Chapter Test A
Population Ecology

Part A: Multiple Choice

In the space at the left, write the letter of the term or phrase that best completes each statement or answers each question.

1. Which is an example of population density?
   A. country with a large population
   B. maximum number of wolves in a forest
   C. total number of alligators in Florida
   D. two jaguars per thousand hectares

2. Demography is the study of_____.
   A. available resources.
   B. biosphere health.
   C. human population.
   D. organism competition.

3. Humans will reach zero population growth when_____.
   A. birthrate equals death rate.
   B. carrying capacity is reached.
   C. humans stop giving birth.
   D. world population stops growing.

Part B: Matching

Check the box to indicate whether the statement is an example of a density-dependent factor or density-independent factor.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Density-Dependent Factor</th>
<th>Density-Independent Factor</th>
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</thead>
<tbody>
<tr>
<td>1. Hurricanes frequently reduce palm tree populations.</td>
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<td>2. An ice storm kills many waterfowl.</td>
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<td>3. As the number of cheetahs drops, the number of gazelles increases.</td>
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<tr>
<td>4. An island has only enough nesting sites for six pairs of pelicans.</td>
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</tbody>
</table>
Part C: Interpreting Graphs

Use the graph above to respond to each question.

1. **Interpret** How many wolves were on Isle Royale in 1980?

2. **Interpret** What year was the moose population at its lowest?

Use the graph on the right to respond to each statement.

3. **Identify** the type of growth represented by the graph.

4. **Identify** the carrying capacity of this population.
Part D: Short Answer

Write your response to each statement in the space provided.

1. **Contrast** the three types of dispersal.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

2. **Contrast** the reproductive strategy of an $r$-strategy organism and a $k$-strategy organism.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

Part E: Concept Application

Write your response to each statement in the space provided.

1. **Predict** the future population trend for a country with 55 percent of its population younger than the age of 20.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

2. **Infer** how the human population growth would have been different if present-day medicine had not been developed. Use the term *carrying capacity* in your answer.

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
Section A: Multiple Choice

In the space at the left, write the letter of the phrase that best completes each statement or answers each question.

1. Which is an example of uniform dispersal?
   A. one large buffalo herd
   B. random elephant groups
   C. school of silverside fish
   D. territorial jaguar pairs

2. Which is a density-independent factor for a flock of Canada geese on a large lake?
   A. dwindling food supply
   B. infectious virus
   C. intestinal worms
   D. unusually cold winter

3. Which is an adverse effect of a negative-growth population trend?
   A. an excess burden on global natural resources
   B. inadequate financial resources to care for children
   C. too few jobs to support a large, young population
   D. too few workers to support an aging population

4. Which might increase the human carrying capacity during the twenty-first century?
   A. changing reproductive patterns
   B. family planning strategies
   C. new technological advances
   D. widespread fatal diseases

5. The use of total global resources by humans is measured in
   A. barrels of oil used per person.
   B. hectares of land used per person.
   C. industrial metals used per country.
   D. total food consumed per country.

Section B: Matching and Completion

Matching Write the letter of the correct term on the line next to its description. Answers may be used only once or not at all.

1. considered a developing country
   A. Germany
   B. Sudan
   C. United Kingdom
   D. United States

2. uses the greatest amount of resources per person

3. has a negative-growth population trend
Chapter Test B CONTINUED

Completion  Write the correct term in the blank to complete each sentence below.

4. The number of organisms per unit area is called ________________________.
5. When organisms move away from a population, it is called ________________________.
6. The complete study of human population is called ________________________.
7. A change in population from high birth and death rates to low birth and death rates is called a(n) ________________________.

Part C: Interpreting Graphs

Use the graph above to respond to each statement.

1. Contrast the wolf and moose population in 1970.  

2. Infer the carrying capacity of wolves on the island.
Chapter Test B CONTINUED

Use the graph on the right to respond to each statement.

3. Identify the lines or line segments representing the carrying capacity, lag-phase, and S curve on the graph.

4. Identify the time period where the logistic population growth graph resembles the exponential population growth graph.

Part D: Short Answer

Write your response to each statement in the space provided.

1. Contrast the reproductive strategies of a housefly and an elephant.

2. Explain zero population growth.

Part E: Concept Application

Write your response to each statement in the space provided.

1. Infer An adult damselfish will vigorously defend a square meter patch of algae on a coral reef from other herbivores. This behavior ensures that reef algae is not overgrazed. Infer why the number of damselfish on the reef is limited by the surface area of reef coral. Use the term density-dependent factor in your answer.

2. Formulate a plan that a country could follow to reduce its population growth without the controversial practice of abortion.
Chapter Test C

Population Ecology

Part A: Multiple Choice

In the space at the left, write the letter of the term, phrase, or sentence that best answers each question.

1. Which is **not** used to describe a population of grizzly bears in Canada?
   A. demographic history
   B. geographic distribution
   C. overall growth rate
   D. population density

2. Which is a characteristic of exponential population growth?
   A. Growth rate is inversely proportional to population size.
   B. Initial population growth is rapid.
   C. Resources are consumed exponentially during all phases.
   D. The lag phase follows rapid growth.

3. Which organism follows an $r$-strategy for reproduction?
   A. human
   B. mayfly
   C. robin
   D. zebra

4. Which describes the current human population growth?
   A. decreasing growth and increasing rate of growth
   B. decreasing growth and rate of growth
   C. increasing growth and decreasing rate of growth
   D. increasing growth and rate of growth

5. Which could decrease the human carrying capacity?
   A. corrupt governments
   B. energy crisis
   C. epidemic disease
   D. unequally distributed resources

Part B: Completion

Write the correct term in the blank to complete each sentence below.

1. An average of 78 Norway maple trees per hectare of deciduous forest is an example of ______________________.

2. Twenty gray squirrels moving out of a forest into a new ecosystem is an example of ______________________.

3. The movements of citizens fleeing their country to find political asylum in a neighboring country is part of the study of ______________________.

4. The event that precipitated exponential human population growth is called the ______________________.
Chapter Test C CONTINUED

5. The high birthrate in Italy decades ago changing to a low rate today is an example of a(n) _______________.

6. When the birthrates and death rates of a country are equal, the country is experiencing _______________.

Part C: Interpreting Graphs

Use the graph above to respond to each question and statement.

1. Interpret What was the wolf population each year from 1970 to 1975?

2. Infer how the carrying capacity of wolves on the island could decrease.

3. Infer how the carrying capacity of wolves on the island could increase.
Chapter Test C CONTINUED

Use the graph on the right to respond to each question and statement.

4. Identify the parts of the graph labeled A–C.
   A.
   B.
   C.

5. Infer What does the bottom line segment between the time period of 17 and 25 represent?

Part D: Short Answer

Write your response to each statement in the space provided.

1. Contrast density-dependent and density-independent factors. Provide examples with your answer.

2. Contrast countries with rapid growth, slow growth, and negative growth human populations.

Part E: Concept Application

Write your response to each statement in the space provided.

1. Predict the effect of an inexpensive AIDS vaccine on both regional and global population trends.

2. Consider the relationship between the expansion of women’s rights in a country and its population growth.