SSSSS Herpetology Test Key

By: sleepis4theweak
1. Identify the Family and Common Name of creature A. **Cryptobranchidae, Hellbenders**
2. What does adaptation does specimen A have that makes up for its poor eyesight? **Light sensitive cells all over their bodies.**
3. What sexual dimorphism does specimen A and when does it occur? A bulging ring around their cloacal glands, Mating season.
4. Identify the Family and Common Name of creature B. **Proteidae, Mud Puppies**
5. Why is specimen B a good indicator of environmental quality? Their thin skin and dependence on clean, well-oxygenated water.
6. Specimen B has eyelids. T/F  **False**
7. List 3 key differences between specimen A and specimen B. **Hellbenders do not have external gills, hellbenders have wrinkles for greater surface area, hellbenders are much larger. Hellbenders take in oxygen through skin, hellbenders lay 300-400 eggs (in contrast to the 20-180 of mudpuppies), hellbenders have 5 hindtoes (mudpuppies only have 4).**
1. Name the Class, Order, Suborder, Family, Genus, and common name of this specimen. **Reptilia, Squamata, Serpentes(Ophidia), Colubridae, Heterodon, Hognosed Snake(Puff Adder works too)**

2. What characteristic gives this specimen its common name?  *Its pointed, upturned nose, used for burrowing for prey.*

3. What creature makes up the majority of this specimen’s diet? And what special adaptation does this specimen have to hunt said creature? **Toads, immune to toad poison, has mild venom used to deflate inflated toads.**

4. What behavior is exhibited when this specimen is threatened? **Playing dead, flattens head, hissing, defecate and regurgitate food.**

5. What were the two nicknames given to this specimen by native Floridians? **Puff Adder, Spreading Adder**

6. This specimen takes only 1 mate for life. **T/F False**
Name each amplexus position.

A. Inguinal
B. Axillary
C. Cephalic
D. Dorsal Straddle
E. Glued
F. Head Straddle
G. Independent
1. Name the Class, Order, Family, Genus, and common name of this specimen. *Reptilia, Testudines (Chelonia), Emydidae, Malaclemys, Diamondback Terrapins*

2. What adaptation does this specimen have that allows it to survive in saltwater environments? Like sea turtles, diamondback terrapins possess salt glands around their eyes, allowing them to secrete excess salt from their blood, and survive in salty environments.

3. What sexual dimorphism does this specimen exhibit? Males being much smaller (5-6 in), while females are considerably larger (9 in) as adults.

4. Which gender does the sex ratio of this species seem to favor? *Females*

5. Why has the blue crab industry lead to the decline of this specimens population? Terrapins are attracted to the same bait used to lure blue crabs. When trapped in submerged crab pots or commercial fishing gear, air-breathing terrapins will eventually drown.

6. How many subspecies does this specimen have? 7

7. Which airport had delays caused by the appearance of 78 of these specimens appearing on the runway? *John F. Kennedy Airport in New York City*
1. Name two differences between frogs and toads.
   
   Skin texture/color, how eggs are laid, habitat, leg size, teeth, eyes

2. Name two differences between crocodiles and alligators.
   
   Snout shape, teeth, habitat, skin color, salt glands, mating, habitat, size, sense organs, etc.

3. Name two differences between reptiles and amphibians.
   
   Egg texture, skin texture, reproduction, origin, feet, respiration, neck vertebrae, metamorphosis, defense, etc.

4. Name two differences between turtles and tortoises.
   
   Habitat, shell retraction, size, diet, limbs, etc.

5. Explain the difference between amniotes and anamniotes.
   
   Amniotes lay their eggs on land or keep them within the mother, while anamniotes lay their eggs in water.

6. What order on the list commonly displays paedomorphism?
   
   Caudata

7. Why are amphibians a good indicator of environmental quality?
   
   They have semi permeable skin which can absorb toxicity, so a high population of amphibians is good.

8. True or false: members of the order Crocodilia first appeared in the Triassic period
   
   False

9. True or false: most reptiles have a 3-chambered heart
   
   True
1. Name the genus and the common name of this specimen. 
Cophosaurus and Holbrookia - earless lizards

2. What is the small opening on top of this specimen’s head called? What does it do? 
Blood sinus - helps lizard gain heat quickly AND/OR helps lizard shoot blood to deter predators

3. What is the difference between the male and female specimens of this genus? 
Males have yellow tint on lower sides, blue outlines around black side bars, light speckling, and less distinct dorsal blotches. Females have a pink or peach tint and an orange throat patch. OR male has 2 black stripes ahead of its hind legs. Females have a black stripe behind each thigh.

4. What does this specimen eat? 
Insects, spiders, small lizards

5. Name three states this specimen can be found in. 
TX, AZ, NM, UT, CO, KS, OK, NE, SD, WY

6. What is the average size of this specimen? 
3-7 inches
1. Name the genus and common name of each specimen.  
   A - Crocodylidae (Crocodile)  B - Alligatoridae (Alligator)  
2. How many chambers does each specimen’s heart have?  
   A - 4 chambers  B - 3 chambers  
3. True or false: specimen A can live in salt water. If true, explain why. If false, explain why not.  
   True - they have specialized salt glands  
4. How is the sex of the offspring of both specimens determined?  
   Temperature  
5. What is the average size of an adult from genus B?  
   40 meters (13.1 feet)  
6. Is specimen A primarily a diurnal or a nocturnal hunter?  
   Nocturnal  
7. How many living species are in the genus of specimen B?  
   2
1. Name the genus and common name of this specimen.
   Hemidactylium - Four-toed salamander

2. What is the difference between males and females of this genus in appearance?
   Males have elongated, square-ish snouts while females have short and round snouts

3. What are the 3 main forms of self defense of this specimen?
   Drops tail, plays dead, offers tail in exchange for life

4. What type of habitat do larvae live in?
   Still water without fish

5. Salamanders aren’t vocal. What do they often use instead to find mates?
   Pheromones/anything about smell

6. Define ovoviviparous.
   Reproduction where the eggs are hatched inside the mother
1. Which of the following statements about the Bidder’s organ found in members of the family Bufonidae is correct?
   a. It is located behind the kidney
   b. It is only found in males
   c. It was discovered in the 17th century by Friedrich Bidder
   d. It has two distinct histological regions

2. What is the purpose of the “spade-like” feet present in members of the family Scaphiopodidae?
   a. They can be used to fend off attackers
   b. They help it paddle better when swimming
   c. They help it dig
   d. They help them hop faster

3. One could expect to find members of the family Bufonidae in all of the following continents except -
   a. Europe
   b. Africa
   c. Asia
   d. Australia

4. Which of the following is false about the family Ranidae?
   a. It contains both the largest and smallest species of frog in the world
   b. It has the widest distribution of any frog family
   c. Most members of the family have an ossified sternum and omosternum
   d. Some species belonging to this family are polyploid, while others are diploid

5. The range shown above belongs to what family of Anurans?
   a. Bufonidae
   b. Scaphiopodidae
   c. Hylidae
   d. Ranidae
   e. Microhylidae

6. Which of the following is not a characteristic of the family Microhylidae?
   a. Adults have 2-3 palatal folds
   b. Tadpoles have cornified denticles
   c. Diploid number is 22-28
   d. They range greatly in size from 10mm to 100mm
Station 10

Identify; both common name and genus name

A. Clemmys, spotted turtles
B. Chrysemys, painted turtles
C. Emydoidea, Blanding's turtle
D. Trachemys, sliders
E. Graptemys, map turtles
F. Terrapene, box turtles
G. Actinemys, western pond turtles
A. Nuchal
B. Vertebral
C. Costals
D. Marginals
E. Gular
F. Axillary
G. Inguinal
H. Humeral
I. Pectoral
J. Abdominal
K. Femoral
L. Anal
1. Identify the family, genus, and common name of the specimen to the left. *Viperidae, sistrurus, massasaugas and pigmy rattlesnakes.*

2. Describe the geographic range of the specimen. *Southeastern Canada, eastern and southeastern US, some isolated populations in northern and central Mexico.*

3. Describe the sound produced by the specimen’s rattle. *High pitched buzzing sound.*

4. Explain the difference between the specimen to the left and members of the genus *Crotalus.* *Sistrurus species have nine large head plates while Crotalus has lots of tiny scales on their head, their rattle sounds different than Crotalus (less like a rattle), they are smaller than Crotalus.*

5. Explain the etymology and origin of the specimen’s genus name. *Latinized version of Greek word for “tail rattler”*

6. Although they seem threatening, they are actually non-venomous. **T/F**
1. Name the family and common name of this specimen.
   Bufonidae - true toads
2. Which two continents have the least genera of this family?
   Antarctica and Australia
3. What body part does most of this family possess which allows males to produce eggs? Where is it located?
   Bidder’s Organ; anterior end of larval testes
4. Are most toads, terrestrial, aquatic, or arboreal?
   Terrestrial
5. What toxin is often located in the parotid glands? Can it be lethal?
   Bufotoxin; yes
6. What is the unken reflex?
   Defensive display which involves arching the back and showing brightly colored feet to remind predators of toxin
7. True or false: toads lack teeth
   True
1. Identify the class, order, suborder, family, genus, and common name of the specimen *Reptilia, Squamata, Serpentes or Ophidia, Typhlopidae, Ramphotyphlops, Brahminy blind snake*

2. Describe where the specimen lives *Ant and termite nests, under fallen leaves, in holes in logs*

3. Describe the diet of the specimen *Earthworms, larvae and eggs of ants and termites*

4. Describe the specimen’s range *Southern and Southeast Asia, Australia, the Americas, islands in the southern Pacific Ocean*

5. Give two nicknames for the specimen that aren’t on the national list *Long-tailed blind snakes, worm snakes, flowerpot snakes*

6. How did this specimen get spread worldwide? *Transported worldwide through the soil of potted plants*

7. Define parthenogenesis *a form of reproduction from an ovum that does not require fertilization*
Station 15

1. Identify the family of this specimen. (1 pt) Trionychidae
2. What is unique about this specimen's carapace? (be specific) (2 pts) They are called "softshell" because their carapaces lack horny scutes (scales).
3. Can this specimen breathe underwater? And if so, describe how. (2 pts) Yes, softshells are able to "breathe" underwater with rhythmic movements of their mouth cavity that contains numerous processes that are copiously supplied with blood, acting similarly as gill filaments in fish.
4. What feature allows this specimen to remain buried in the substrate for extended period of time and still breathe surface air? (2 pts) Their necks are disproportionately long in comparison to their body sizes, enabling them to breathe surface air while their bodies remain submerged in the substrate (mud or sand) a foot or more below the surface.
5. What anatomical feature does this specimen’s family name refer to? (2 pts) Their three-clawed feet.
6. What is the difference between the 2 suborders of turtles, Cryptodira and Pleurodira? (2 pts) Cryptodira differ from Pleurodira (side-neck turtles) in that they lower their necks and pull the heads straight back into the shells, instead of folding their necks sideways along the body under the shells' marginals.
7. Which suborder does this specimen belong to? (1 pt) Cryptodira.