

DEMOGRAPHY AND ECOLOGY PRELIMINARY EXAMINATION
JANUARY, 2004
MORNING EXAM

I. ANSWER A OR B

A. A major finding of the European Fertility Project was that fertility decline occurred rapidly within a geographic area, so that a map of Europe, showing the date by which fertility had declined by about 10 percent resembles a linguistic map of the countries, as does a map of the residuals when fertility is estimated from a regression on a series of social and economic indicators. This finding led to new theoretical developments. Briefly describe such theories that are intended to extend our notions of the causes of fertility change beyond socioeconomic development.

B. Demographers are notoriously bad at predicting the future. Yet we do so on a regular basis. Now it's your turn. What will be the course of fertility in the U.S. in the next coming decades? Justify your prediction by citing specific arguments and evaluating them, and offer your own assessment.

II. ANSWER A OR B

A. Childhood mortality rates that are higher for girls than for boys are common through-out South East Asia. Some analysts have suggested that as educational levels of mothers and access to health care services improve, we should find a reduction in sex mortality differentials in this region.

1. Discuss the evidence on excess female mortality in childhood, i.e., is there a generalized tendency to give preferential treatment to boys over girls? Does the evidence support the hypothesis that increased levels of schooling and access to health care services will reduce excess female mortality?

2. What factors (behavioral) are likely to account for the mortality differentials you discussed above? You have available to you all the census, vital statistics, and survey data you need to test the explanations you gave. How would you analyze your data to test your hypothesis? Give an example of how you would interpret your results. Be as specific as possible.

B. One of the primary changes in the past century has been in the amount of time people are alive, but out of the labor force. Discuss how labor force participation and retirement patterns have changed in the century in a developed country such as the United States. What are the primary factors motivating this change, and who benefits from lowering the average age at retirement?

III. ANSWER A OR B

A. Discuss the potential effects of international migration on changes in the following: total fertility rate, age structure, sex ratio, proportion population urban, and ethnic population composition. In your answer you should cite the appropriate literature, and be specific both with respect to the nature of the change and why you would expect the change to occur.

B. Demographers often cast social change in terms of cohort replacement and/or period change. Define, describe, and contrast these two processes. Pick two concrete demographic phenomena that in your opinion illustrate each. Explain why, using evidence drawn from the demographic research literature.

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AFTERNOON EXAM

I. ANSWER A OR B

A. The United Nations has sent you to Poplandia to be the first resident demographer advisor. You find yourself in a beautiful fertile land and begin investigating its mortality pattern. You find that at every age, the mortality rate is 10 per 1,000. From this single fact, you answer the following questions.

1. What is the life expectancy at age 80, the last age in your life table?
2. What is the life expectancy at birth?
3. What proportion of children born in Poplandia die before their 10th birthday? (You need not do the arithmetic, only set up the equation.)
4. The population size is carefully controlled to be constant in Poplandia. What is the Crude Birth Rate of the population?
5. If the sex ratio at birth is 100 and males and females have exactly the same mortality rates, how would you go about calculating the General Fertility Rate?

B. Outline a proof that a closed population with a constant life table and a constant growth rate in the annual number of births has a constant age structure. In which way does Lotka's "stable population" demonstration differ from the proof outlined above?

II. ANSWER A OR B

A. Historically, the relative contribution of natural increase and migration to urban growth have varied substantially over time and region of the world. What theoretical framework(s) can you draw upon to explain both the general variation in the contribution of these two components of change, as well as why one component exceeds the other component in its effects on urban growth rates at specific points in time.

B. Some time ago, Wilbur Zelinski (?) advanced the hypothesis of a migration transition involving changes in the composition, volume, and direction of migration between sub-national units of nation-states (rural/urban, states, regions); changes which might possibly be related to changes in vital rates. First, outline Zelinski's hypothesis of the migration transition. Second, cite and discuss findings from the appropriate literature relevant to evaluating Zelinski's hypothesis with respect to changes in the volume, composition, and direction of migration as a nation-state achieves advanced levels of socioeconomic development.

(See page two for Section III.)

III. ANSWER A OR B

A. The current administration's policy focus on the promotion of marriage has been the subject of much discussion. First, describe the changes in nuptiality that are at the center of this policy discussion. Second, discuss the policy implication of recent (i.e., during the past 20-30 years) changes in nuptiality. That is, why are policy makers concerned about current patterns of nuptiality in this country? What are seen as the potential benefits of policy efforts to influence nuptiality? Under what conditions would you expect these potential benefits to be realized?

B. In Israel today, many politicians are saying "Demography is destiny." How is demography shaping policy in Israel today? Be as specific as you can.