**Evolution Test**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| K/U |  /15 | C |  /3 | A |  /6 | T/I |  /8 |



Knowledge & Understanding /15

**Fill in the Scientist**
Fill in the blank with the name of the scientist who best fits each statement.  You may not use a scientist’s name more than once. (5 marks)

1. Through natural selection, the theory of evolution was created by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, a geologist, found through fossil evidence and geological records that the earth is very old and has changed over time.

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ published his own ideas surrounding evolution/natural selection in a book called “The Origin of Species”.

4. The system of binomial nomenclature was created by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ created the theory of Inheritance of Acquired Traits.

**Multiple Choice**

Identify the choice that best completes the statement or answers the question. (5 marks)

\_\_\_\_\_\_ 1. Which of the following helps a prey species avoid being detected by a predator?
 A) Mullerian Mimicry
 B) Aposematic Colouration
 C) Cryptic Colouration
 D) Batesian Mimicry

\_\_\_\_\_\_ 2) The unit upon which evolution acts most directly is on a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_.
 A) Individual
 B) Population
 C) Cell
 D) Species
 E) Race

\_\_\_\_\_\_ 3) The wing of the bat and a human’s arm are very different in appearance and
 function. Yet, the underlying anatomy is basically the same. The similarity of
 these forelimb structures is evidence that both humans and bat \_\_\_\_\_\_\_\_\_\_\_\_.
 A) Share a common ancestor
 B) Are members of the same genus
 C) Once used their forelimbs in similar ways
 D) Evolved from each other
 E) Are genetically very similar

\_\_\_\_\_\_ 4) After many generations, an insect species evolved resistance to a particular pesticide. This occurred because spraying pesticides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
 A) Killed most of the insects in the population
 B) Caused mutations in the insect species’ gene pool
 C) Caused another inspect species to go extinct
 D) Selected for insects that were able to survive and reproduce
 E) Allowed another species to take over its niche

\_\_\_\_\_\_ 5) An herbicide killed 99% of a weed population. Which of the following is the best biological explanation for why some weeds were able to survive?
 A) Some individuals were able to evolve before the spraying
 B) Genetic variation in the population allowed some weeds to survive
 C) The spray caused some individuals to mutate, and they were able to

survive and reproduce

D) Each individual occupied a different ecological niche and so some were unaffected

E) A new weed came into the area

**Matching Isolation Types**

Below the “Types of Isolation” is a list of examples.  For each example, determine which type of isolation is being referred to.  Beside each example, write the letter A, B, C,D, or E indicating the type of isolation. (5 Marks)

|  |  |  |
| --- | --- | --- |
| **Types of Isolation**A) Behavioural IsolationB) Gametic IsolationC) Mechanical IsolationD) Ecological IsolationE) Temporal Isolation | **Examples**1) The way a bird or a frog might sing or dance to attract mates.      2) Some flowers have different mating seasons and times.                                            3) Some snakes like being in water while some don’t. 4) Damselflies male genitals aren’t compatible. 5) The chromosomes of a female deer didn’t survive and died off before fertilization began. | \_\_\_\_\_\_­\_\_\_\_\_\_­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Thinking & Inquiry /8

**Short Answer**

What are compound chromosomes, and how do they affect fertility? Why are they uniquely suited for studies of underdominance? (3 marks)

**True/False**

Read each statement below **carefully**. Place a **T** on the line if you think a statement is TRUE. Place an **F** on the line if you think the statement is FALSE. If the statement is false, rewrite the bolded term to make it true. (5 marks)

|  |  |
| --- | --- |
| \_\_\_\_\_\_  | 1. Huntington’s disease is an example of a gene **mutation**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_ | 2. Gene flow is the transfer of alleles or genes from one **individual** to another.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_ | 3. When there are few copies of an allele, the effect of genetic drift is **smaller**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_ | 4. Natural selection is the **gradual**, non-random process by which biological traits become either more or less common in a population as a function of differential reproduction of their bearers. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_ | 5. When animals make themselves more attractive, this is an example of **natural selection.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Application /6

Create an environment in which natural selection has taken place. Describe the environment. List five phenotypes that were selected **for** by the environment and include a brief explanation of why these were selected for. (6 marks)

Communication /3

Draw a creature from your environment showing at least three of these phenotypes. (Get creative! ☺) (3 marks)