

Biology EOC Review 7

Genetics

Multiple Choice

Write the letter that best answers the question or completes the statement.

- Mendel obtained his P generation by allowing the plants to
 - self-pollinate.
 - cross-pollinate.
 - assort independently.
 - segregate.
- Step 1 of Mendel's garden pea experiment, allowing each variety of garden pea to self-pollinate for several generations, produced the
 - F₁ generation
 - F₂ generation
 - P generation.
 - P₁ generation.
- Mendel's Law of Segregation states that
 - pairs of alleles are dependent on one another when separation occurs during gamete formation.
 - pairs of alleles separate independently of one another after gamete formation.
 - each pair of alleles remains together when gametes are formed.
 - the two alleles for a trait separate when gametes are formed.
- Mendel began his experiments with purebred pea plants. This approach enabled him to determine that variations among offspring were the result of
 - random mutations.
 - self-pollination.
 - genetic uniformity.
 - his crossings.
- When Mendel crossed plants that were purebred purple-flowered with plants that were purebred white-flowered, the resulting offspring all had purple flowers. When allowed to self-pollinate, this F₁ generation gave rise to white-flowered plants as well as purple. As a result, Mendel determined that individual traits are
 - inherited as discrete units.
 - diluted in offspring.
 - merged with successive generations.
 - lost in the pollination process.
- The phenotype of an organism
 - represents its genetic composition.
 - occurs only in dominant pure organisms.
 - is the physical appearance of a trait.
 - cannot be seen.
- If an individual possesses two recessive alleles for the same trait, the individual is said to be
 - homozygous for the trait.
 - haploid for the trait.
 - heterozygous for the trait.
 - mutated.
- Mendel was able to identify predictable patterns of heredity. He succeeded mainly because he chose to study traits that
 - were always dominant.
 - tended to be recessive.
 - could be diluted.
 - had only two forms.
- Which of the following conclusions was a result of Mendel's observations?
 - Organisms that give rise to purebreds are genetically superior.
 - Organisms that have intermediate features are self-pollinating.
 - Organisms inherit two copies of each gene, one from each parent.
 - Organisms that self-pollinate do not have "either-or" features.
- If a pea plant were homozygous recessive for height, how would its alleles be represented?
 - Tt*
 - TT*
 - tt*
 - tT*

