

1 Expectation: B.7(A)

Look at the photograph of the cherries and the information about the genus *Prunus* below.



Facts About the Genus *Prunus*

- Species belonging to the genus *Prunus* include plums, cherries, peaches, and apricots.
- Species belonging to the genus *Prunus* are trees or shrubs.
- Species belonging to the genus *Prunus* can be deciduous or evergreen.

What evidence indicates that plants belonging to the genus *Prunus* are descended from a common ancestor?

- A** All species belonging to the genus *Prunus* are found in only one area of the world.
- B** At least two species belonging to the genus *Prunus* have fruits that differ in color.
- C** More than three species belonging to the genus *Prunus* produce flowers.
- D** Many species belonging to the genus *Prunus* are cultivated in commercial agriculture.

2 Expectation: B.6(F)

Baldness is a dominant trait that is influenced by an individual's sex. A man will become bald if he has the genotype BB or Bb. A man who is bb will not become bald. A woman will have thinning hair, but not become totally bald, if she is BB. A woman will not become bald if she is Bb or bb. What will be the outcome if a woman who is XXbb produces a child with a man who is XYBb?

- F** There is a 100% chance that the child will become bald.
 - G** There is a 25% chance that the child will not become bald.
 - H** There is a 75% chance that the child will not become bald.
 - J** There is a 50% chance that the child will become bald.
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3 Expectation: B.6(B)

The genetic code of an advanced species of grasshopper contains —

- A** no bases in its DNA, and a primitive species of algae contains bases in its DNA.
 - B** different bases in its DNA than a primitive species of algae.
 - C** bases in its DNA, and a primitive species of algae contains no bases in its DNA.
 - D** the same bases in its DNA as a primitive species of algae.
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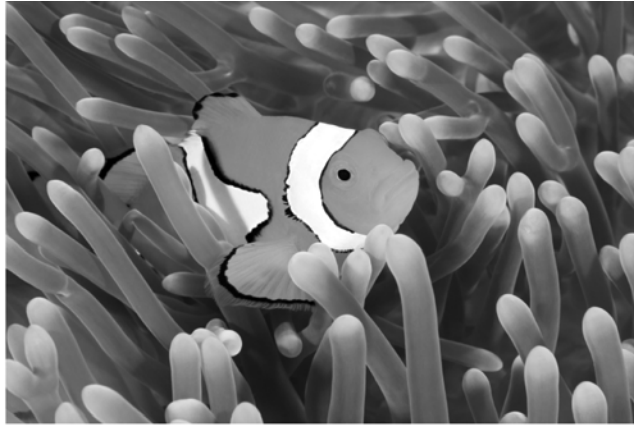
4 Expectation: B.12(E)

The action of decomposers in the nitrogen cycle facilitates the —

- F** restoration of nitrogen compounds to the soil.
- G** synthesis of proteins from nitrates.
- H** fixation of atmospheric nitrogen.
- J** removal of nitrogen compounds from the atmosphere.

5 Expectation: B.12(A)

Look at the photograph and information below regarding the clown anemonefish.



Facts About Clown Anemonefish

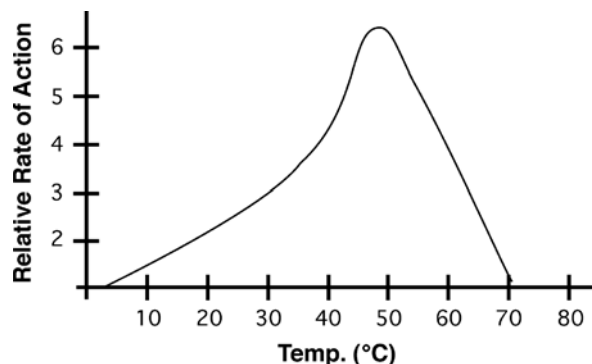
- The clown anemonefish nests close to some species of sea anemones.
- The clown anemonefish is covered in mucus that protects it from the sting of sea anemone tentacles.
- Sea anemones eat parasites on clown anemonefish, and clown anemonefish eat algae and the dead tentacles of sea anemones.

Which of the following statements is true?

- A** Clown anemonefish have a predator-prey relationship with sea anemones.
- B** Clown anemonefish have a competitive relationship with sea anemones.
- C** Clown anemonefish have a mutualistic relationship with sea anemones.
- D** Clown anemonefish have a parasite-host relationship with sea anemones.

6 Expectation: B.9(C)

The graph below shows the effect of temperature on Enzyme X's rate of action on a protein.



Which of the following would not affect Enzyme X's rate of action?

- F** The addition of cold water when the reaction is at 50 degrees Celsius
- G** A decrease in temperature from 40 to 10 degrees Celsius
- H** An increase in temperature from 70 to 80 degrees Celsius
- J** The removal of the protein when the reaction is at 30 degrees Celsius

7 Expectation: B.4(A)

An intron is a sequence of DNA that does not code for an action. Introns are located between sequences of DNA that code for actions. One difference between prokaryotic cells and eukaryotic cells is that —

- A** prokaryotic cells sometimes reverse the order of bases in introns, and eukaryotic cells tend not to disturb the order of bases in introns.
- B** prokaryotic cells tend to contain introns composed of nitrogenous bases, and eukaryotic cells tend to contain introns composed of hydrogenous bases.
- C** prokaryotic cells usually copy introns to sequences of ribonucleic acid (RNA), and eukaryotic cells usually do not copy introns to sequences of RNA.
- D** prokaryotic cells usually do not contain introns, and eukaryotic cells usually contain introns.

8 Expectation: B.12(F)

Louis Agassiz, a Swiss geologist of the 19th century, was the first person to propose that Earth had undergone an ice age. Agassiz noted that a drop in temperature could impact many ecosystems by —

- F** causing large lakes to freeze into icebergs, thus increasing the stability of the ecosystem.
 - G** causing seas and oceans to alternately freeze and melt, thus increasing the stability of the ecosystem.
 - H** causing blocks of ice to form in barren areas, thus maintaining the stability of the ecosystem.
 - J** causing large sheets of ice to form over mountain ranges, thus decreasing the stability of the ecosystem.
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9 Expectation: B.11(D)

In the Edwards Aquifer of south central Texas, salamanders live both below ground and above ground. One day, a ceiling of a limestone cave in the aquifer collapses, filling in the cave below. A sinkhole forms in the grassland above. With the next rain, the sinkhole fills with fresh water. How will this series of events most likely affect the population of salamanders in the region?

- A** The series of events will only increase the salamander population.
- B** The series of events will only decrease the salamander population.
- C** The series of events will first increase, then decrease the salamander population.
- D** The series of events will first decrease, then increase the salamander population.



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Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Process Student Expectation	Correct Answer
1	3	Readiness	B.7(A)	B.3 (B)	C
2	2	Readiness	B.6(F)		H
3	2	Supporting	B.6(B)		D
4	5	Supporting	B.12(E)		F
5	5	Readiness	B.12(A)	B.2 (G)	C
6	4	Supporting	B.9(C)	B.2 (G)	H
7	1	Supporting	B.4(A)		D
8	5	Readiness	B.12(F)	B.3 (F)	J
9	5	Readiness	B.11(D)		D