1.	Which of the following examples describes the S-shaped curve according to which a population grows rapidly but eventually reaches a constant population?
a)	demographic transition
b)	replacement fertility curve
c)	logistic growth curve
d)	sustainability
e)	carrying capacity
	Ans: c Difficulty: Easy Link to: 4.3

2.	Which of the following examples describes the maximum number of a particular species that an environment can support without degrading the environment?
a)	demographic transition
b)	replacement fertility curve
c)	logistic growth curve
d)	sustainability
e)	carrying capacity
	Ans: e Difficulty: Easy Link to: 4.7

3.	Which of the following examples describes the movement of a nation from a high population growth to a low population growth?
a)	demographic transition
b)	replacement fertility curve
c)	logistic growth curve
d)	sustainability
e)	carrying capacity
	Ans: a Difficulty: Easy Link to: 4.5

4.	The figure below illustrates which of the following concepts:
a)	replacement level fertility
b)	population age structure

c)	low death rates
d)	Malthus' theory of human population
e)	logistic population growth

Ans: b
Difficulty: Medium
Link to: 4.1

5. Assume that the figure below illustrates the characteristics of a tribe on a small Pacific island. Which of the following is a plausible explanation for the shape of the graph:

a)	a devastating drought about 10 years ago
b)	the arrival of a clan from another island about 20 years ago
c)	introduction of prenatal and infant medicine about 10 years ago
d)	many of the island elderly moved to another island about 5 years ago
e)	a record crop harvest about 5 years ago

Ans: c
Difficulty: Medium
Link to: 4.1

6. A devastating tsunami on December 26,2004 killed an estimated 230,000 people. With a growth rate at just 1.2% per year, replacing the number of lives lost took:

a)	a couple of hours
b)	a couple of days
c)	a couple of weeks
d)	a couple of years
e)	this amount of people has not been replaced yet

Ans: b
Difficulty: Easy
Link to: 4.1

7. According to the concept of the "demographic transition," a population will go through a period of expansion, but later stabilize at:

a)	its original number
b)	at the maximum carrying capacity of the land
c)	at a population larger than before the transition, but with zero growth

d)	a constant rate of growth
e)	a level where deaths caused by famine and disease equal new births
	Ans: c Difficulty: Medium Link to: 4.5

8.	The doubling time of a population:
a)	is two-thirds of the tripling time
b)	is a function of exponential growth
c)	is based on a constant birth rate
d)	Growth rate =(# of births) – (# of deaths per unit time) / (total population)
e)	refers to demographic fertility
	Ans: b Difficulty: Medium Link to: 4.3

9.	Decreased death rate and the accelerated rate of human population growth are related to:
	I. improved sanitation and health
	II. increased food supply
	III. control of disease-spreading organisms
a)	I only
b)	II only
c)	III only
d)	I and II
e)	I, II and III
	Ans: e Difficulty: Medium Link to: 4.7

10.	The "demographic transition" refers to:
a)	declining population growth rate following rapid growth
b)	democratic mandates for contraceptives to control human population growth
c)	the maximum human population sustainable by the Earth
d)	the transition from population growth to population decline
e)	overpopulation in less developed countries

	Ans: a Difficulty: Medium Link to: 4.5

11.	As of 2001, the population of the Earth was about _____ and the annual rate of population growth was _____.
a)	1.2 billion; 3.7%
b)	6.3 billion; 1.4%
c)	8.6 million; 0.5%
d)	12.0 billion; 2.5%
e)	256 billion; 3.2%
	Ans: b Difficulty: Easy Link to: 4.2

12.	Human population growth during the pre-industrial agricultural period and during the Industrial Revolution period occurred with little change in:
a)	birth rates
b)	death rates
c)	growth rates
d)	maximum human life expectancy
e)	average life expectancy
	Ans: d Difficulty: Easy Link to: A Closer Look 4.1

13.	Epidemic diseases include all of the following **except:**
a)	influenza
b)	measles
c)	cholera
d)	cancer
e)	plague
	Ans: d Difficulty: Easy Link to: 4.7

14.	In a developing country, chronic diseases account for a _____ proportion of total mortality. Acute diseases account for a _____ proportion of total mortality.

a)	large; small
b)	small; large
c)	large; large
d)	small; small
e)	in developing countries, population is controlled by *food supply,* not disease

Ans: b
Difficulty: Easy
Link to: 4.7

15.	Rapid human population growth puts an especially heavy burden on:
a)	the environment
b)	the wildlife
c)	sewage treatment plants
d)	the ocean
e)	rapid human population growth burdens all of these

Ans: e
Difficulty: Easy
Link to: 4.7

16.	In primitive countries, breast feeding slows population growth because:
a)	it increases the average number of years between births
b)	it is healthy and decreases infant mortality
c)	it keeps the children from being hungry
d)	it increases the age at which women will bear their first child
e)	it decreases the frequency of sexual activity

Ans: a
Difficulty: Medium
Link to: 4.7

17.	Human demography suggests that an improving economy in a country correlates with:
a)	decreased birth rate, increased population growth rate
b)	decreased death rate, increased population growth rate
c)	decreased birth rate, decreased population growth rate
d)	increased birth rate, decreased population growth rate
e)	increased birth rate, increased population growth rate

	Ans: c Difficulty: Medium Link to: 4.5

18.	Which of the following gives an example of an acute and a chronic disease:
a)	measles and cholera
b)	influenza and heart disease
c)	stroke and measles
d)	cancer and stroke
e)	plague and tooth decay
	Ans: b Difficulty: Medium Link to: 4.7

19.	Which of the following parameters is/are necessary to describe exponential population growth?
a)	carrying capacity
b)	population size
c)	juvenile death rate
d)	time lag
e)	all of these
	Ans: b Difficulty: Easy Link to: 4.2

20.	The demographic transition occurs in three stages. Under which circumstance is a nation **un**able to make the transition from stage II to stage III:
a)	when value is put on small families
b)	when parents don't see the benefit from having few but well educated children
c)	when medical advances are used to decrease the death rate
d)	when abundant food provides plenty of resources to survive
e)	none of these
	Ans: b Difficulty: Medium Link to: 4.5

21.	How rapidly a population changes depends most upon (select the best answer):
a)	birth rates
b)	death rates
c)	growth rates
d)	maximum lifetime
e)	life expectancy
	Ans: c Difficulty: Easy Link to: 4.2

22.	The crude growth rate is defined as:
a)	birth rate minus death rate
b)	maximum life time minus average life expectancy
c)	crude birth rate minus crude death rate
d)	birth rate plus death rate
e)	maximum growth rate that can be accommodated
	Ans: a Difficulty: Easy Link to: 4.2

23.	The basic concepts of population growth and change are known as:
a)	human demography
b)	human dynamics
c)	total fertility
d)	demographic transition
e)	population dynamics
	Ans: e Difficulty: Medium Link to: 4.2

24.	The “demographic transition” leads to:
a)	an increase in population growth rate
b)	an decline in population growth rate
c)	an increase in the birth rate
d)	a decline in the death rate
e)	all of these; it is a four-stage pattern of population growth

	Ans: b Difficulty: Easy Link to: 4.5

25.	The simplest and one of the least controversial means of slowing population growth is:
a)	abortion
b)	birth control
c)	delaying first childbearing
d)	no sexual activity before marriage
e)	sterilization
	Ans: c Difficulty: Easy Link to: 4.9

26.	In Thomas Malthus' theory of human population, the ultimate fate of humankind is said to be:
a)	a technological utopia
b)	a return to rural, agrarian society
c)	plague, pestilence, and famine
d)	a crowded Earth, population in a delicate balance with food supply
e)	urban society, with all food supplied by industrial processes ("hydroponics") or by fully-automated agriculture
	Ans: c Difficulty: Easy Link to: A Closer Look 4.3

27.	Calculate the doubling time of the population in Kellertopia. The annual population growth in this fictional country is 5.0 %.
a)	14 month
b)	140 month
c)	1.4 years
d)	14 years
e)	7 years
	Ans: d Difficulty: Medium Link to: 4.1, working it out

28.	The growth rate of the human population has increased over the last few hundred years due to all of the following reasons **except**:
a)	the maximum age to which individuals can live has increased
b)	the birth rate has increased
c)	juvenile death rates have declined
d)	the death rate decreased
e)	the age of first childbirth has increased
	Ans: a Difficulty: Easy Link to: A Closer Look 4.1

29.	The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year. Given only this information, when will there be a food shortage on the island?
a)	never
b)	in 10 years
c)	in 15 years
d)	in 20 years
e)	in 25 years
	Ans: d Difficulty: Medium Link to: 4.1, Working It Out

30.	In June 2001, 17,800,000 people inhabited Demographica Island. During the time period from 2000 to 2001, 301,000 births were recorded. During the same period of time 120,000 deaths occurred. Calculate the growth rate (in %) for Demographica Island.
a)	0.001 %
b)	0.01 %
c)	1.0 %
d)	10.0 %
e)	10.1 %
	Ans: c Difficulty: Medium Link to: 4.1, Working It Out

31.	Examine the graph below illustrating the age distribution of people in a tribe in the Amazon basin. What might be the significance, from a demographic standpoint, of this distribution for the future of this population?
a)	the population is growing toward the maximum human population sustainable by the basin
b)	the total population size is increasing exponentially and they will therefore run out of resources
c)	the population is growing logistically and is balanced with its resources
d)	the population has type I survivorship curve.
e)	the population is not replacing itself and the group may disappear
	Ans: e Difficulty: Medium Link to: 4.1

32.	*The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year.* Given only this information, is there a problem in the future of the island? If so, when?
Ans:	Yes, after exactly **20 years**. In 20 years, the population will have doubled twice – to 40 million people – and food supply will be sufficient for exactly 40 million people. Any time later, the island will not be able to feed its population.
	Difficulty: Difficult Link to: A Closer Look 4.1

33.	*The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year.* If the population of Demographica Island were not doubling, but stable except for a constant rate of immigration of 1.25 million people per year, would the island face food shortages in the future? If so, when?

Ans:	Yes, after exactly **40 years**. In 40 years, the population would be 10 million plus 50 million (40 times 1.25 million), equals a total of 60 million. After 40 years, the food supply is also just equal to 60 million, and people are arriving faster than agriculture is improving.
	Difficulty: Difficult Link to: A Closer Look 4.1

34.	*The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year.* What is the maximum rate of immigration (number of people per year), assuming no other growth in population, that will never lead to any shortage of food on the island?
Ans:	No more than 1 million per year. Any more and the population will <u>eventually</u> outstrip the food supply
	Difficulty: Difficult Link to: A Closer Look 4.1

35.	*The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year.* What is the maximum rate of growth of the island's population (doubling time in years), assuming no immigration, that will never lead to any shortage of food on the island?
Ans:	<u>Any</u> sustained population growth is exponential and will eventually outstrip the steady ("arithmetic") growth in the food supply.
	Difficulty: Difficult Link to: A Closer Look 4.1

36.	How does the total fertility rate (TFR) affects the population growth of a nation?
Ans:	The average number of children expected to be born to a woman during her life time is the TFR. The lower the TFR, the slower the population will grow.

	Difficulty: Medium Link to: 4.4

37.	There were 2 million people in Utopia in May 2004. Between May 2004 and May 2005, there were 10,000 births per month, and there were 8,000 deaths per month. Calculate the crude birth rate, death rate, and growth rate for the period of time 2004-05. Also calculate the doubling time for the population.
Ans:	Crude birth rate = # of births per 1000 people = 10,000 ÷ 2,000,000 = **5 per 1,000** Crude death rate = # of deaths per 1000 people = 8,000 ÷ 2,000,000 = **4 per 1,000** Crude growth rate = birth rate – death rate = +1 per 1,000 per year = **0.1% per year** Doubling Time = 70 ÷ % growth rate = 70 ÷ 0.1 per year = **700 years**
	Difficulty: Difficult Link to: 4.1

38.	The figure represents hypothetical trends in the birth and death rates of a human population over time. Fill in the blanks with the appropriate letter (or letters). Each may be used more than once. Zero population growth occurs at time(s) _____, positive growth at time(s) _____, and negative growth at time(s) _____.
Ans:	Correct answers: DF, B, C, E
	Difficulty: Medium Link to: 4.3

39.	The figure represents hypothetical trends in the birth and death rates of a human population over time. Fill in the blanks with the appropriate letter (or letters). Each may be used more than once. The maximum population growth rate occurs at time _____.

Ans:	C
	Difficulty: Medium Link to: 4.3

40.	The figure represents hypothetical trends in the birth and death rates of a human population over time. Fill in the blanks with the appropriate letter (or letters). Each may be used more than once. The maximum population size is at time _____.
Ans:	D
	Difficulty: Medium Link to: 4.3

41.	Explain the fact that, even though the U.S. total fertility rate is below replacement level, the total population is still growing.
Ans:	legal and illegal immigration
	Difficulty: Easy Link to: 4.1

42.	Why are fertility rates in industrial countries significantly lower than in developing countries?
Ans:	Because in developing countries no social security system exists. Therefore many children means security for the parents when they are too old to work. In industrial countries on the other hand, a social security system and pension system exists that takes care of people who are retired
	Difficulty: Easy Link to: 4.1

43.	List three fundamental ways by which any population with a positive growth rate can achieve zero population growth.
Ans:	decreased birth rate increased death rate increased age of first reproduction

	Difficulty: Easy Link to: 4.1

44.	Define and contrast exponential (geometric) growth and arithmetic growth.
Ans:	Exponential growth: population increases as a constant % of the current size of the pool. Arithmetic growth: population increases by a constant amount
	Difficulty: Easy Link to: 4.2

45.	An ecologist measures birth rates, death rates and population sizes of two populations (G and H) over many years, with the following results shown by the graphs below. Which populations are likely regulated by density dependent factors? Circle the appropriate answer(s). **G** **H** **Both** **Neither**
Ans:	Neither
	Difficulty: Medium Link to: 4.3

46.	An ecologist measures birth rates, death rates and population sizes of two populations (G and H) over many years, with the following results shown by the graphs below. Which populations are likely regulated by density independent factors? Circle the appropriate answer(s). **G** **H** **Both** **Neither**
Ans:	Both

	Difficulty: Medium Link to: 4.3

47.	An ecologist measures birth rates, death rates and population sizes of two populations (G and H) over many years, with the following results shown by the graphs below. Which populations are likely to show prolonged exponential growth? ircle the appropriate answer(s). **G** **H** **Both** **Neither**
Ans:	Neither
	Difficulty: Medium Link to: 4.3

48.	On our finite planet, human populations are, or eventually will be limited by some factors. These factors can be classified as short-term, medium-term and long-term factors. Name an example for each type of limiting factor.
Ans:	Short-term: e.g., disruption of food distribution caused by war or drought outbreak of a new disease Intermediate-term e.g., desertification pollution by toxic metals into waters and fisheries disruption of nonrenewable resources Long-term: se.g., oil erosion decline of groundwater resources climate change
	Difficulty: Medium Link to: 4.8

49.	Name the three basic premises of Thomas Malthus' theory of human population.
Ans:	People need food to survive. People will continue to reproduce. The power of population growth is much greater than the power of the Earth sustain people.
	Difficulty: Medium Link to: A Closer Look 4.3

50.	What is meant by the statement, "Technology continues to prove Malthus wrong"?
Ans:	Malthus predicted that the human species would rapidly outstrip its ability to feed itself. So far, technological advances continue to support a ballooning population.
	Difficulty: Medium Link to: A Closer Look 4.3

51.	Why do chronic diseases cause a much larger portion of the mortality in developing countries than in industrial countries?
Ans:	Because the threat of dying of an epidemic disease is much higher than of a chronic disease. Chronic diseases are also related to the standard of living (for example: heart attacks - high cholesterol - rich food source - high standard of living).
	Difficulty: Medium Link to: 4.7

52.	The graph below shows the population parameters of two countries. Both countries are the same in all of their population characteristics <u>except</u> their age distributions. The population of what country might be an example of a stationary age structure?
Ans:	The population of Country 1 (left)
	Difficulty: Medium Link to: 4.1

53.	The graph below shows the population parameters of two countries. Both countries are the same in all of their population characteristics <u>except</u> their age distributions. Describe how the populations of Country 1 (left) and Country 2 (right) are likely to change over the next twenty years.
Ans:	**Country 1:** The populations will increase because there is a very large number of people just under usual marriage/child-bearing ages. **Country 2:** The population will decrease because there are fewer young people now than in the past; therefore, future reproduction will be less than previously.
	Difficulty: Difficult Link to: 4.1

54.	The graph below shows the population parameters of two countries. Both countries are the same in all of their population characteristics <u>except</u> their age distributions. Which country could best be described as being in a demographic trap?
Ans:	Country 1 could best be described as being in a demographic trap.
	Difficulty: Medium Link to: 4.5

55.	Give examples of a short-term, an intermediate-term, and a long-term factor that can disrupt the distribution of food within a country.
Ans:	Short -term: drought , political events Intermediate-term: long-term climatic changes, desertification, wide dispersal of certain pollutants Long-term: soil erosion, decline of groundwater supply, acid rain
	Difficulty: Medium Link to: 4.8

56.	Why do high fertility rates tend to trap developing countries in a cycle of increasing poverty?
Ans:	Because poor people need security when they are too old to work, which they tend to achieve with many children, which in turn will try to achieve security themselves by trying to have many children . This leads to a tremendous population growth which makes a country even poorer.
	Difficulty: Medium Link to: 4.7