

Chapter – 4 | Principles of Inheritance and Variation

QUIZ
PART-01

1. The branch of biology that studies inheritance and variation is called:

- A. Ecology B. Genetics
C. Taxonomy D. Evolution (B)

Explanation: Genetics is the branch of biology that deals with inheritance and variation of traits.

2. Who is known as the Father of Genetics?

- A. Charles Darwin
B. Watson
C. Gregor John Mendel
D. Lamarck (C)

Explanation: Gregor John Mendel is known as the Father of Genetics due to his experiments on pea plants.

3. Mendel performed his experiments on which plant?

- A. Wheat
B. Pea plant (Pisum sativum)
C. Maize
D. Rose (B)

Explanation: Mendel used garden pea (Pisum sativum) for studying inheritance patterns.

4. How many pairs of contrasting traits were studied by Mendel in pea plants?

- A. 5 B. 6
C. 7 D. 8 (C)

Explanation: Mendel studied seven pairs of contrasting characters in pea plants.

5. A line that shows stable traits after self-pollination for several generations is called:

- A. Hybrid line
B. Mutant line
C. True breeding line
D. Recombinant line (C)

Explanation: True breeding lines maintain stable characteristics through repeated self-pollination.

6. The unit of heredity is:

- A. Chromosome
B. Gene
C. DNA
D. Nucleus (B)

Explanation: Gene is considered the basic unit of heredity because it carries information for traits.

7. Different forms of the same gene are called:

- A. Chromosomes
B. Alleles
C. Factors
D. Genotypes (B)

Explanation: Alleles are alternative forms of the same gene that control contrasting traits.

8. An organism having two identical alleles is known as:

- A. Heterozygous
B. Homozygous
C. Hybrid
D. Dominant (B)

Explanation: Homozygous organisms contain identical alleles, such as TT or tt.

9. The genetic composition of an organism is called:

- A. Phenotype
B. Character
C. Genotype
D. Variation (C)

Explanation: Genotype represents the genetic makeup of an organism, such as TT, Tt, or tt.

10. A cross involving one pair of contrasting traits is called:

- A. Dihybrid cross B. Monohybrid cross
C. Test cross D. Back cross (B)

Explanation: A monohybrid cross involves the study of inheritance of a single pair of contrasting traits.