**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



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**Block: \_\_\_\_\_\_\_**

**Evolution Practice Test**

(May 6, 2014)

**Part I. Match these evolution terms to their definitions (15 pts)**

**Word Bank**

**Artificial selection;** **Bell curve; Bottleneck**; **Descent with modification; Evolution; Founder effect; Gene flow; Genetic drift; Macroevolution; Microevolution; Mutation; Natural selection;** **Speciation; Species; Uniformatarianism.**

**1**. Random, accidental change to DNA: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **2**. The natural forces and processes that shape the earth now are the

same forces that shaped the earth millions of years ago:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3**. Change in allele frequency over time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4**. Organisms with traits that are well-suited to their environment survive and reproduce at a greater rate:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **5**. Graph of normal distribution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **6**. The formation of new species: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **7**. AKA Selective breeding. Man intentionally breeding certain desirable traits:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **8**. A large population is dramatically reduced to a few individuals (e.g. disasters,

hunting):

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **9**. All life on earth descended from a common ancestor over millions of years:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **10**. A small group branches off and colonizes a new area:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **11**. Change in the gene pool that takes place as a result of chance (not natural

selection):

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **12**. Organisms that can interbreed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **13**. Evolution over shorter periods of time. Changes are adaptations

 **within** a species:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **14**. Evolution on a grand scale. Microevolution over millions of years. Speciation

occurs:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **15**. Change in allele frequency due to migration (“restocking”) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part II: Fill-in short answer.**

 **16**. List Darwin’s 5 principles of evolution. (**5 pts)**

 **1**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **2**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **3**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **4**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **5**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **17.** Does natural selection act on the phenotype or the genotype? **Explain**.

 **a**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(1 pt)**

 **b**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 **18**. Which kind of natural selection does this graph show?



 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(1 pt)**

 **19**. Which kind of natural selection does this graph show?



 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(1 pt)**

 **20**. Which kind of natural selection does this graph show?



 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(1 pt)**

 **21.** What are 4 examples of “prezygotic” (premating) mechanisms that exist in

nature that create genetic isolation (thus speciation)? (eg. Brown bear won’t mate with black bear) **(4 pts)**

 **1**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **2**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **4**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **22.** What are 4 examples of “postzygotic” (post-mating) mechanisms that exist in

nature that create genetic isolation (thus speciation)? (eg. Brown bear won’t mate with black bear) **(4 pts)**

 **1**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **2**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **4**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **23.** What do the following prefixes mean? **(12 pts)**

 **a**. Micro: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **b**. Macro: \_\_\_\_\_\_\_\_\_\_\_\_ **c**. Hyper: \_\_\_\_\_\_\_\_\_\_\_\_\_

 **d**. Hetero: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **e**. Homo: \_\_\_\_\_\_\_\_\_\_\_\_\_ **f**. Bio: \_\_\_\_\_\_\_\_\_\_\_\_\_

 **g**. Poly: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **h**. Anti: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ **i**. Hypo: \_\_\_\_\_\_\_\_\_\_\_\_\_

 **j**. Cyto: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **k**. Semi: \_\_\_\_\_\_\_\_\_\_\_\_\_ **l.** Bi: \_\_\_\_\_\_\_\_\_\_\_\_\_

 **24.** What is the difference between artificial selection and natural selection? **(2 pts)**

 **25.** What does this diagram represent? **(2 pts)**



 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **26**. Based on these amino acid sequences, write down the number of differences

for each comparison. **(2 pts)**

 **Humans – LEU GLU VAL CYS VAL HIS GLU HIS**

 **Turkeys – LEU VAL VAL CYS ALA HIS GLU HIS**

 **Chimps – LEU GLU VAL CYS VAL HIS GLU PRO**

 **Species Comparisons Number of Differences**

1. Human and Turkeys \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . **(1 pt)**
2. Human and Chimps \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . **(1 pt)**
3. Turkeys and Chimps \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(1 pt)**

 **27.** Which pair of organisms in question **26** have the closest evolutionary

 relationship? **(1 pt)**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **28.** Write out an example (a scenario) of natural selection occurring? **(2 pts)**