

SCIENCE OLYMPIAD
— AT THE —
UNIVERSITY OF FLORIDA

Northern Regional: January 19th, 2019

Herpetology C Question Packet Answer Key

Name(s): _____

Team Name: _____

School Name: _____

Team Number: _____

Rank: _____

Score: _____

Herpetology C Question Packet **Key**

1) **Pleurodira and Cryptodira (2)**

In Pleurodires, the neck vertebrae flex laterally, allowing the neck to bend and pull the head in sideways; In Cryptodires, the neck vertebrae flex vertically, allowing the head to be drawn straight back within the shell (2)

2) **1. Phalanges 2. Proscapular Process 3. Coracoid 4. Pelvic Girdle 5. Femur (5)**

3) **Bale (1)**

4) **sucking air into their lungs and pushing it out by moving the limbs in and out relative to the shell (2)**

5) **These species consist of all females who reproduce asexually with no need for males (2)
Cnemidophorus (Whiptails) (1)**

6) **Helodermatidae (Gila monster) (1)**

a. **Neurotoxin (1)**

b. **Delivered via grooves in the teeth as it chews on its victim (1)**

c. **No (1)**

7) **1. a (1)**

2. c (1)

3. b (1)

8) **Thecodont (1)**

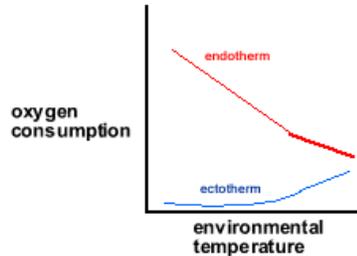
9) **High walk and Low walk (2)**

High walk: the belly and most of the tail is held off the ground, sequence of limb movements: left fore, right hind, right fore, left hind (2)

Low walk: Belly is dragged on the ground as they push with their feet (2)

10) **The distinct difference in size or appearance between the sexes of an animal (1)**

- 11) Cretaceous and Paleogene boundary; Frog net diversification increased and new species developed; right after this boundary, the evolution of the 3 major frog lineages appeared almost simultaneously. (2)
- 12) Frogs create this sound by passing air through the larynx in the throat. In most calling frogs, the sound is amplified by one or more vocal sacs, membranes of skin under the throat or on the corner of the mouth that distend during the amplification of the call. (2)
- 13) Frogs tend to produce globular clusters containing large numbers of eggs whereas toads produce long, cylindrical strings. (1)
- 14) Suggests that viviparity provides an advantage in cold environments by allowing mothers to maintain higher temperatures for developing embryos. It posits that viviparity evolves as an adaptation to cold temperatures during the egg-laying season. Cold conditions are problematic because they can slow development and are potentially lethal to developing eggs. (4)
- 15) Plays a key role in regulating growth of limbs and digits; There is a mutation in snakes that degrades the activation of the gene. Snakes that are completely limbless show more decay of that gene while those that retain vestigial legs have less decay. (3)
- 16) (2)



- 17) Dystocia is the retention of follicles or eggs in the female. It is found in squamata. (2)
- 18) The first known fossil salamanders are *Koikartus honorarius* (1)
- 19) Lateral undulation, sidewinding, concertina, arboreal, and rectilinear (5)
- 20) The jelly provides support and protection while allowing the passage of oxygen, carbon dioxide and ammonia. (3)