

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 150 points (to be scaled up to 210 points) and is scheduled to take 75 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I can give extra time but not much.

1) (12 points) Answer EITHER Part A OR Part B.

- A) What does a gross enrollment rate of over 100% mean? That is both good and bad for the economy. In your opinion, is that a good sign for the country or a bad sign? Explain your logic.
- B) Which type of education has the largest private return? Explain your logic.

2) (12 points) Answer EITHER Part A OR Part B.

- A) What is involved in the DOTS method? Why is it important?
- B) Explain the difference between HALE and the traditional life expectancy. Use an example in your explanation.

3) (14 points) Answer EITHER Part A OR Part B.

- A) Is the shadow price of labor greater or less than the wage rate? Explain your logic.
- B) Egypt has a law which makes it very difficult to fire an employee. Is this a law which will help or deter economic growth in the future? Explain your logic.

4) (14 points) Answer EITHER Part A OR Part B.

- A) Draw the demographic transition graph which is normal for most countries as they develop. Explain why the curve looks as drawn.
- B) Chairman Mao felt that a large population was a strength. Do you agree with him or not? Explain your logic.

5) (16 points) Answer EITHER Part A OR Part B.

- A) How can the government encourage pro-poor growth of the economy rather than just any growth of the economy? Explain what makes that type of growth pro-poor.
- B) Explain the difference between the poverty head count and the poverty gap. Why is the poverty gap a better indicator of how poor the country is? Explain your logic.

6) (16 points) Answer EITHER Part A OR Part B.

- A) China implemented their “one child” policy to stop their population from growing past 1 billion. However, their population broke 1.2 billion. One reason it went past 1 billion was illegal births and corruption. The other reason was one we discussed in class which applies to all countries who are trying to stop their population from growing. Explain that reason why the Chinese population kept growing.
- B) What is the *dependency ratio*? Why is a large ratio bad for an economy? Explain your logic.

7) (18 points) Answer EITHER Part A OR Part B.

- A) According to UNESCO, in Sub-Saharan Africa, 9 million girls between the ages of 6 and 11 will never go to school compared to 6 million boys. Why is the difference in the number of girls getting education versus boys getting an education important? What do you think is the main cause of the

difference? What can the government do to reduce that problem? Include in your answer how the proposal would reduce the problem and how it would be financed.

<http://uis.unesco.org/en/topic/education-africa>

B) The statistics given above show 15 million children in Africa will not get any education. Why is this important? What do you think is biggest reason that there are so many people in parts of Africa without any education? What can the government do about that? Include in your answer how the proposal would reduce the problem and how it would be financed.

8) (24 points) Answer EITHER Part A OR Part B.

A) Suppose that a secondary education takes four years. It costs the students \$500/year to go to school. They could be earning \$5000/year if they go to work straight out of primary school. If they go to school for the four years, they can make \$6000/year. Suppose their current age is 14 and regardless of whether they go to secondary school, they will work until age 70. Set up the calculation for their private return. State how you got each number. Without doing the calculation explain how you use the equation to determine the private rate of return. If I asked you to calculate society's return, what additional information would you need? Explain how that would change your numbers.

B) Suppose a factory takes two years to build at a cost of \$1000/year. The factory will make profits of \$300 per year for 4 years. At the end of the four years, the factory can be sold for \$1200. Set up the calculation for the private return. State how you got each number. Without doing the calculation explain how you use the equation to determine the private rate of return. If I asked you to calculate society's return, what additional information would you need? Explain how that would change your numbers.

9) (24 points) Answer EITHER Part A OR Part B.

A) Pretend the following rows were from a calculation of the expected life expectancy. 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. What age would somebody who is currently 70 to die at? State how you reached that conclusion.

| 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 |
|-------|--------------------------------|--|--|--------------------------------------|--|---------------------------|
| 65-70 | 0.2                            | 60,000                                       |  |                                      |  |                           |
| 70-75 | 0.25                           |  | 12,000                                 | 210,000                              | 600,000                                      | 12.5                      |

B) Suppose 60% off all people who died in a particular year died before their first birthday. The rest of the people who died, died at the age of 80. Draw the mortality pyramid for that country. State how you decided what it looked like. What would your estimate of life expectancy at birth will be? Explain your logic.