Wilfrid W. Csaplar Jr., Ph.D.   Economics 260   Final Exam   2021/5/3

Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet.
Failure to follow these directions will cost you 1 point. The test has 240 points (to be scaled down to 150
points) and is scheduled to take 120 minutes. Therefore, expect to spend 1 minute for every 2 points. For
example, a 12-point question should take 6 minutes. I can give some extra time.

1) (12 points) Answer EITHER Part A OR Part B.
A) In addition to calculating the HDI, the UN calculates a version of the HDI adjusted for inequality.
Why do they do that?
B) Why do we use GNI to calculate the HDI rather than GDP?

2) (14 points) Answer EITHER Part A OR Part B.
A) Delaware is a long thin state. Using one of the criteria we have for a good tax, explain why Delaware
has no sales tax.
B) What is meant by micro-finance. Explain how it helps developing countries.

3) (16 points) The book lists six characteristics of rapidly growing economies. For EITHER
macroeconomic and political stability OR *effective governance*, explain what that means and how that
helps the economy to grow.

4) (14 points) Answer EITHER Part A OR Part B.
A) Without going through a mathematical example (this is only 14 points) explain population momentum.
B) Explain what the DOTS method is and why it is so important.

5) (18 points) The Washington Consensus listed many things a country should do to become richer. For
EITHER *secure property rights* OR *liberalization of interest rates*, explain what that means and why a
country should do that.

6) (18 points) I just discovered that about three years ago, Swaziland officially changed its name to
Eswatini. Their average life expectancy is 60 and their median age is 23.7 years old. Using just that
information, draw EITHER the population pyramid OR the mortality pyramid. Explain why you drew the
graph as you drew it.

7) (18 points) Answer EITHER Part A OR Part B.
A) Explain how taxing pollution and tradable pollution permits (cap-and-trade) can result in the same
pollution reduction for the same cost. Also explain how they differ in the long-run.
B) Draw the Environmental Kuznets Curve which you think is the most accurate. Explain why you think
that is the best one.

8) (18 points) Answer EITHER Part A OR Part B.
A) What does it mean that a country is *insolvent*? Give me an example in your explanation. For
example, you might say a country is insolvent if they have a high GDP per capita without specifying what
you mean by high. Then explain why a high value is bad.
B) What does it mean that a country is *illiquid*? Give me an example in your explanation. For example,
you might say a country is insolvent if they have a high GDP per capita without specifying what you
mean by high. Then explain why a high value is bad.

9) (22 points) Answer EITHER Part A OR Part B.
A) Draw the MEC/MAC diagram the way I drew it in class. Explain why each of the curves takes its
shape. Prove that the point where the two curves cross is the optimal point.

B) Draw the SMC/PMC/D diagram. Explain the reason you drew the shape and distance between the two MC curves. Use your diagram to prove that the market will not produce the optimal quantity.

10) (24 points) Answer EITHER Part A OR Part B.
A) Draw the two-sector labor market graph with a minimum wage. Illustrate the effects of an improved technology in the manufacturing sector. Explain why the curve(s) moved as drawn. Draw on the graph the wages in the two sectors before and after the change. What happens to the number of people in each sector?
B) According to the presentation in ECON 113, the Gini Coefficient for Russia is just over .33. Draw the Lorenz Curve which you think that Russia's Lorenz Curve looks like. Explain why you feel that the Gini Coefficient is about .33.

11) (26 points) Answer EITHER Part A OR Part B.
A) Two of the rows from the calculation of the life expectancy for a fictitious country is created below. Fill in the blanks. Show all work. For the entry in Column 4, you cannot directly calculate it, but you can give an estimate. State how you got the estimate.

Age	1 Proportion dying in interval	2 Number living at the beginning of interval	3 Number dying during the age interval	4 Person-years lived in age interval	5 Person-years live here and in future years	6 Years of life remaining
55-60	0.1	70,000				
60-65	0.2		12,600	283,500	1,067,500	16.94

B) Suppose that a country has an average life expectancy of 60, GNI per capita of $20,000, expected schooling of 12 years, and a mean schooling of 10 years. Setup the three calculations which go into the calculation of the HDI. Do not actually calculate them. Call their values X, Y, and Z or any three letters of your choosing. Show me how you would calculate the HDI from those three values.

12) (28 points) Answer EITHER Part A OR Part B.
A) Suppose a factory will take two years to build at a cost of $500 per year. That costs includes $100 of foreign exchange and $300 of labor. Over the next five years, it will bring in $400 of profits per year. Those profits include $200 per year of foreign exchange coming into the country and paying workers $250 per year. After five years, they can sell the factory for $200. Do NOT set up the calculation for the net present value for the company. Suppose the shadow price of labor is 80% of the market wage and the shadow price of the foreign exchange is 30% higher than the official exchange rate. Set up the calculation for the social NPV if the interest rate is 10%. Briefly explain how you got the numbers. Do NOT do the calculation.
B) Suppose that a secondary education takes four years. It costs the students $500/year to go to school and the government $400/year per student. The student could be earning $3000/year if they go to work straight out of primary school. If they go to school for the four years, they can make $4000/year. Suppose the positive externalities of the student going to school is $100/year for each year the student works. Suppose their current age is 14 and regardless of whether they go to secondary school, they will work through age 65 and retire at age 67. Do NOT set up the calculation for their private return. Set up the calculation which would give you the return to society. State how you got each number. Without doing the calculation, explain how you use the equation to determine the social rate of return.

13) (12 points) What do you think is the most important topic that I left off of this exam? Explain why that topic is so important.