***Animal Diversity, 8e* (Hickman)**

**Chapter 18 Amniote Origins and Nonavian Reptiles**

1) Which of these terms would be used by cladists to describe the members of the class Reptilia?

A) Monophyletic

B) Polyphyletic

C) Paraphyletic

D) A subset of the class Aves

E) None of the choices are correct.

Answer: C

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: General-Understand basic concepts related to reptiles.

Bloom's: 1. Remember

Gradable: automatic

2) Nonavian reptiles are a paraphyletic group because

A) they do not have a common ancestry.

B) they have a common ancestry.

C) they do not include all descendants of their most recent common ancestor.

D) they include all descendants of their most recent common ancestor.

Answer: C

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.05 Identify the phylogenetic position of dinosaurs and briefly describe at least four different groups.

Bloom's: 2. Understand

Gradable: automatic

3) The Age of Reptiles consisted of the

A) Silurian, Permian, and Jurassic.

B) Permian, Triassic, and Jurassic.

C) Triassic, Jurassic, and Cretaceous.

D) Permian, Jurassic, and Cretaceous.

Answer: C

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: General-Understand basic concepts related to reptiles.

Bloom's: 1. Remember

Gradable: automatic

6) The anapsid skull is characterized by

A) two pairs of openings separated by a bony arch.

B) a single pair of openings and a bony arch.

C) no temporal openings and the skull roofed with dermal bone.

D) three pairs of openings to accommodate the nerves from an expanding sensory system.

E) a beak-like process that associates the turtles and the birds.

Answer: C

Section: 18.01

Topic: Origin and Early Evolution of Amniotes

Learning Objective: 18.01 Describe three different types of amniote skulls.

Bloom's: 1. Remember

Gradable: automatic

7) Birds and \_\_\_\_\_\_\_\_ belong to a monophyletic group apart from other reptiles and are assigned to the clade \_\_\_\_\_\_\_\_.

A) dinosaurs, therapsida

B) mammals, therapsida

C) crocodilians, therapsida

D) crocodilians, archosauria

E) turtles, sauropterygia

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: General-Understand basic concepts related to reptiles.

Bloom's: 1. Remember

Gradable: automatic

8) Which list below includes the four monophyletic nonavian reptilian groups?

A) Dinosaurs, modern reptiles, birds, and mammals.

B) Turtles, crocodilians, lizards, and snakes.

C) Dinosaurs, turtles, squamates, and crocodilians.

D) Turtles, crocodilians, squamates, and tuataras.

E) Dinosaurs, tuataras, crocodilians, and all other modern reptiles.

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.05 Identify the phylogenetic position of dinosaurs and briefly describe at least four different groups.

Bloom's: 1. Remember

Gradable: automatic

11) Turtle fossils appear in the \_\_\_\_\_\_\_\_.

A) Permian

B) Triassic

C) Carboniferous

D) Jurassic

E) Cretaceous

Answer: B

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

12) What is the name of the bottom plate on a turtle, which is continuous with the breastbone (sternum)?

A) Costal

B) Plastron

C) Carapace

D) Dorsum

E) Ventrum

Answer: B

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

13) Since a turtle's shell essentially immobilizes the ribs, how does the turtle breathe?

A) The turtle has such a low metabolic rate that all oxygen requirements can be met by passive absorption without ventilation mechanisms.

B) The turtle wags its tail to change the volume within the shell and assist ventilation.

C) The turtle draws its shoulder girdle back to exhale and contracts limb flank muscles to inhale.

D) The ribs are allowed a small amount of leeway to move; rhythmic compression of the carapace on the plastron accomplishes this.

Answer: C

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

16) We don't find the eggs of garter snakes, rattlesnakes, and copperheads because they retain the eggs internally. Their young appear to be born alive, but actually hatch inside the female. These snakes are \_\_\_\_\_\_\_\_.

A) nulliparous

B) viviparous

C) oviparous

D) ovoviviparous

E) placentotrophic

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.02 List membranes associated with amniote eggs and identity their functions.

Bloom's: 1. Remember

Gradable: automatic

17) The \_\_\_\_\_\_\_\_ is a small, agile, mostly nocturnal lizard that has adhesive toe pads that enable it to walk upside down on a ceiling.

A) iguana

B) skink

C) chameleon

D) gecko

E) gila monster

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

18) To separate a limbless (glass) lizard from a real snake, what could you look for?

A) Flexible grooves on the lateral surface of the lizard, missing in snakes.

B) Rough scales on lizards, smooth scales on snakes.

C) Lizards at night, snakes in the daytime.

D) Lizards in trees, snakes on the ground.

E) All of the choices are correct.

Answer: A

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

19) Lizards and snakes are closely related; there are a number of poisonous snakes. How common are venomous lizards?

A) Many venomous tropical species exist.

B) No lizards are venomous.

C) All lizards are at least a little poisonous but only the big ones have enough venom to be worrisome.

D) They are uncommon: In North America, the Gila Monster and Mexican Beaded lizards are the only lizards venomous to humans.

E) None of the choices are correct.

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

20) When a snake flicks its tongue out to "taste" the air or my hand, it must return the tips of the tongue past the \_\_\_\_\_\_\_\_ in the roof of its mouth to detect the "taste."

A) heat-sensitive pits

B) kinetic skull

C) parietal eye

D) fangs

E) Jacobson's organ

Answer: E

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

21) Which of the following families contains venomous snakes?

A) Viperidae—pit vipers and Old World vipers.

B) Elapidae—mambas, coral snakes and kraits.

C) Hydrophiidae—sea snakes.

D) All of the choices are correct.

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

22) The tuatara

A) is found in southwestern United States.

B) is snakelike in its features.

C) is the only surviving dinosaur relative.

D) has a well-developed parietal eye.

E) All of the choices are correct.

Answer: D

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

23) Crocodiles have a complete secondary palate that allows them to

A) cool off in hot weather by "gaping."

B) breathe while the mouth is filled with water or food.

C) smell the animal that they have seized.

D) make loud mating calls.

Answer: B

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

25) Amniotes having a skull with two temporal openings on each side are called \_\_\_\_\_\_\_\_.

Answer: diapsids

diapsid

Section: 18.01

Topic: Origin and Early Evolution of Amniotes

Learning Objective: 18.01 Describe three different types of amniote skulls.

Bloom's: 1. Remember

Gradable: automatic

26) The synapsid lineage gave rise to present day \_\_\_\_\_\_\_\_.

Answer: mammals

Section: 18.01

Topic: Origin and Early Evolution of Amniotes

Learning Objective: 18.01 Describe three different types of amniote skulls.

Bloom's: 1. Remember

Gradable: automatic

27) The dermal layer of the reptile skin contains color-bearing cells called \_\_\_\_\_\_\_\_.

Answer: chromatophores

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.03 Describe the skin, lungs, circulatory systems, and excretory systems of amniotes.

Bloom's: 1. Remember

Gradable: automatic

28) Rather than urea or ammonia, the nitrogenous wastes of reptiles are excreted as \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_.

Answer: uric acid

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.03 Describe the skin, lungs, circulatory systems, and excretory systems of amniotes.

Bloom's: 1. Remember

Gradable: automatic

30) In the nonavian reptilian egg, the embryo is bathed in a fluid contained within an extra-embryonic membrane called the \_\_\_\_\_\_\_\_.

Answer: amnion

Section: 18.01

Topic: Origin and Early Evolution of Amniotes

Learning Objective: 18.02 List membranes associated with amniote eggs and identity their functions.

Bloom's: 1. Remember

Gradable: automatic

31) In turtles, the ribs are fused to the dorsal portion of the shell, called the \_\_\_\_\_\_\_\_.

Answer: carapace

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

32) Snakes that have special heat-sensitive pits on their heads are called \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_.

Answer: pit vipers

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

35) Surviving tuataras (*Sphenodon*) are mostly restricted to a group of islands off the coast of \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_.

Answer: New Zealand

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 1. Remember

Gradable: automatic

39) Describe the unique morphological characteristics of amphisbaenians and explain how these differ from snakes.

Answer: Answers will vary.

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 4. Analyze

Gradable: manual

40) Outline the morphological contributions of the Reptilia. What changes are considered reptilian innovations?

Answer: Answers will vary.

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 3. Apply

Gradable: manual

45) Explain why the amniotic egg is such a momentous evolutionary advance.

Answer: Answers will vary.

Section: 18.01

Topic: Origin and Early Evolution of Amniotes

Learning Objective: 18.02 List membranes associated with amniote eggs and identity their functions.

Bloom's: 3. Apply

Gradable: manual

49) Why should limbs be secondarily lost in so many lineages of nonavian reptiles?

Answer: Answers will vary.

Section: 18.02

Topic: Characteristics and Natural History of Reptilian Orders

Learning Objective: 18.04 Describe morphological or behavioral characteristics of major groups of nonavian reptiles.

Bloom's: 4. Analyze

Gradable: manual