor?

2. Determinants of growth and wealth (40 points)

Read the following excerpt from an article recently published by the periodical *The Zimbabwean* and answer the questions below.

Cattle Rustling Decimates Herd[1]

Written by Lovejoy Sakala

Friday, 01 April 2011 13:45

HARARE – The amount of cows in the country has fallen from 6.19 million to 5.11 million in the last decade due to rampant cattle rustling.

This follows the chaotic and often violent land grab by the Zanu (PF) government which forced former white commercial farmers out of their productive farms. According to the police Anti-Stocktheft Unit, 350 beasts have been recovered from January to March 2011, while 134 people were arrested for cattle rustling. Police also accused unlicensed butcheries for fuelling cattle rustling operations in the country.

"The availability of a ready market of unscrupulous butchers in both urban and newly resettled areas is contributing to the increase in thefts of cattle," said ZRP Anti-stocktheft Unit coordinator, Assistant Commissioner Bernard Dumbura.

He said the police were working round the clock to eradicate stock theft in the country that has so negatively impacted the growth of the economy. Dumbura also said they closed 175 butcheries and 124 food outlets that have failed to disclose their sources of meat and records of purchase.

"We have intensified our operations and we urge farmers to take protective measures such as branding their cattle," he said.

Zimbabwe has, since 2000, failed to meet its meat export quota to European markets after commercial farmers who specialises in cattle ranching were driven out of farms.

In this course, we have considered in turn the major factors suspected of explaining long-run economic growth and wealth differences between countries. We called them the "proximate" determinants of growth.

a) **(10)** Enumerate all the proximate determinants of growth that we have studied in this course. (Do not describe them. Just list them.)

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[1] cattle rustling = cattle theft

b) **(15)** The above article relates *precisely* to one of those proximate determinants now affecting Zimbabwe. Identify which one and describe it in general terms. Then justify why you think that the case reported in the article fits that description.

c) **(15)** Explain how you could use the method of *Development Accounting* to measure the extent to which the determinant proposed in part b) can explain differences in income levels between Canada and Zimbabwe. (Suggestion: Begin by explaining briefly which data you would need and why.)