# **Answer Key**

#### Unit 1 Diversity of Living Things

#### Unit Preparation Questions (Assessing Readiness) (Student textbook pages 4–7)

- 1. d
- $2_{\rm s} <$
- 3. c
- 4. a. Photosynthesis is the process that producers, such as plants, algae, and some bacteria, use to chemically convert carbon from carbon dioxide into glucose using light energy from the Sun. Oxygen is also produced in the process.
  - b. Cellular respiration is a process that releases the energy stored in glucose. Carbon dioxide and water are also produced in the process. The chemical reactions involved in cellular respiration occur in most species, including species of plants and animals.
- An ecosystem is all the interacting parts of a biological community and its environment—terrestrial are land-based ecosystems, while aquatic are waterbased ecosystems.
- 6. A sustainable ecosystem is one that is capable of withstanding pressure and giving support to a variety of organisms. Sustainable ecosystems endure, but they also support a wide variety of organisms.
- 7. Sustainable ecosystems continue in the same state, while supporting a wide variety of organisms. If the ecosystem cannot continue in the same state, then organisms will have to move to another ecosystem or perish.
- 8. Sample answers: I agree with the statement because consumers need the oxygen produced by producers or that consumers need to eat producers; I disagree with the statement because producers need carbon disoxide made by consumers and need nutrients made by consumers (for example, feces or decomposer products).
- The average global temperatures are increasing.
   Scientists predict this trend will continue. Warmer average temperatures will increase evaporation. Closer

to the equator it will mean less rainfall. Polar regions could experience more precipitation. As Earth's atmosphere warms, so do its oceans. This warming could result in increased severity and frequency of storms.

- 10. Ecosystem services are the natural result of all the activities that occur in the biosphere. Ecosystem services allow ecosystems to function, which is a requirement of sustainability.
- 11. A sustainable ecosystem must maintain a state of balance between its diverse living parts and its nonliving, physical environment. This state of balance is called equilibrium. An ecosystem that is in equilibrium tends to have a high degree of biodiversity. Such an ecosystem tends to be a sustainable ecosystem.
- 12. Five times in the past there were short periods when many species disappeared. These are known as mass extinctions.
- 13. a.
- 14. d
- 15. A microscope is a delicate and expensive piece of technology. Not handling it properly or not following the proper procedures could damage or even destroy the microscope. You should use two hands—one hand holding the arm while the other holds the base of the microscope.

#### 16. a

#### 17. a. and b. Sample answer:

Letter	Structure	Function	
^	Eyepiece (ocular lens)	You look through the eyepiece and it magnifies the object.	
8	Revolving nose piece	This rotating disk holds two or more objective lenses; turn it to change lenses.	
c	Stage clips	These hold microscope slides above the light source, under the lens.	
D	Diaphragm	The diaphragm controls the amount of light reaching the specimen being viewed.	
E	Light source	Shining a light through the specimen makes it easier to see the details.	

# **Section 17 1 Review Biodiversity Answer Key**

**G Psacharopoulos** 

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