2 Population and Health Geography

Multiple Choice Questions

1. Which of the following terms is defined as "the study of human populations"?
   a) Fecundity
   b) Population momentum
   c) Population pyramid
   d) Demography
   e) Demographic transition

2. Human geographers have suggested links between population growth and which of the following problems?
   a) Migration
   b) Famine
   c) Disease
   d) Environmental deterioration
   e) All of the above

3. Which key dimensions of distribution are typically looked at when examining the spatial distribution of population?
   a) Concentration
   b) Density
   c) Pattern
   d) Both A and B
   e) All of the above

4. Which of the following countries has the highest population density in 2017?
   a) India
   b) Bangladesh
   c) Japan
   d) China
   e) Brazil

5. What does fecundity refer to?
   a) The number of live births per year
   b) The age structure of the population
   c) The potential capability of a woman to conceive

d) The social attitudes toward abortion in a society
e) None of the above

6. What does the term *crude birth rate* refer to?
a) Actual number of live births per 1,000 women
b) Total number of births in one year for every 100 people
c) Total number of births for every 1,500 people
d) Total number of live births in a given period for every 1,000 living people
e) Actual number of live births per 100 women in the fecund age

7. Although the crude birth rate can be a very useful statistic, how can it be misleading?
a) Births are being related to that subset of the population that are able to conceive.
b) It uses five-year age groups.
c) Births are being related to the total population.
d) It excludes females under 15 and over 49.
e) It is an age-specific measure.

8. The term *fertility* is used specifically to refer to which of the following?
a) The ability of a woman to conceive
b) The number of children born in the world each year
c) The actual number of live births produced by a woman
d) The average number of children a woman has during her fecund years
e) The number of children born in a country each year

9. Approximately what was the crude birth rate for the world in 2017?
a) 0–25
b) 26–50
c) 51–75
d) 76–100
e) 101–125

10. The measure of the average number of children that a woman of child-bearing age will have is referred to as which of the following?
a) Actual birth rate
b) Adjusted birth rate
c) Crude birth rate
d) Nuptial rate
e) Total fertility rate

11. What is the key biological factor affecting fertility?
a) Low starch diet
b) Lack of nutrition
c) Late marriage
d) Age
e) Abnormalities

12. The fertility decline that is happening today in the less developed world can best be described as which of the following?
    a) Reproductive revolution
    b) Fertility transition
    c) Feminist initiative
    d) Positivistic revolution
    e) Demographic transition

13. Why is the less developed world currently experiencing a decline in fertility?
    a) Availability of effective contraception
    b) Increase in family planning
    c) Rise in social status among women
    d) Better education among women
    e) All the above

14. Although abortion is a long-standing practice, it is still subject to widespread condemnation, usually on what grounds?
    a) Moral grounds
    b) Religious grounds
    c) Health grounds
    d) Political grounds
    e) Both A and B

15. Which continent has the highest crude birth rate?
    a) Europe
    b) South America
    c) Asia
    d) North America
    e) Africa

16. Spatial variations in fertility today correspond closely to spatial variations in which of the following?
    a) Population growth
    b) Family planning
    c) Mortality rates
    d) Levels of economic development
    e) Biological factors

17. Since the onset of the Industrial Revolution in the mid-eighteenth century, modernization and economic development have been linked to which of the following?
    a) Lower levels of fertility
    b) Variations in economic development
    c) Empowerment of women
    d) Higher mortality rates
    e) Differences in religion

18. Which of the following is NOT one of the three main areas where population is highly concentrated?
    a) East Asia
    b) Northern Africa
    c) South-Central Asia
    d) Europe
    e) All of the above

19. The statistics that report the number of deaths per thousand people in a given year is known as which of the following?
    a) Crude death rate
    b) Adjusted population level
    c) Adjusted death or mortality rate
    d) The J-curve
    e) Actual growth rate

20. Low life expectancy statistics are found in tropical countries of which region?
    a) Africa
    b) South and Southeast Asia
    c) Australia
    d) Central America
    e) Both A and B

21. How is the infant mortality rate best defined?
    a) The number of deaths in the population aged 0 to 5 per 1,000 in that cohort
    b) The number of deaths in the population aged 1 to 5 per 1,000 in that cohort
    c) The number of babies that die within one year of birth per 1,000 live births
    d) The number of babies that die within 28 days of birth per 1,000 live births
    e) None of the above

22. In which region in China does the majority of the population live?
    a) Western
    b) Eastern
    c) Northern
    d) Southern
    e) North Western

23. As of 2017, what is the most populous country?
    a) India
    b) United States
    c) China
    d) Indonesia
    e) Brazil

24. Between 2017 and 2050 the world population is expected to increase by approximately 2.3 billion. More than half of that increase is projected to come from which continent?

a) Asia
b) Africa
c) North America
d) South America
e) Europe

25. Which of the following countries is projected to no longer be one of the 10 most populous countries by 2050?
a) Brazil
b) Mexico
c) United States
d) Nigeria
e) Ethiopia

26. At which scale is population density most accurately measured?
a) Local
b) National
c) Regional
d) Global
e) None of the above

27. Which of the following countries had the lowest rate of natural increase in 2017?
a) Syria
b) Japan
c) Russia
d) Germany
e) Belarus

28. Because of population momentum, total world population continues to do which of the following?
a) Remain constant
b) Grow slowly
c) Decline slowly
d) Grow rapidly
e) Decline rapidly

29. The countries with the lowest rates of natural increase tend to be located in which region?
a) Africa
b) North and South America
c) Southeast Asia
d) Europe
e) The Middle East

30. The rate of natural increase (RNI) is determined by subtracting the CDR from the CBR. What does RNI measure?
a) The rate of mortality

b) The rate of population growth
c) Nuptial rate
d) The number of births at a given time
e) The total fertility rate

31. What percentage of the world's population is concentrated in China and India?
a) 0–20 per cent
b) 21–40 per cent
c) 41–60 per cent
d) 61–80 per cent
e) 81–100 per cent

32. Pro-natalist policies are in place in which of the following countries?
a) Italy
b) Iran
c) Israel
d) Russia
e) All of the above

33. If the current 1.2 per cent population growth rate continues, approximately how many years would it take for the world population to double?
a) 0–25 years
b) 26–50 years
c) 51–75 years
d) 76–100 years
e) 101–125 years

34. Which of the following terms refers to the maximum population that can be supported by a given set of resources and a given level of technology?
a) Momentum
b) Population pyramid
c) Carrying capacity
d) Theory of limits
e) Threshold pyramid

35. Japan is encouraging a baby boom, as the government fears that an aging population, supported by fewer working people, would keep the country in what kind of state?
a) Depression
b) Boom
c) Prosperity
d) Permanent recession
e) Thriving economy

36. What was the first country to actively intervene to reduce fertility, beginning in 1952?
a) Sri Lanka
b) China

c) Bangladesh
d) Thailand
e) India

37. Much of China's success in reducing fertility can be attributed to which of the following?
a) Marriage was prohibited until the age of 28 for men and 25 for women.
b) Contraception, abortion, and sterilization were free.
c) Financial incentives were given to families with one child.
d) Families were restricted to having only one child.
e) All of the above

38. What does a population pyramid depict?
a) Age composition
b) Socio-economic status
c) Sex composition
d) Health status
e) Both A and C

39. Which of the following is a recent significant development in China's population?
a) Marked disparity in the sex ratio of children
b) High CDR
c) Declining fertility rate
d) Increasing rate of population growth
e) High fertility rates

40. Approximately what proportion of the world's population is expected to be over the age of 65 by 2050?
a) 0–15 per cent
b) 16–30 per cent
c) 31–45 per cent
d) 46–60 per cent
e) 61–75 per cent

41. As a consequence of the increasing life expectancy, the median age of the world's population is expected to increase from 30 years in 2015 to approximately what in 2050?
a) 31–40 years
b) 41–50 years
c) 51–60 years
d) 61–70 years
e) 71–80 years

42. Which of the following was NOT one of the changes that allowed the human population to grow more rapidly about 12,000 years ago?
a) Evolution of speech
b) Use of footwear
c) Introduction to monogamy

d) Use of fire
e) Use of clothing

43. The 2050 projection for Canada's population pyramid suggests which of the following?
    a) A continuing low birth rate
    b) An aging population
    c) A rapidly increasing birth rate
    d) A baby boom
    e) Both A and B

44. From about 1650 onwards, the world population increased rapidly in response to the second major cultural advance, known as which of the following revolutions?
    a) The Reproductive Revolution
    b) The Industrial Revolution
    c) The Agricultural Revolution
    d) The Cultural Revolution
    e) The Social Revolution

45. Which was the first region of high population density that appeared about 9,000 years ago?
    a) Indus valley
    b) Tigris valley
    c) Euphrates valley
    d) Area stretching from Greece to Iran, including Egypt
    e) Both B and C

46. What is the cause of population aging?
    a) Fewer younger people
    b) Declining mortality
    c) Declining fertility
    d) Increasing life expectancy
    e) All of the above

47. Dramatic population increases since about 1650 reflect which of the following facts?
    a) Death rates fell prior to birth rates.
    b) Birth rates fell prior to death rates.
    c) Death rates and birth rates have remained stable.
    d) Death rates and birth rates have risen dramatically.
    e) None of the above

48. In which period did the world population reach 1 billion?
    a) Early nineteenth century
    b) Mid nineteenth century
    c) Late nineteenth century
    d) Early twentieth century
    e) Mid twentieth century

49. In which decade did the world population reach 6 billion?
    a) 1960s
    b) 1970s
    c) 1980s
    d) 1990s
    e) 2000s

50. Current United Nations projections suggest the world population will be approximately how large in 2050?
    a) 7 billion
    b) 8 billion
    c) 9 billion
    d) 10 billion
    e) 11 billion

51. The authors of which report argued that world population was likely to exceed world carrying capacity, leading to both a population and economic collapse?
    a) The 1972 Club of Rome report
    b) The 1979 Cecelski report
    c) The 1979 Ridker report
    d) The 1968 Ehrlich report
    e) The 1975 United Nations report

52. Neo-Malthusian theory is frequently used to explain population pressures in the less developed world, especially in which of the following countries/regions?
    a) India
    b) Japan
    c) Botswana
    d) Sub-Saharan Africa
    e) Bangladesh

53. Whose central concern was imbalance between population and food?
    a) Thomas R. Malthus
    b) Friedrich Ratzel
    c) Charles Darwin
    d) Alexander von Humboldt
    e) Karl Marx

54. Who wrote the book *An Essay on the Principle of Population*, which was first published in 1798?
    a) Ester Boserup
    b) Donella H. Meadows
    c) Thomas R. Malthus
    d) Paul Ehrlich
    e) Karl Marx

55. The demographic transition model accurately and simply describes the experience of which of the following regions?
    a) The less developed world
    b) East Asia
    c) Sub-Saharan Africa
    d) The middle east
    e) The more developed world

56. Which stage of the demographic transition model is characterized by a high birth rate and a high death rate?
    a) Stage I
    b) Stage II
    c) Stage III
    d) Stage IV
    e) Stage V

57. Stage III of the demographic transition model is characterized by which of the following?
    a) High birth rate, declining death rate
    b) High birth rate, high death rate
    c) Low birth rate, low death rate
    d) Declining birth rate, low death rate
    e) Low birth rate, high death rate

58. What occurs in stage IV of the demographic transition model?
    a) Birth rates are high
    b) Death rates are low
    c) Birth rates are low
    d) Death rates are high
    e) Both B and C

59. What are we most interested in when studying migration?
    a) Distance moved
    b) Time spent in the new location
    c) Number of people involved
    d) Cause of move
    e) All of the above

60. Which of the following is an example of migration?
    a) Spatial movement of residence
    b) A visit to a family or friend's house
    c) Journey to work
    d) Vacation across national boundaries
    e) Seasonal movements of farm workers

61. Which of the following is NOT one of the four typical push–pull categories of migration?
    a) Economic

b) Political
c) Cultural
d) Behavioural
e) Environmental

62. Which of the following is a "push" factor of migration?
   a) Superior career prospects
   b) Other family members
   c) Preferable housing
   d) Cultural discrimination
   e) Improved personal growth opportunities

63. Which of the following is a "pull" factor of migration?
   a) Political oppression
   b) Localized recession
   c) Preferable medical care
   d) Disaster
   e) Limited career prospects

64. Which of the following is a type of migration?
   a) Primitive
   b) Forced
   c) Mass
   d) Illegal
   e) All the above

65. Which of the following refers to a variant of forced migration in which the migrant has some voice in the decision-making process?
   a) Compulsory migration
   b) Primitive migration
   c) Illegal migration
   d) Impelled migration
   e) Slave migration

66. Approximately what percentage of people living in less developed countries would like to emigrate?
   a) 15–25 per cent
   b) 26–35 per cent
   c) 36–45 per cent
   d) 46–55 per cent
   e) 56–65 per cent

67. What is the name given to the controverisal American executive order, signed by President Donald Trump, that bans entry to the United States of citizens from Iran, Iraq, libya, Somalia, Sudan, Syria, and Yemen?
   a) The travellers ban

b) The immigration ban
c) The Muslim ban
d) The refugee ban
e) Travelling ban

68. What do health geographers aim to understand?
    a) Distribution and diffusion of disease
    b) Risks of environmental contaminants
    c) Socio-economic determinants of health
    d) Uneven access to health care
    e) All of the above

69. Which of the following is defined as "a rapid increase of relatively short duration in the number of cases of a disease within a population"?
    a) Pandemic
    b) Degenerative or chronic disease
    c) Doubling time
    d) Epidemic
    e) Mortality

70. There has been a notable decrease in the number of deaths from AIDS and the United Nations believes the pandemic will be under control by 2030. Which factor(s) have contributed to this positive change?
    a) Increasing education
    b) Changing sexual behaviour
    c) Increased availability of antiretroviral drugs
    d) Both B and C
    e) All of the above

71. What is the first stage of the epidemiological transition called?
    a) Age of degenerative diseases
    b) Age of receding pandemics
    c) Age of delayed degenerative diseases
    d) Age of re-emergence of infectious diseases
    e) Age of pestilence and famine

72. In the nineteenth century, North America experienced three pandemics (in 1832, 1848, and 1866) of which disease?
    a) Influenza
    b) Cholera
    c) Measles
    d) Mumps
    e) Chicken pox

73. Which of the following terms is defined as "a state of complete physical, mental and social well-being"?

a) Health
b) Health care
c) Epidemiology
d) Demography
e) Fecundity

74. Which country in the more developed world has a health care system more akin to those in the less developed world in terms of universality?
a) Canada
b) Sweden
c) Norway
d) France
e) United States

75. In Canada, which of the following group(s) commonly do not have access to a family doctor?
a) Immigrants
b) Urban poor
c) Indigenous populations
d) Both A and C
e) All of the above

1. Much of the population increase today is occurring in the more developed world.

2. A census is a periodic enumeration of all individuals and collection of demographic data in a given country.

3. The most populous country in the European region is Germany.

4. The most populous country in the world, as of 2017, is India.

5. The country that is projected to have the largest population in 2050 is China.

6. Bangladesh is the world's most densely populated country.

7. All global changes in population size can be understood by reference to fertility and mortality.

8. Female fecundity is the ability of a woman to conceive and have children.

9. Generally, a total fertility rate of between 2.1 and 2.5 is considered appropriate to maintain a stable population.

10. Measures of the crude birth rate (CDR) have typically ranged from a minimum of 0 to a maximum of 10.

11. It is believed that with increasing industrialization, fertility increases.

12. The crude death rate does not take into account the fact that the probability of dying is closely related to age.

13. The lowest fertility rates in the world today are found in several African countries with TFR as low as 1.1 per cent.

14. The infant mortality rate is the number of deaths of infants below the age of 2 years per 1,000 live births.

15. The world pattern for CDR shows much more variation than does that for CBR.

16. Generally, RNI data reflect the true population growth of any country.

17. As fertility and mortality vary significantly with age, the growth of a population is affected by its age composition.

18. The population pyramid for Canada in 1981 and the projected one for 2050 are essentially the same except that more people are living to older ages.

19. Presently, Israel and Japan have the highest median age (approximately 46 years).

20. According to Malthus, food production increases at an arithmetic rate, while human population increases at a geometric rate.

21. The demographic transition theory is less realistic than most of the other population theories as it is not based on known facts.

22. Migration is often an outcome as people strive to improve their quality of life.

23. Typical push–pull factors of migration can be sorted into four categories: economic, political, environmental, and cultural.

24. Migration may be induced by environmental reasons such as flooding and desertification.

25. The likelihood of an individual remaining in their current location or migrating elsewhere depends on the value they place on their various moorings.

26. One of Ravenstein's laws states that the majority of migrants travel only a short distance.

27. In the most general sense, there is hardly any relationship between life cycle and the likelihood of individual migration.

28. Most illegal immigrants are young and live in rural areas.

29. Historically, people would die from contagious disease before they could get cancer or heart disease.

30. Canadian health care is considered universal.

Short Answer Questions

1. Define demography.

2. Differentiate between the characteristics of the more and less developed world.

3. Describe the spatial distribution of population in East Asia.

4. Differentiate between population density and physiological density.

5. Define total fertility rate (TFR) and identify the important assumption it makes.

6. Identify the main reasons for the decline of fertility rates in the less developed world.

7. Identify three measures of mortality.

8. Identify the reasons for the declining fertility rates in the more developed world.

9. Explain why the measures of infant mortality rate (IMR) and life expectancy (LE) are considered to be useful indicators of quality of life.

10. Identify the rate of natural increase and explain what it tells us about population growth in the past, present, and future.

11. Define a population pyramid.

12. Define population aging.

13. Briefly describe two examples of push–pull factors of migration.

14. List any five of Ravenstein's laws.

15. Differentiate between a pandemic and an epidemic.

Essay Questions

1. The main concern of Malthus was the imbalance between population and food. Explain.

2. Identify the social and economic consequences of an aging population for Canada.

3. Discuss the factors that influence the fertility and mortality rates of the world.

4. Describe the distribution of the global population.

5. Discuss one of the two examples of spatial distribution of disease from the textbook (e.g., Ebola or HIV/AIDS).

6. Compare the global patterns of crude birth rates and crude death rates (Figures 5.1 and 5.3 in the text). Describe and explain the similarities and differences in these two patterns.

7. Identify the challenges to predicting population growth (e.g., why are our population forecasts sometimes inaccurate).

8. Explain how government policies affect population.

9. Identify the various factors that explain and account for migration.

10. Compare and contrast two types of migration in terms of driving forces and of typical places people move from and move to. Provide specific examples of each from history.

11. Explain the moorings approach to understanding migration and provide an example from your own life, or someone you know.

12. List and describe the five stages of the epidemiological transition.

Answer Key

Multiple Choice Questions

1. **d** (p. 40)	26. **a** (p. 46)	51. **a** (pp. 65–66)
2. **e** (p. 40)	27. **a** (p. 55)	52. **d** (p. 66)
3. **e** (p. 40)	28. **d** (p. 54)	53. **a** (p. 66)
4. **b** (p. 45)	29. **d** (p. 54)	54. **c** (p. 66)
5. **c** (p. 47)	30. **b** (p. 54)	55. **e** (p. 67)
6. **d** (p. 47)	31. **b** (p. 55)	56. **a** (p. 67)
7. **c** (p. 47)	32. **e** (pp. 56–57)	57. **d** (p. 68)
8. **c** (p. 47)	33. **c** (p. 55)	58. **e** (p. 68)
9. **a** (p. 47)	34. **c** (p. 57)	59. **e** (p. 69)
10. **e** (p. 47)	35. **d** (p. 57)	60. **a** (p. 69)
11. **d** (p. 47)	36. **e** (p. 57)	61. **d** (p. 70)
12. **a** (p. 49)	37. **e** (pp. 57–58)	62. **d** (p. 70)
13. **e** (p. 49)	38. **e** (p. 58)	63. **c** (p. 70)
14. **e** (p. 50)	39. **a** (p. 59)	64. **e** (p. 72)
15. **e** (p. 51)	40. **b** (p. 60)	65. **d** (p. 72)
16. **d** (p. 50)	41. **a** (p. 61)	66. **c** (p. 73)
17. **a** (p. 50)	42. **b** (p. 62)	67. **c** (p. 74)
18. **b** (p. 42)	43. **e** (p. 63)	68. **e** (p. 75)
19. **a** (p. 50)	44. **b** (p. 63)	69. **d** (p. 76)
20. **e** (p. 53)	45. **d** (p. 63)	70. **e** (p. 78)
21. **c** (p. 52)	46. **e** (p. 64)	71. **e** (p. 79)
22. **b** (p. 43)	47. **a** (p. 65)	72. **b** (p. 80)
23. **c** (p. 44)	48. **a** (p. 65)	73. **a** (p. 80)
24. **b** (p. 44)	49. **d** (p. 65)	74. **e** (p. 82)
25. **b** (pp. 44–45)	50. **d** (p. 65)	75. **e** (p. 83)

True or False Questions

1. **F** (p. 40)	10. **F** (p. 47)	19. **F** (p. 61)
2. **T** (p. 42)	11. **F** (p. 48)	20. **T** (p. 66)
3. **F** (p. 44)	12. **T** (pp. 50, 52)	21. **F** (p. 67)
4. **F** (p. 44)	13. **F** (p. 51)	22. **T** (p. 69)
5. **F** (p. 44)	14. **F** (p. 52)	23. **T** (p. 70)
6. **T** (p. 45)	15. **F** (p. 53)	24. **T** (p. 70)
7. **T** (p. 46)	16. **F** (p. 54)	25. **T** (p. 71)
8. **T** (p. 47)	17. **T** (p. 58)	26. **T** (p. 71)
9. **T** (p. 47)	18. **F** (p. 61)	27. **F** (p. 72)

28. **F** (p. 75)   29. **T** (p. 79)   30. **T** (p. 81)

Short Answer Questions

1. Demography is the science that studies the size and makeup of populations (according to such variables as age and sex), the processes that influence the composition of populations (notably fertility and mortality), and the links between populations and the larger human environments of which they are a part. (p. 40)

2. The general framework used to identify the levels of development originated from the United Nations. Under this framework, the more developed world includes Canada, the United States, most of Europe, Australia, New Zealand, and Japan. These countries are characterized by a high standard of living, as measured by income, and also high levels of social well-being as measured by health outcomes and educational attainment, among other factors. The less developed world includes all other countries, and is characterized by lower standards of living and social well-being. This binary characterization has obvious limitations. Not all less developed countries are the same, nor are all the more developed countries. Due to these limitations, the UN sometimes subdivides the less developed world into two groups: less developed and least developed. (pp. 40–41)

3. More than 1.6 billion people live in East Asia, with the majority (1.4 billion) residing in China. China is currently the most populous country in the world, and the fourth-largest country by land area. Despite China's large land area, much of China's population lives in a relatively concentrated fashion in the eastern half of the country. Two other countries in East Asia—Japan and South Korea—have relatively large populations (a combined population of 175 million people), but, in contrast to China, are comparatively small in area. (p. 43)

4. Conventionally, population density is arithmetic density: the total number of people in a unit area. Physiological density is the relation between population and that portion of the land area deemed suitable for agriculture. (p. 46)

5. The total fertility rate is the average number of children a woman will have, assuming she has children at the prevailing age-specific rates, as she passes through the fecund years. This is an age-specific measure of fertility that is useful because child-bearing during the fecund years varies considerably with age. The TFR reflects an assumption that as a woman reaches a particular age, she will have the same number of children as do the women her age; hence, it is a predictive measure. (p. 47)

6. The less developed world is currently experiencing a decline in fertility that began in the 1970s and appears to have little to do with economic factors and everything to do with cultural factors. The most powerful influence on fertility in the less developed world has been improvement in the education and lives of women and the related extent to which modern contraceptive methods are employed. (p. 49)

7. Mortality may be measured in a variety of ways. The simplest is the crude death rate (CDR), the total number of deaths in a given period (usually one year) for every 1,000 people living. Other mortality measures take into account the age structure of the population; these are called age-adjusted mortality rates. The most useful of these for our purposes is the infant mortality rate (IMR): the number of deaths of infants under 1 year old per 1,000 live births in a given year. Although not a mortality measure, another useful statistic that reflects mortality is life expectancy (LE), the average number of years to be lived from birth. (pp. 50–52)

8. The extraordinarily low figures for much of Europe reflect both a desire to postpone starting families and a desire for smaller families. For many Europeans, the ideal family now includes

only one child. Such preferences may be prompted by uncertain economic circumstances and the growth of employment opportunities for women. It is often argued that population decline goes hand in hand with economic decline. Europe is not alone in having low fertility rates, as much of the rest of the more developed world does too. Canada and the United States, along with Australia, New Zealand, Japan, and South Korea all have below-replacement fertility rates. Some of these countries are also concerned by their low fertility: South Korea's government, for example, actively promotes higher fertility by offering financial incentives to couples who have more than three children. (pp. 51–52)

9. The IMR is sensitive to cultural and economic conditions, declining with improved medical and health services and better nutrition; reductions in the IMR usually precede overall mortality decline. Mortality generally reflects socio-economic status: high LE statistics are associated with high-quality living and working conditions, good nutrition, good sanitation, and widely available medical services—and vice versa. (p. 52)

10. The *rate of natural increase* (RNI) measures the rate (usually annual) of population growth by subtracting the CDR from the CBR. In 2017 the world CBR was 20 and the CDR was 8, producing an RNI of 12 per 1,000; this figure is typically expressed as a percentage of total population (hence 1.2 per cent). Between 2016 and 2017 the world's population increased by about 83 million people as a result of 143 million births and 60 million deaths. The size of the annual increase has been relatively constant in recent years, meaning that *world population is still increasing but at a slowly decreasing rate*. The reduction in the RNI began about 1990 because world fertility is declining. (p. 54)

11. A population pyramid is a diagrammatic representation of the age and sex composition of a population. (p. 58)

12. A process in which the proportion of elderly people in a population increases and the proportion of younger people decreases, resulting in increased median age of the population. It is occurring in most countries around the world, albeit at different rates. (p. 60)

13. There are a variety of push–pull factors of migration. Push factors include localized recession because of declining regional income; cultural or political oppression or discrimination; limited personal, family, career prospects; and disasters, such as floods, earthquakes, wars, etc. Pull factors include superior career prospects and increased regional income; improved personal growth opportunities; preferable environment (climate, housing, medical care, schools); and other family members or friends. (p. 70)

14. Ravenstein identified 11 laws. (1) The majority of migrants travel only a short distance. (2) Migration proceeds step by step. (3) Migrants moving long distances generally head for one of the great centres of commerce or industry. (4) Each current of migration produces a compensating countercurrent. (5) The natives of towns are less migratory than those of rural areas. (6) Females are more migratory than males within their country of birth, but males more frequently venture beyond. (7) Most migrants are adults. (8) Large towns grow more by migration than by natural increase. (9) Migration increases in volume as industries and commerce develop and transport improves. (10) The usual direction of migration is from agricultural areas to centres of industry and commerce. (11) The major causes of migration are economic. (p. 71

15. An epidemic is a rapid increase (beyond what is normal) of relatively short duration in the number of cases of a disease within a population, whereas, a pandemic is an outbreak of disease that is of greater scope and scale (a whole country or region, or even the world) than an epidemic. (p. 76-77

Essay Questions

1. Answers will vary. (p. 66)
2. Answers will vary. (pp. 60–61, 63)
3. Answers will vary. (pp. 47–54)
4. Answers will vary. (pp. 42–44)
5. Answers will vary. (pp. 75–78)
6. Answers will vary. (pp. 47, 50–51, 53)
7. Answers will vary. (pp. 65–66)
8. Answers will vary. (pp. 55–58)
9. Answers will vary. (pp. 69–75)
10. Answers will vary. (pp. 72–75)
11. Answers will vary. (pp. 70–71)
12. Answers will vary. (p. 79)