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 (1 point each)

1. Which of the following assertions is *clearly* FALSE.
    (a) For Malthus, the only way to improve living standards in the long run is through increased land productivity.
    (b) Before 1800, humans generally lived at the subsistence level without much differences through time and places.
    (c) The Malthus model does a pretty good job at explaining long run per capita economic growth before 1800.
    (d) In Ireland, the introduction of the potato crop from the Americas may have contributed to improving the standards of living in the short run.

2. Which of the following is clearly FALSE?
    (a) The intertemporal budget constraint (IBC) implies that the present value of lifetime consumption levels equals the present value of lifetime wealth and income (lifetime resources).
    (b) Convex indifference curves imply that consumers have a tendency to smooth consumption over time.
    (c) Let r denote the interest rate over savings and borrowing. Then a consumer is indifferent between $(1 + r)$ dollar today and 1 dollar at the next period.
    (d) In the absence of borrowing constraints, consumers will try to equate the marginal rate of substitution (MRS) between two periods's consumption levels with $-(1 + r)$.
    (e) In the presence of borrowing constraints, consumers may not be able to equate their MRS with $-(1 + r)$.

3. Which of the following is TRUE?
    (a) In LDCs (less-developed countries), we typically observe large differences between the *desired* fertility and the *actual* fertility.
    (b) In ICs (industrialized countries) during the 19th century, the drops in fertility rates is mostly explained by the introduction of new contraceptive methods.
    (c) When comparing the *desired* fertility and the *actual* fertility in LDCs today, one readily concludes that making new contraceptive methods easily accessible is a highly effective policy to reduce fertility rates.
    (d) Because of the suspected strong feedbacks effects, educating girls and giving them access to the labor market can contribute significantly to reducing the fertility rates.

4. Which of the following assertions CLEARLY DOES NOT correspond to what you learned in this course?

   Through the history of ICs, population growth has never reached such high levels as observed today in many LDCs partly because
   a) in many LDCs, the mortality rate has fallen *more rapidly* than in the history of ICs.
   b) in many ICs, the fertility rate dropped *before* the drop in the mortality rate.
   c) in many LDCs, the fertility rate does not drop *as much* to compensate for the lower mortality rate.
   d) in many ICs, the factors explaining the drop in the mortality rate occurred in sequence.

5. 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.

6. Suppose that two countries, A and B, have the same rates of investment and depreciation, the same levels of productivity, and the same levels of output per worker today. Population growth is however greater in country A than B. Which of the following is true according to the Solow model:
   (a) Country B has more capital per worker than country A.
   (b) Country A has more capital per worker than country B.
   (c) The present growth rate of output per worker is larger in country B than A.
   (d) The present growth rate of output per worker is larger in country A than B.

7. Which of the following statement DOES NOT correspond well to the *Development Trap* argument:
   (a) A major jump in development aid efforts may be quite effective in the long run despite the fact that past, smaller development aid efforts have not been very effective.
   (b) For any economy, there can exist more than one long run steady-sate equilibrium with positive output levels.
   (c) Initial conditions are an important determinant of the long run steady-state equilibrium.
   (d) Rich and poor countries are not fundamentally different.
   (e) Any small amount of development aid will help a poor country become richer in the long run.

8. According to the theory of intertemporal choice that we saw in class, for net savers, an increase in the interest rate
   (a) will always lead consumers to increase today's consumption level and decrease that of tomorrow.
   (b) will always lead consumers to increase today's consumption level and increase that of tomorrow.
   (c) will lead consumers to decrease present consumption if the substitution effect is stronger than the wealth effect.
   (d) will lead consumers to increase present consumption according to the evidence.

9. 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.

10. 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.)
    (a) -2.3%
    (b) -1.2%
    (c) 0%
    (d) 3.1%
    (e) 6.3%

11. Given the data provided in question 10, what is the predicted steady-state size of the capital stock per worker over the very long run?
    (a) -1.233
    (b) 0
    (c) 1.837
    (d) 12
    (e) The Solow model does not allow for a long-run steady-state.

12. 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.

13. The Solow model does a pretty good job at explaining
    (a) growth in the long run for industrialized countries.
    (b) why physical capital cannot explain differences in income levels between countries.
    (c) the role of protection of property rights in explaining South Korea's high economic growth in the 1960's.
    (d) the link between democracy and economic growth.
    (e) the high growth rates that China has experienced over the past 20 years or so.

14. Income per capita in a country is given by $y = k^\alpha$, where k is capital per capita and $\alpha = 1/3$. In country A, the depreciation and investment rates are respectively $\delta_A = 10\%$ and $\gamma_A = 5\%$ while in country B, we have $\delta_B = 5\%$ and $\gamma_B = 10\%$. According to the Solow model, what is the long-run ratio of per-capita incomes y_A^{ss}/y_B^{ss}?
    (a) $\sqrt{0.5}$

   (b) 0.5
   (c) $2^{\frac{1}{3}}$
   (d) $\sqrt{2}$
   (e) 1

15. Which of the following is FALSE. Assuming that the investment rate equals the savings rates, then, according to the basic Solow model, an increase in the savings rate
    a) always increases the long-run income level.
    b) has no impact on the long-run income growth rate.
    c) always increases the long-run consumption level.
    d) always increases the short-run income growth rate.

16. 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.

17. 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.

18. Suppose the following aggregate variables for a country: Y = GDP, C = consumption, S = savings, I = investment, IM = imports, X = exports, T = taxes, G = government purchases, TR = transfers. The GDP by expenditure shares can be expressed as
    (a) $Y = C + I + G + X - IM$
    (b) $Y = C + S + G + X - IM$
    (c) $Y = C + I + T + TR$
    (d) $Y = C + I + G - T + TR$
    (e) $Y = C + I + X - IM$

19. In Canada in 2010, aggregate consumption represented approximately the following share of GDP:
    (a) 18%
    (b) 24%
    (c) 31%
    (d) 44%
    (e) 58%

20. In Canada in 2010, aggregate investments by firms and households represented approximately the following share of GDP:

(a) 18%
(b) 24%
(c) 31%
(d) 44%
(e) 58%

21. Take the basic Solow model with no population growth and the following Cobb-Douglas per-capita production function: $y = k^\alpha$, $\alpha = 1/3$. The capital depreciation rate is 10%. The amounts of savings and investments are equal (i.e., everything that is saved is invested). Among the following, which savings rate corresponds to the highest long-run <u>consumption</u> level?
    (a) 5%
    (b) 10%
    (c) 30%
    (d) 60%
    (e) 100%

22. Take the economy of question 21 again. Among the following, which savings rate corresponds to the highest long-run <u>income</u> level?
    (a) 5%
    (b) 10%
    (c) 30%
    (d) 60%
    (e) 100%

23. Take the basic Solow model with no population growth and the following Cobb-Douglas per-capita production function: $y = Ak^\alpha$ where $\alpha = 1/3$ and $A = 10$. The depreciation and investment rates are respectively $\delta = 7\%$ and $\gamma = 5\%$. Define the growth rate of capital as $\hat{k}_t = \Delta k_t / k_t$ where $\Delta k_t = k_{t+1} - k_t$. Suppose that $k_0 = 10$. The growth rate of capital during period $t = 0$ will be equal to
    (a) -12.23%
    (b) -2.15%
    (c) 0%
    (d) 1.50%
    (e) 3.77%

24. Take the economy of question 23 again. Its steady-sate income per capita is
    (a) 2.15
    (b) 19.1
    (c) 26.7
    (d) 35.8
    (e) 52

25. Suppose that the economies of both countries A and B can be represented by the economy of question 23. The only thing that distinguishes the two economies at period $t = 0$ is their capital stocks, which are given by $k_0^A = 10$ and $k_0^B = 15$ respectively. Which of the following is FALSE at period $t = 0$:
    (a) Country B has a higher per capita income growth rate than country A.
    (b) Country B has a higher per capita income than country A.
    (c) Country B has a higher per capita investment level than country A.
    (d) Country B has a higher per capita depreciation level than country A.

26. Which of the following is *clearly* FALSE?
    (a) For classical economists living in the early 1800's, land is the most important factor of production (other than labor).
    (b) For many development economists in the 1940s and 1950s, capital accumulation was the key to economic development.
    (c) The concentration of development aid efforts towards capital accumulation is considered a very successful strategy.
    (d) Today, education is considered to play an important role in explaining development.
    (e) Today, "women empowerment" is considered to be an important element in the development strategy of a poor economy.

27. Suppose that in Country A, 1/4 of all girls die at age 5 and the remaining 3/4 die at age 100. In addition, suppose that of the women who die at age 100 have, on average, 6 children: 4 boys and 2 girls. What will the net rate of reproduction be?
    (a) 0.5
    (b) 1.5
    (c) 1
    (d) 9

28. Suppose that in a country one-fifth of all females born die at age 25, one-fifth die at age 32, and three-fifth live to age 60. On average, women bear one child at age 20, one child at age 28, and one child at age 35. One-half of children are girls. The *total fertility rate* is
    (a) 0.500
    (b) 1.125
    (c) 1.200
    (d) 1.525
    (e) 3.000

29. Assume two countries (1 and 2) have the same values of A (a constant productivity level) and γ (investment as percentage of output). Country 1 has a depreciation rate $\delta = 0.05$ and population growth $n = 0.02$. Country 2 has a depreciation rate $\delta = 0.06$ and population growth $n = 0.03$. According to the Solow model, what can be said about their relative steady state variables?
    (a) Country 1 has a lower steady state stock of capital per capita.
    (b) Country 2 has a lower steady state level of income per capita.
    (c) There is no difference in their steady state levels of income per capita.
    (d) In the steady state, per capita income will grow faster in country 1 than country 2.
    (e) In the steady state, per capita income will grow faster in country 2 than country 1.

30. Suppose that there are two countries, Abysus and Chimerica, that differ in both their rates of investment and their population growth. In Abysus, investment is 6% of GDP and population grows at 4% per year. In Chimerica, investment is 20% of GDP and population grows at 2% per year. Further assume that both countries have the same constant level of productivity (A), that capital's share of national income (α) is 1/3 and that their depreciation rates (δ) are both 5%. Using this information, what is the ratio of the two countries' steady-state levels of income per capita (y_a^{ss}/y_c^{ss})?
    (a) 0.48
    (b) 1.52
    (c) 0.76
    (d) 0.38
    (e) 1.47