**Advanced Evolution Test**

Worleybiologyecology.weebly.com (Go to the Evolution section)

A Key for the sample questions on this sheet can be found on the website

\*Chapters 15-17, focus on scientists and vocabulary (especially those assigned, check lists on website).

\*Darwin documentary questions (Key Posted on website)

\*Do nows (listed on website)

\*Evolution Power Point notes (On website)

\*Chapter 15 questions 1-10

\*Natural Selection moth gizmo

\*Worksheet with examples of types of evolution (Key on website)

\*Evolution Reading packet with accompanying answers (Key on website)

**Some scientists and terms to focus on (non-inclusive list)**

1. Charles Darwin
2. Alfred Russell Wallace
3. Jean Baptiste-Lamarck
4. Hutton & Lyell
5. Mendel
6. Watson & Crick
7. T.H. Huxley
8. Julian Huxley
9. Thomas Malthus
10. Convergent Evolution
11. Divergent Evolution
12. Parallel Evolution
13. Punctuated Equilibrium
14. Adaptive Radiation
15. Sexual Selection
16. Sexual Dimorphism
17. Selection Pressure
18. Natural Selection
19. Fitness
20. Common Descent
21. Descent with modification
22. Artificial selection or selective breeding
23. Microevolution
24. Macroevolution
25. Natural Variation
26. Differential Survival
27. Competition for Resources
28. Galapagos Islands
29. Speciation
30. Homologous structures
31. Embryology
32. Comparative Anatomy
33. Biogeography
34. Archaeopteryx
35. Missing Link
36. Living Fossil
37. Use and Disuse
38. Inheritance of Acquired Traits
39. Radiometric Dating

**Some Sample questions (These are samples, they don’t include everything)**

1. Both insects and bats have developed wings, but they are not closely related. This is most likely an example of

a. co-evolution

b. convergent evolution

c. microevolution

d. genetic drift

2. Which best describes Lamarck’s older (& incorrect theory of evolution)?

a. Organisms change in their lifetime based on which organs they use or do

not use. They can then pass on these changes to their offspring.

b. Organisms change through natural selection as populations over long

periods of time.

c. Organisms experience many random genetic mutations, and this is the cause of evolution.

d. Organisms *always* change as a result of direct competition with another species.

Choose the best term for the following examples.

a. Convergent Evolution b. Coevolution c. Parallel Evolution

3. A parasite and a host evolve together because they have a close ecological relationship. This is called an evolutionary arms race. Example: antibiotic resistant pathogens.

4. Two related species live on different continents, but still look similar because they adapted in similar ways to similar environments. Example: Jaguars and leopards.

5. Two UNRELATED species look similar because they evolved in similar ways to similar environments. Example: sharks and dolphins.

6. Which of the following is the first piece of evidence that lead scientists to believe that organisms changed over time?

a. molecular clocks

b. stratigraphy

c. fossil record

d. embryology

7. Which scientist proposed the incorrect theory use & disuse to explain how organisms changed over time? (Giraffes stretching their necks over their lifetime to reach leaves and passing this trait on to offspring)?

a. Mendel

b. Darwin

c. Linnaeus

d. Lamarck

**8. Genetic Isolation**

**9. Artificial Selection**

**10. Selection Pressure**

**11. Gene Pool**

**12. Natural Selection**

**13. Convergent evolution**

**14. Parallel Evolution**

**15. Coevolution**

**A. When two groups of organisms differentiate enough that they can no longer interbreed**

**B. All of a population’s or species’ genes**

**C. An environmental factor which causes a certain trait to become more or less common**

**D. A mechanism for change in populations (driven by the environment and differential survival)**

**E. Breeding organisms with specific traits in order to produce offspring with desirable traits**

A. Occurs when *unrelated* species occupy similar environments in different parts of the world, and evolve in a similar way.

B. When two related populations are physically separated but occupy similar niches, so evolve in a similar way.

C. When two species have a very

close ecological relationship and

evolve together. EX: flowering

plants and pollinators

16. Which scientist proposed the correct theory of how evolution takes place?

a. Mendel

b. Darwin

c. Linnaeus

d. Lamarck

17. Which scientist performed the fundamental genetic research necessary to understand evolution?

a. Mendel

b. Darwin

c. Linnaeus

d. Lamarck

18. In Artificial selection, what “chooses” the traits?

a. proteins

b. meiosis

c. humans

d. nature or the environment

19. In natural selection, what “chooses” the traits?

a. proteins c. humans

b. meiosis d. nature or the environment

20. Darwin was the naturalist aboard the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which sailed to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ islands.

a. H.M.S Beagle; Galapagos b. H.M.S. Naturae; Galapagos

c. H.M.S Beagle; Cayman

d. H.M.S. Naturae; Cayman

21. If beetles have less to eat during a few months and their average size as a population changes during one generation, is this evolution?

a. yes b. no

22. Which of the following is not a method to use for dating objects?

a. stratigraphy

b. use and disuse

c. molecular clocks

d. carbon dating

23. In the peppered moth activity, which moth phenotype was the most fit (survived and reproduced more) when the leaves were light?

a. light moths b. dark moths

24. What adaptation allowed one peppered moth to be better suited to the environment than the other?

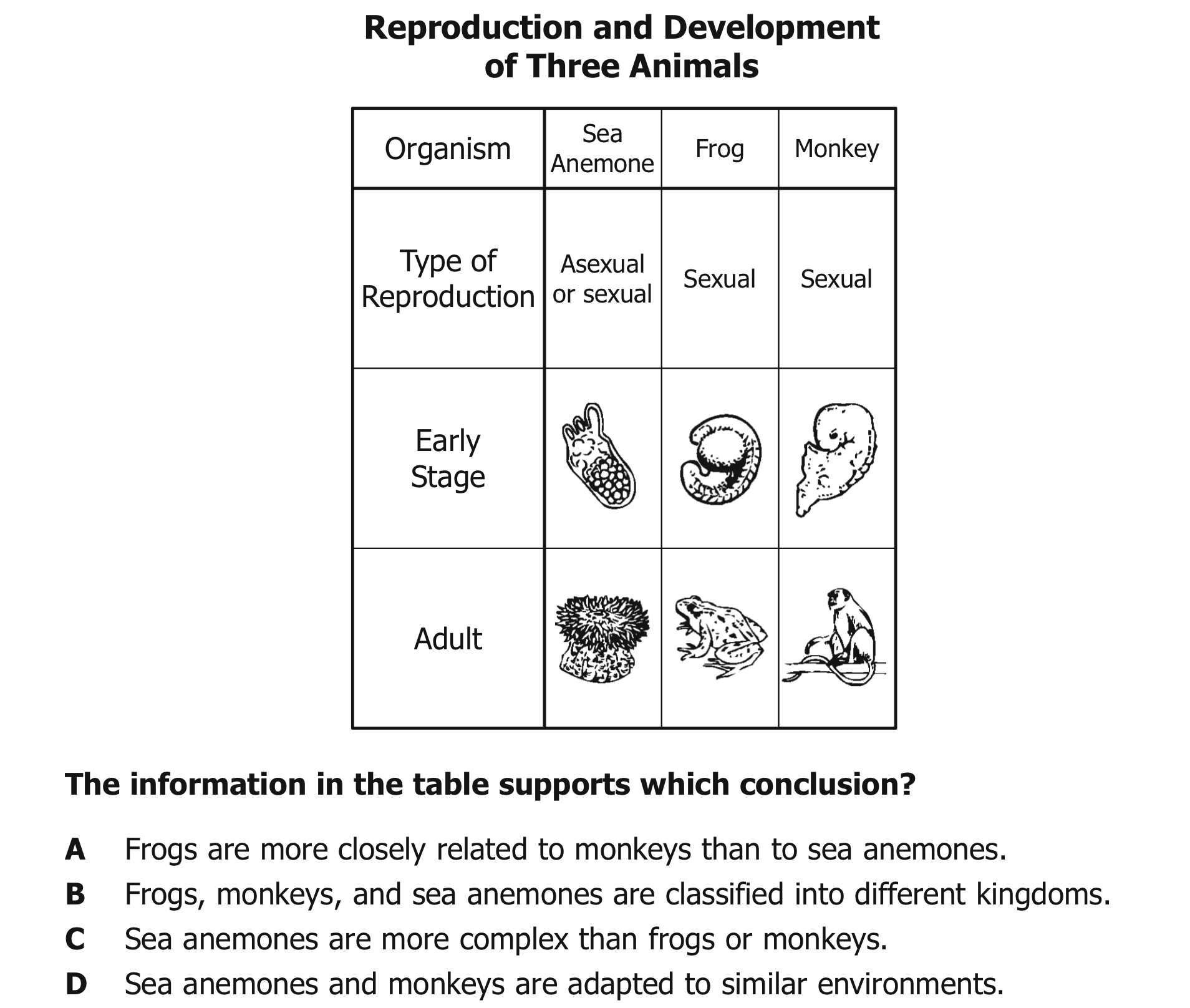
a. mimicry

b. mutation

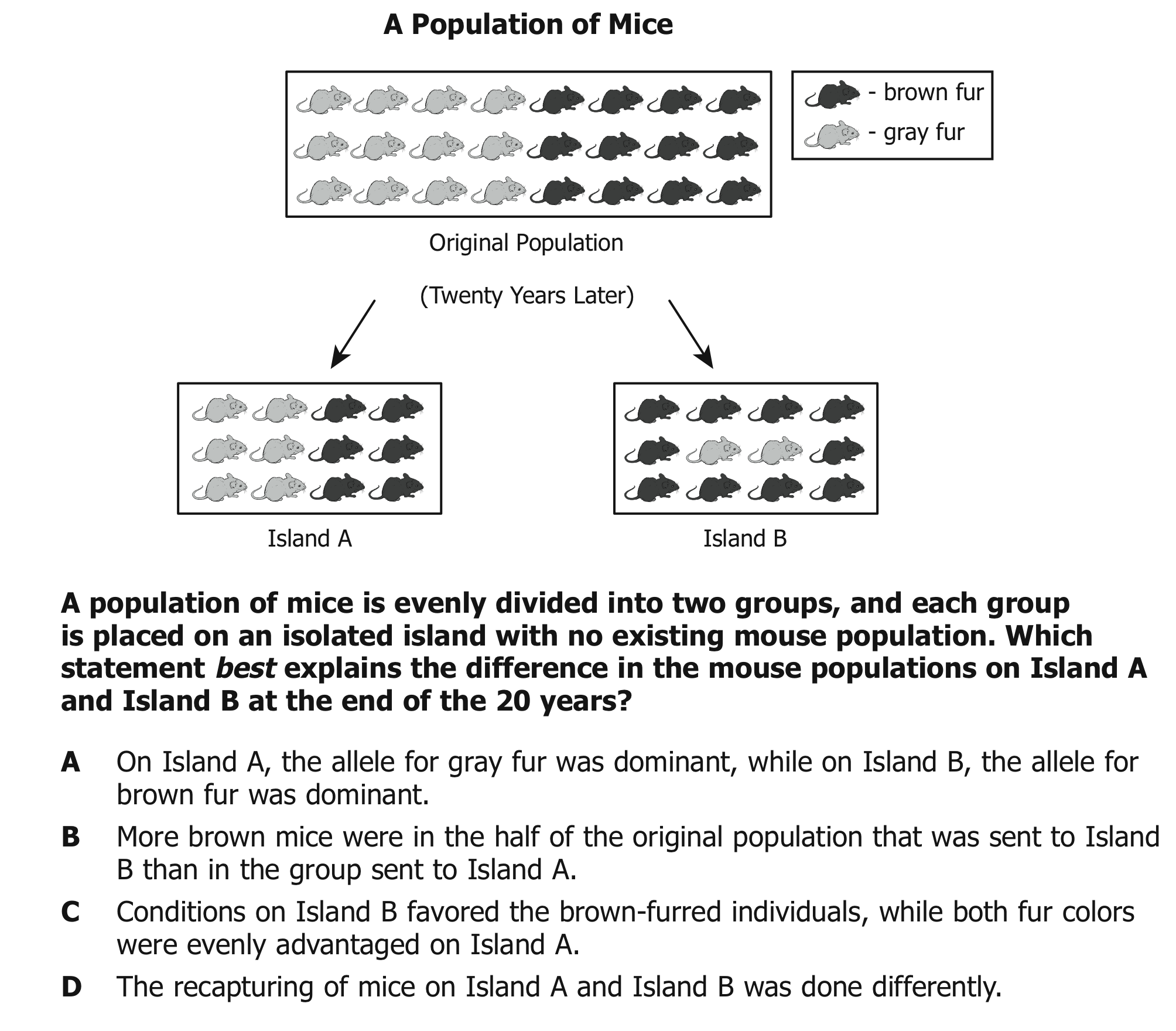
c. predation

d. camouflage

e. symbiosis

25. 

-- The above method of determining the evolutionary relationship of organisms based on their early stages of development is called embryology

26. 

**Sample Short answer questions. Write your answers below.**

27-30. Explain what is meant by survival of the fittest and how it relates to

natural selection. Give a specific example about how it works. List at least two conditions necessary for natural selection to occur.