Name: Key Date: _____ Period: _____

Are you ready for the Evolution Test?

Mechanisms of Evolution – what do you know?

1. Define natural selection in your own words: Those organisms the most adapted to the environment will survive and reproduce.
2. What is meant by the **frequency of alleles**? the percent of the population that has that allele.
3. What must be present in a population of one species for natural selection to occur and result in a new species (think about what natural selection acts on)? Variation
4. What increases in gene flow but decreases in genetic drift (other than population sizes)? Genetic Variation
5. Organisms are classified together (monotremes, marsupials, cartilage skeletons, vertebrates) because they share a common ancestor
6. Organisms adapt and evolve to reduce (circle **one**) population size/competition/allele frequency/genetic variation.
7. How does biogeography lead to speciation? Separates one species in two different environments and they evolve to survive.
8. Geographic isolation, behavioral isolation and reproductive isolation all lead to speciation. What do they all have in common? Isolation
9. Animals reduce competition by relocating, giving birth at different times or evolving to feed on a different resource. What are some ways plants can reduce competition? Seeds that disperse, growing taller, broad leaves, tap roots
10. What type of selection occurs when one extreme is favored? Directional When both extremes are favored? Disruptive
11. Give two examples of adaptations used to hide from predators. Camouflage, mimicry
12. Compare and contrast Genetic Drift and Gene Flow:

Genetic Drift	Gene Flow
one population	two populations
Gen. Variation ↓	Genetic Variation ↑
Population ↓	Population ↑
Random	Random

Evidences of Evolution – what do you know?

Matching *On the line provided, write the letter of the definition that best matches each term on the left.*

A	1. evolution	a. change over time
C	2. fossil	b. differences among individuals within a species
B	3. natural variation	c. the preserved remains of an ancient organism
I	4. struggle for existence	d. survival of the fittest
G	5. fitness	e. all species are derived from common ancestors
J	6. adaptation	f. structures that develop from the same embryonic tissues, but have different mature forms
D	7. natural selection	g. the ability of an individual to survive and reproduce in a specific environment
E	8. common descent	h. organs with little or no function
F	9. homologous structure	i. competition for food, space, and other resources among members of a species
H	10. vestigial organ	j. inherited characteristic that increases an organism's chance of survival

Match the type of evidence to its description.

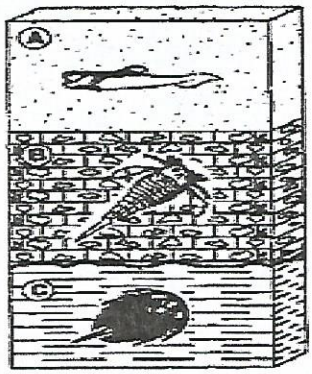
WORD BANK: ***Biogeography, Embryology, Anatomy, DNA Comparison***

11. Anatomy Different organisms share **similar structures** that have very different functions, or have remnants of structures/organs that had a function in the past.

12. DNA Comparison In DNA sequencing, the more closely related two organisms are, the more similar their DNA.

13. Embryology During the early stages of life, **embryos** of very different organisms appear to be very similar. As they continue to develop, they become increasingly different.

14. Biogeography Different habitats favor different traits and can establish separate populations that have a common ancestor.



15. Using the diagram pictured, which of the fossils layers is the oldest? C

How do you know? At the bottom/1st to form

16. How do analogous and homologous structures compare?

Analogous - Different Structure, Same Function

Homologous - Same Structure, Different Function

Describe how evidence from the following fields of research support the theory of evolution:

17. Fossil record Trace/track changes and evolutionary links.

18. Comparative embryology Shows Common Ancestor

19. Comparative biochemistry (DNA) Shows Relationship

20. Comparative anatomy Shows common ancestor (except Analogous)