

HereditY - Class X - Paper Set No. 2

1. What is the process called when traits are passed from parents to offspring?
 - (a) Evolution
 - (b) Inheritance
 - (c) Mutation
 - (d) Selection
2. What did Mendel use to study inheritance patterns?
 - (a) Fruit flies
 - (b) Corn plants
 - (c) Pea plants
 - (d) Mice
3. Which trait in humans is controlled by a single gene?
 - (a) Skin color
 - (b) Blood type
 - (c) Intelligence
 - (d) Body height
4. What are chromosomes made up of?
 - (a) Carbohydrates
 - (b) Proteins and lipids
 - (c) DNA and proteins
 - (d) Amino acids
5. What is the typical chromosome pair arrangement in a human female?
 - (a) XX
 - (b) XY
 - (c) YY
 - (d) XO
6. Which of these factors can influence variation in traits?
 - (a) Only the mother's genes
 - (b) Environmental conditions
 - (c) Only the father's genes
 - (d) Only mutations
7. What type of traits are expressed even if only one allele is present?
 - (a) Recessive traits
 - (b) Dominant traits
 - (c) Linked traits
 - (d) Codominant traits

8. Which of the following processes is essential for producing gametes with half the chromosome number?
- (a) Mitosis (b) Meiosis
(c) Fertilization (d) Replication
9. In Mendel's experiments, which type of flower color appeared in the F₂ generation when he crossed purple and white flowers?
- (a) Purple only (b) White only
(c) Both purple and white (d) Pink only
10. Which chromosome combination results in a male child in humans?
- (a) XX (b) XY
(c) YY (d) XO

Answer Key for Paper Set No. 2:

1. (b) Inheritance
2. (c) Pea plants
3. (b) Blood type
4. (c) DNA and proteins
5. (a) XX
6. (b) Environmental conditions
7. (b) Dominant traits
8. (b) Meiosis
9. (c) Both purple and white
10. (b) XY