Organic Evolution Study Questions
Dr. J. Lim

1. Biological evolution is the cumulative changes that occur in a 
   ______________________ over time.
2. An educated guess or conclusion based on evidence is a(n) ____________________.
3. The principle source of change (genetic variation) is due to this type of 
   _______________________________ event.
4. Charles Darwin published his landmark book entitled 
   ____________________________ in 1859.
5. In his book, Darwin states that the origin of all life forms is due to random 
   ____________________________.
6. Darwin premise that all humans, animals, and bacteria share a common distant 
   ancestor is explained with the concept of _________________ with 
   ____________________________.
7. Similarities of the structures of between dissimilar species (ex: arm bones) are 
   called _________________ structures.
8. Darwinian Theory tells us that 
   ___________________ + ___________________ $\Rightarrow$ new species
9. Neo-Darwinian Theory tells us that beneficial genetic mutations concentrated in a 
   population over time can result in the formation of new _________________.
10. List three characteristics that always 
    provide a selective advantage.

11. The deciphering of _______ structure in 1953 provided the molecular basis for 
    inheritance.

_circle one of the two choices in the following._
12. Micro/Macroevolution is an explanation for the emergence of new species.
13. In 1953, Miller and Urey demonstrated that the building blocks of life could form 
    from the non-living environment of early earth. True/False
14. The vast majority of mutations are helpful/harmful.
15. Variations in finch beaks and moth color are examples of micro/macroevolution 
    in action.
16. The viability (survivability) of “imperfect incipient stages (transitional forms) of 
    useful structures” (Gould) has been scientifically demonstrated. True/False
17. The geological record provides evidence for descent with modification. 
    True/False
Organic Evolution Study Questions KEY
Dr. J. Lim

1. Biological evolution is the cumulative changes that occur in a **population** over time.
2. An educated guess or conclusion based on evidence is a(n) **inference**.
3. The principle source of change (genetic variation) is due to this type of chromosomal event. **mutation**
5. In his book, Darwin states that the origin of all life forms is due to random **chance**.
6. Darwin’s premise that all humans, animals, and bacteria share a common distant ancestor is explained within the concept of **descent with modification**.
7. Similarities of the structures of between dissimilar species (ex: arm bones) are called **homologous** structures.
8. Darwinian Theory tells us that 
   **mutability** + **natural selection** → new species
9. Neo-Darwinian Theory tells us that beneficial genetic mutations concentrated in a population over time can result in the formation of new **species**.
10. List three characteristics that **always** provide a selective advantage.
    1. self defense
    2. reproductive success
    3. food gathering ability
11. The deciphering of **DNA** structure in 1953 provided the molecular basis for inheritance.

**Circle one of the two choices in the following.**
12. **Macro**evolution is an explanation for the emergence of new species.
13. In 1953, Miller and Urey demonstrated that the building blocks of life could form from the non-living environment of early earth. **False, Historical interest only**
14. The vast majority of mutations are **harmful**. (and so are selected out of gene **pool**)
15. Variations in finch beaks and moth color are examples of **micro**evolution in action.
16. The viability of “imperfect incipient stages (transitional forms) of useful structures” (Gould) has been scientifically demonstrated. **False** (Gould and **punctuated equilibrium**)
17. The geological record provides evidence for descent with modification. **True**