University of Connecticut
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Fall 2009, Intermediate Macroeconomics, section 1

ECON 219 Mid-term exam II

Name:

General recommendations:

- Read questions thoroughly and answer each.
- Work individually.
- There are four pages.
- No documentation, cell phones, pagers, calculators and bathroom breaks.
- You have until 10:50 and can leave early, if you wish.

1. **[40%]** Circle the correct answer to each of the following questions. Note that there may be several correct answers.
   (a) In the Malthus model, the introduction of a new disease leads, in the long run, to
      i. lower population;
      ii. higher population;
      iii. a lower standard of living;
      iv. a higher standard of living.
   (b) In the Solow model, an increase in the population growth rate leads, in the long run, to
      i. lower output growth;
      ii. higher output growth;
      iii. a lower standard of living;
      iv. a higher standard of living.
   (c) In the endogenous growth model with human capital, an increase in the efficiency of schools leads to
      i. lower output growth;
      ii. higher output growth;
      iii. a drop in output;
      iv. a jump in output.

(d) In the intertemporal model of the business cycle, an increase in future income leads to
   i. an decrease in consumption;
   ii. no change in consumption;
   iii. a small increase in consumption;
   iv. a large increase in consumption.

(e) In the same model, increasing the deficit of the government leads to
   i. an increase in current consumption;
   ii. an increase in future consumption;
   iii. an increase in savings;
   iv. a decrease in savings.

(f) With the Golden Rule savings rate,
   i. savings are as high as sustainable;
   ii. the economy just avoids a development trap;
   iii. fertility is as high as possible;
   iv. the capital/output ratio is minimized.

2. **[7.5%]** Explain why we are working with so many different models.

3. **[7.5%]** Explain why human capital leads to sustained growth in the endogenous growth model. What is the critical property and why?

4. **[25%]** Intertemporal model of the business cycle.

   (a) Suppose that there is an increase in current income. What does this imply for savings and current consumption? What stylized fact can this explain?
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(b) Explain what permanent income is. How is it affected by the experiment in (a)?

(c) Explain what the Ricardian equivalence is.

(d) Suppose the government taxes away in the future the increase in the future income. What happens to consumption compared to the initial case (before the increase in future income)? Why? What about taxing it away in the first period?

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6. **[Bonus: 10%]** Taking the intertemporal model of the business cycle we have seen so far. What would be different if we had many, possibly infinitely many, periods instead of just two? Distinguish qualitative (i.e., effects changing signs) from quantitative results (i.e., amplitude of effects changing).

5. **[20%]** Assume an economy is at the steady state in the Solow growth model. Assume no technological progress.

   (a) Suppose the savings rate increases. What impact does this have immediately on consumption per capita, capital per capita and aggregate output? Support this with a graph.

   (b) What happens thereafter with all these variables? Graphs of their evolution over time can be helpful.