

Applied Practice

***Homeostasis in  
Biological Systems  
STAAR Biology EOC***

**RESOURCE GUIDE**

**Volume 9**

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**APPLIED PRACTICE**  
**Resource Guide**  
*Homeostasis in Biological Systems*  
**STAAR Biology EOC**

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**Choose the best answer to each question.**

- 1 In the digestive system of the human body, lactobacilli are part of the normal flora that inhibit the growth of pathogenic bacteria. When a person takes antibiotics, the natural flora is often destroyed along with the pathogenic bacteria. This can result in —
- A a strengthened immune system
  - B a more efficient digestive system
  - C reduction of digestive efficiency
  - D illnesses such as diarrhea
- 
- 2 In Mississippi, there has been an annual decrease in the food supply of the white-tailed deer. Predict which of the following would be the most realistic response observed within the deer population.
- F The rate of reproduction among the deer will increase, increasing the size of the deer population.
  - G The deer will develop a mutualistic relationship with other herbivores.
  - H The rate of reproduction among the deer will decrease, decreasing the size of the deer population.
  - J The deer will travel to a new area to find food sources.
- 
- 3 Which of the following ecosystems contributes the most to the global net primary production in a year?
- A Tundra
  - B Coniferous forests
  - C Savanna
  - D Oceans

4 In an area where life has never existed previously, succession begins with pioneer organisms. Of the following organisms, which is a pioneer organism?

F Tall grasses

G Lichens

H Flowering plants

J Fish

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5 In a deciduous forest, fallen trees lie on the forest floor, where they are exposed to microorganisms. These microorganisms work to —

A recycle nutrients from the dead trees back to the soil

B convert radiant energy into chemical energy

C break down inorganic molecules into organic molecules

D increase the number of primary producers in the ecosystem

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6 The human body's internal temperature is 37 degrees Celsius. If a person is in a room when the temperature in the room rises, the person will begin to sweat. The sweat creates a cooling effect at the surface of the skin. Sweating is an example of a mechanism to maintain —

F transpiration

G metabolism

H homeostasis

J evaporation

Use the following data table to answer questions 7-8.

Tidal Pool Species and Populations					
	Year 0	Year 1	Year 2	Year 3	Year 4
Sea stars	10	10	5	0	0
Chitons	20	22	35	12	0
Limpets	26	25	43	27	12
Barnacles	33	35	66	30	14
Mussels	20	22	45	67	82

7 Over the course of four years, a scientist examined a community on a rocky tidal pool. He noticed significant changes to the populations of the various species in the tidal pool. According to the data table, which of the species was the main competitor?

- A Sea stars
- B Limpets
- C Chitons
- D Mussels

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8 According to the data table, which species was the keystone species of the tidal pool?

- F Mussels are the keystone species because their abundance increased over the course of the experiment.
- G Chitons are the keystone species because they died out from the tidal pool during the last year of the experiment.
- H Sea stars are the keystone species because once they were removed from the community, the rest of the tidal pool community changed.
- J Limpets are the keystone species because their population increased and then decreased throughout the course of the experiment.