# Reading 76

## Demographic Transition

Historically, as countries have developed industrially, they have undergone declines in death rates followed by declines in birth rates. Over time they have tended to move from rapid increases in population to slower increases, then to zero growth and finally to population decreases. The model which demographers use to help explain these changes in population growth is known as the demographic transition model. In order to properly appreciate the demographic transition model, it is necessary to understand two basic concepts: the crude* birth rate (CBR) and the crude death rate (CDR). The CBR is determined by taking the number of births in a country in a given year and dividing **it** by the total population of the country and then multiplying the answer by one thousand. So, for example, the CBR of the United States in 2004 was 14 (in other words, there were 14 births per thousand living people in that year). CDR is worked out in a similar way. The CDR for the United States in 2004 was 8 per thousand.

The first stage of the demographic transition model **portrays** a preindustrial era when both the birth rate and the death rate were high. Typically, women gave birth to a large number of babies. This was partly due to cultural and religious pressures but also because families required a large number of children, since often many didn't survive into adulthood due to the harsh living conditions. Furthermore, children were needed to help adults work the land or perform other chores. The death rate was high due to the high incidence of diseases and famine and also because of poor hygiene. Total population tended to fluctuate due to occasional epidemics, but overall there was only a very gradual long-term increase during this stage.

During the second stage, improvements in hygiene, medical care, and food production led to a decrease in the death rate in newly industrializing regions of Western Europe. However, birth rates remained high due to tradition and because many people were involved in **agrarian** occupations. The combination of a lowered CDR and a stable CBR led to dramatic increases in population starting at the beginning of the nineteenth century.

In stage three, birth rates also began to fall. [A] In cities there was less incentive to produce large numbers of children, since city dwellers no longer worked the land, and the cost of raising children in an urban environment was greater than in rural districts. [B]

Furthermore, more children survived into adulthood due to improved living conditions. [C] These economic pressures led to a lower CBR and over time the numbers of people being born started to approximate the numbers dying. [D]

The final stage, which some demographers have called the postindustrial stage, occurs when birth rates and death rates are about equal. In this case there is zero natural population growth. Over time the birth rate may fall below the death rate, and without immigration the total population may slowly decrease. By the early twenty-first century, several European countries were experiencing population declines due to the CDR outstripping the CBR. For example, in Italy in 2004 there were about 9 births per thousand against 10 deaths per thousand.

The demographic transition took about 200 years to complete in Europe. Many developing countries are still in stage two of the demographic transition model: births far outstrip deaths. In these countries, CDR has declined due to improvements in sanitation and increases in food productivity, but the birth rate has still not adjusted downward to the new realities of improved living conditions. This imbalance of births over deaths in the developing world is the fundamental reason for the dramatic population explosion in the latter half of the twentieth century. However, population statistics indicate that in many less developed countries the CBRs have begun to decline over recent decades, giving rise to optimism in some quarters about future trends. The rapid industrialization of many parts of the developing world has meant that these countries have reached stage three of the model much faster than countries in the developed world did during the nineteenth century. This fact has led many demographers to predict that world population will reach an **equilibrium** level sooner and at a lower total than more pessimistic earlier predictions.

*crude: not analyzed into specific classes

13. The word "it" ("dividing **it** by the total population") in the passage refers to
A population
B year
C country
D number

14. According to paragraph 1, what is useful about the demographic transition model?
A It helps explain trends in population growth over time.
B It can be used to measure birth and death rates.
C It clarifies the causes of population increase.
D It predicts the relative speed of population patterns.

15. The word "portrays" in the passage is closest in meaning to
A suggests
B represents
C transmits
D associates

16. In paragraph 2, which of the following is NOT mentioned as relevant to the high birth rates in the preindustrial stage?
A The high level of childhood deaths
B The need for help in work situations
C The pressures of tradition
D The high rate of maternal deaths

17. What can be inferred from paragraph 2 about the effect of epidemic diseases on population during the preindustrial stage?
A They tended to dramatically lower the population growth.
B They caused the population to decline temporarily.
C They reduced overall population significantly.
D They led to sudden overall increases in the birth rate.

18. The word "agrarian" in the passage is closest in meaning to
A basic
B menial
C farming
D village

19. According to paragraph 4, what was one of the main causes of the drop in birth rates?
A The improvements in hygiene
B The lack of agricultural work
C The development of urbanization
D The superior environment

20. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
A The population gradually declines when there is no immigration and deaths exceed births.
B In time there may be an overall drop in population as the birth rate and death rate fluctuate.
C The relationship between birth and death rates is an important reason for limiting immigration.
D If population losses aren't replaced through immigration, the birth rate may fall below the death rate.

21. The word "equilibrium" in the passage is closest in meaning to

A economic

B stable

C variable

D fixed

22. According to paragraph 6, what is at the root of the huge population increases during the twentieth century?

A The improvements in health throughout the developing world

B The fact that birth rates are increasing in many countries

C The lack of resources in many developing countries

D The failure of the CDR to respond to economic pressures

23. Why does the author mention the optimism felt in some quarters about future population trends?

A To introduce the fact that birth rates in some developing countries may be declining faster than anticipated

B To emphasize that most researchers have taken a pessimistic view of population expansion

C To show that the demographic transition is a valid model of population trends

D To suggest that some countries have worked hard at reducing birth rates

24. Look at the four squares [ ] that indicate where the following sentence could be added to the passage.

***Industrialization had led to increased urbanization.***

Where would the sentence best fit?

Choose the letter of the square that shows where the sentence should be added.

25. An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage.

Write the letters of the answer choices in the spaces where they belong.

***The demographic transition model links trends in population growth to the level of industrial development.***

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A Preindustrial populations tended to increase due to the large numbers of births and a slowly declining death rate.

B Due to economic pressures, the birth rate dropped to match the death rate, leading to zero growth and eventually a decline in population.

C High birth and death rates are associated with a preindustrial stage of development when there was only a gradual increase in overall population numbers.

D Improvements in medical techniques led to a dramatic drop in death rates, allowing industrialization to increase.

E Dramatic increases in population occurred when the death rates declined due to improvements in the quality of life.

F The final stage of demographic transition occurs when birth rates outstrip death rates, leading to a new round of population growth.

*Источник задания: Cambridge Preparation to the TOEFL*

# Reading 76 — Keys

13 D

The number of births is divided by the total population.

14 A

Demographers use the model because it helps to explain changes in population.

15 B

When something is "portrayed," it is shown or "represented" in a visual or verbal form.

16 D

There is no information given as to the number of women who died while giving birth.

17 B

The fluctuations in total population due to epidemics indicate a drop followed by a rise. There was a gradual rise overall.

18 C

"Agrarian" occupations refer to those that are agricultural, in other words, occupations dealing with "farming."

19 C

The increased urbanization reduced the incentive to have a large number of children.

20 A

The birth rate may fall below the death rate, (deaths exceed births) and without immigration (there is no immigration) the total population may slowly decrease (the population gradually declines).

21 B

Something that is at an "equilibrium" level is at a "stable" level or is balanced.

22 A

The improvements in health have caused an imbalance of births over deaths.

23 A

The earlier "pessimistic" predictions were that the population explosion would continue were based on the length of time the demographic transition took place in Europe (200 years). However, the transition in less developed countries seems to be occurring faster then predicted.

24 A

The information about why in cities there was less incentive for large numbers of children would follow the statement that industrialization had led to urbanization.

25 B C E

In the preindustrial era, there were high birth and death rates with only a gradual population increase. This was followed by dramatic increases in population as improved health caused a decline in the death rate. Economic pressures reduced the birth rate, bringing the population to zero growth.