

7. Which of the following salamander families is of the most basal or ancestral lineage?
- Hynobiidae
 - Proteidae
 - Amphiumidae
 - Sirenidae
8. How many times has internal fertilization evolved in salamanders?
- never
 - once
 - twice
 - three times
9. Which salamander family lays eggs in gelatinous sacs in long strings?
- Plethodontidae
 - Amphiumidae
 - Salamandridae
 - Cryptobranchidae
10. Which salamander family does the genus *Aneides* belong to?
- Sirenidae
 - Dicamptodontidae
 - Plethodontidae
 - Salamandridae
11. Which of the following salamander genera is not known to contain cave-adapted species?
- Eurycea*
 - Proteus*
 - Gyrinophilus*
 - Dicamptodon*
12. Which of the following salamander species lacks lungs?
- Ambystoma jeffersonianum*
 - Plethodon cinereus*
 - Notophthalmus viridescens*
 - Siren intermedia*
13. Which of the following is not a possible sexual characteristic of breeding male salamanders?
- mental gland
 - enlarged cloacal gland
 - parotoid gland
 - enlarged premaxillary teeth
14. Aquatic salamanders generally capture prey through:
- suction feeding
 - filter feeding using baleen to strain the water
 - seizing it with the jaws
 - projecting the tongue out of the mouth

15. Where are the eggs of *Plethodon cinereus* found?
- in streams under rocks
 - in stream banks
 - in moss
 - under leaves, rocks, or logs
16. In which of the following salamander species do the females guard the eggs?
- Ambystoma maculatum*
 - Ambystoma opacum*
 - Desmognathus fuscus*
 - Notophthalmus viridescens*
17. Which of the following is true of triploid hybrids of *Ambystoma jeffersonianum* and *A. laterale*?
- triploids exist as sexual parasites of the diploid parents
 - triploids can only be maintained when both of the parent species are present
 - triploid males usually outnumber male and female diploids
 - males cannot discriminate the odor of triploid from diploid females
18. List all the salamander families found in Connecticut.
19. Where would you look to find eggs of *Eurycea bislineata*?
20. Which Caudata families have experienced the evolution of cave-adapted species?
21. In which of these families do most species lay eggs in ponds?
- Rhyacotritonidae
 - Plethodontidae
 - Amphiumidae
 - Ambystomatidae
22. Which family has newts?
23. Name ten Plethodontidae genera
24. What are the three most primitive Caudata families? What is their common characteristic?
25. What is one character that would identify the sex of a salamandrid?
26. What is the typical lifestyle of caecilians? Name two morphological characters in caecilians that are adaptations for their lifestyle.
27. Name three places with no salamanders.

28. What is the key characteristic that separated the Cryptobranchoidea from the Salamandroidea?
29. Name all the North American salamander families.
30. Name all the European salamander families (including those that appear elsewhere).
31. Which salamander families have giants?
32. How can you tell if an aquatic salamander is a male?
33. How can you tell if a Plethodontid is male?
34. What is the key character that will distinguish Salamandridae from Ambystomatidae?
35. Which caudate is the earliest breeder in Connecticut?
36. Which Connecticut salamander breeds the latest?
34. Which North American families have external fertilization?
35. What single character is sufficient to separate ambystomatids and plethodontids?
36. How can you tell sirenids and amphiumids apart?
37. What characters present in salamander adults are considered to be larval characters?
38. Which of the following characters would you use to separate *Salamandra salamandra* from *Ambystoma*: color, costal grooves, nasolabial grooves, number of toes, tooth patterns, gills, or presence of lungs?
39. Which families of salamanders are found only in North America?
40. Which family of salamanders reaches North Africa?

41. Hynobiid salamanders are found only in what continent?
42. Which families have adults that always have external gills?
43. What families have species that reproduce terrestrially?
44. What two external characters are most reliable in distinguishing *Plethodon cinereus* from *Desmognathus fuscus*?
45. What family of salamanders is widespread in northern hemisphere?
46. What family of salamanders is found throughout North America?
47. What families of salamanders is found exclusively in North American Pacific Northwest?
48. What families of salamanders have disjunct distribution across the world?
49. How can you distinguish males from females in the following species?
Notophthalmus viridescens
Ambystoma maculatum
Plethodon glutinosus
Eurycea bislineata
50. You should be familiar with names of important genera that are mentioned in lecture or in readings, even if you are not expected to identify them on sight. To what family does each of the following genera belong?
Andrias
Batrachoseps
Pseudobranchius
Pseudotriton
Taricha
Triturus
Ensatina
Aneides