**HUMAN SCATTER GRAPH QUESTIONS AND ANSWERS**

**1. How does selection pressure differ in artificial selection compared to natural selection?**

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| A. In artificial selection mutations don’t happen randomly. | Mutations are still random and rare occurrences during artificial selection. |
| B. Selection pressure is controlled by the breeder in artificial selection. | Correct |
| C. In artificial selection fitness is not important. | Fitness is incredibly important during artificial selection. Increasing fitness will result in more of the desired population appearing. |

**2. A trait becomes common in a population because:**

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| A. This trait helps an individual live longer and successfully reproduce. | Correct. |
| B. This trait is always beneficial and leads to increased fitness. | Environmental changes can turn a beneficial trait neutral or even harmful. |
| C. This trait always develops in response to environmental changes. | Individuals don’t develop traits in response to their environment. Natural selection will result in individuals that already have those traits reproducing more successfully and becoming more common. |

**3. What is a mutation?**

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| A. An individual becoming a more advanced form during its life. | Mutations are any change that makes an individual different from its parent, they only occur during reproduction. |
| B. The development of a new species. | A mutation doesn’t create a new species, just an individual different from its parent. |
| C. Any change in an individual that makes it different from its parent. | Correct. |

**4. What are the results of selection pressure?**

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| A. A population with a different proportion of traits. | Correct. |
| B. A stronger population. | Population “strength” is a meaningless measure. Selection pressure will cause a shift in the proportion of traits in the population. |
| C. A population with low fitness. | Selection pressure usually selects for traits that lead to individuals with increased fitness. |

**5. How do populations change over time?**

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| A. Their fitness will drop. | Over time a population will become adapted to its environment, raising its fitness. |
| B. The proportion of traits that lead to survival and reproduction will increase in a population. | Correct. |
| C. All individuals will become identical. | Due to genetic variation individuals with a variety of traits will always be present. |

**6. How do individuals in a population compare with one another?**

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| A. They are essentially the same. | Individuals differ on a genetic level from one another and hold different traits. |
| B. They always have the same fitness. | Due to genetic variation individuals can have different fitness due to holding different traits. |
| C. They are different from one another. | Correct. |

**7. What does a species represent?**

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| A. A group of related but distinct individuals. | Correct. |
| B. A single unchanging type. | Populations and individuals within a species vary from one another |
| C. A similar group with rare variations. | Variation within a species is the norm and is not rare. |

**8. How do individuals respond to changes in their environment?**

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| A. The entire species will change. | A species doesn’t change all at once in response to environmental changes, only small populations within the whole. |
| B. They will develop new traits to adapt to the changes. | Individuals cannot develop new traits during their life time, and cannot develop new traits in response to their environment. |
| C. Individuals that hold beneficial traits in this environment will have higher fitness. | Correct. |