

## Chapter – 6 | Evolution

QUIZ  
PART-05

1. Hardy-Weinberg theory explains:

- A. Origin of life
- B. Genetic equilibrium in a population
- C. Protein synthesis
- D. Mutation formation (B)

**Explanation :** Hardy-Weinberg theory explains that allele frequencies remain constant in a population under genetic equilibrium.

2. The gene pool of a population includes:

- A. Only dominant genes
- B. Only recessive genes
- C. All genes and alleles present in the population
- D. Only mutated genes (C)

**Explanation :** Gene pool represents the total collection of genes and alleles present in a population.

3. According to Hardy-Weinberg principle, the frequency of allele A is represented by:

- A. q
- B. p
- C.  $2pq$
- D.  $p^2$  (B)

**Explanation :** In Hardy-Weinberg equation, p represents the frequency of allele A and q represents allele a.

4. The Hardy-Weinberg equation is:

- A.  $p + q = 2$
- B.  $p^2 + q^2 = 1$
- C.  $p^2 + q^2 + 2pq = 1$
- D.  $p^2 + 2q = 1$  (C)

**Explanation :** The equation represents frequencies of AA, Aa and aa genotypes in a population.

5. Which of the following does NOT affect Hardy-Weinberg equilibrium?

- A. Mutation
- B. Gene flow
- C. Genetic drift
- D. Stable allele frequency (D)

**Explanation :** Stable allele frequency maintains genetic equilibrium, while mutation, gene flow and drift disturb it.

6. Change in allele frequency due to chance events is called:

- A. Natural selection
- B. Genetic drift
- C. Gene flow
- D. Mutation (B)

**Explanation :** Genetic drift occurs due to random changes in allele frequency in a population.

7. The founder effect is associated with:

- A. Natural selection
- B. Genetic drift
- C. Mutation theory
- D. Adaptive radiation (B)

**Explanation :** Founder effect occurs when a small group forms a new population with different allele frequencies.

8. Migration of individuals between populations results in:

- A. Genetic flow
- B. Gene flow
- C. Mutation
- D. Genetic equilibrium (B)

**Explanation :** Repeated migration of genes between populations causes gene flow and changes allele frequencies.

9. Natural selection favours individuals having:

- A. Less genetic variation
- B. Greater genetic diversity and better adaptation
- C. No mutations
- D. Identical genes (B)

**Explanation :** Individuals with beneficial variations have greater chances of survival and reproduction.

10. Natural selection in which medium-sized individuals are preferred is called:

- A. Directional selection
- B. Disruptive selection
- C. Stabilising selection
- D. Artificial selection (C)

**Explanation :** Stabilising selection favours average phenotypes and maintains the existing population characteristics.