Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

On any exam, *use ONLY the textbook. DO NOT copy from the internet.*

***Fill in the Blank:*** *Type your answer(s) in the blank(s).*

1. Mitochondria and chloroplasts reproduce the same way free-living bacteria do—by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. The tropism that allows seedlings to find their way out of the soil and into the sunlight is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. The seahorse is an unusual example of a(an) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ species because the male incubates the eggs in a pouch before giving birth to fully formed live offspring.

4. Structures that have different functions in different species but develop from the same embryonic tissues are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ structures.

5. Species of Homo \_\_\_\_\_\_\_\_\_\_\_\_\_\_ found in Java suggest that this species of hominine spread rapidly after leaving Africa.

6. Fishermen often claim that fish are more likely to strike at bait when it is raining because the fish react to the raindrops on the surface of the water as if they were potential food. This response is considered a behavior because the fish are responding to a stimulus in their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. To find out which key will open a lock, you try several until one works. This kind of learning is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

8. Addictive drugs produce changes in one particular group of synapses that use the neurotransmitter \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Short Answer: Type your answer below each question. Use complete sentences. Use ONLY the textbook. DO NOT copy from the internet.**

9. What information does relative dating provide?

10. How are bryophytes similar to green algae? How are they different?

11. During a very hot, sunny day, are stomata likely to be open or closed? Explain.

12. Why is it an advantage for a newborn mammal that suckling is an innate behavior?

13. When scientists raise newly hatched birds that have lost their parents, the scientists often use puppet-like devices to feed and care for the young birds. These puppet-like devices look like adult birds of the same species as the newly hatched birds. Why do the scientists use these puppet-like devices?

14. Recall what you learned about plant evolution in Chapter 22. Based on the evolutionary changes shown in the cladograms on pages 636 and 758, identify the first major adaptations that allowed plants and chordates to live on land. *Hint – the adaptation for both the plant and animal is similar in function.* In what way is the chordate adaptation to life on land similar to plant adaptation to life on land?

15. An earthworm tunnel floods during a rainstorm, and the earthworm washes out onto the grass. According to Ch.27, what is the importance of the moisture from the tunnel to the earthworm?

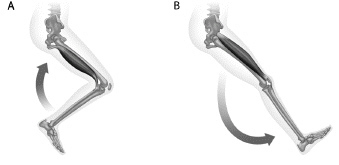
16. How does parthenogenesis differ from other forms of asexual reproduction? Make sure to include descriptions of the other forms from Ch.28.

17. Describe the role of the cochlea in hearing.

18. Consider the roles of valves and blood vessel walls in moving blood through the body. If you were given a piece of flexible tubing and a small piece of plastic, how might you design a simple model that would simulate those roles?

19. How does having a large, sweet fruit benefit a plant?

20. The figure below from Ch.28 shows the sequence of events in a soccer kick. Describe what is happening in each image. What happens to the opposite muscles in the muscle pair during each stage of the kick?

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