

## Heredity-Mendelian Genetics:

1. Who was Gregor Mendel? What were the primary organism he used in his research? What is meant by Mendelian Inheritance?
2. When doing a punnett square, what do the letters outside of the box represent and where do they come from (be specific)? If a parent is homozygous dominant for a trait, how many different kinds of gametes can (s)he make? Give an example If the parent is homozygous recessive ...? Example? If the parent is heterozygous ...? Example? What do the letters inside the box represent (be specific)?
3. Show a cross using the following information: L = long wings, l = short wings Show the punnett square and give the genotypic and phenotypic outcomes of the offspring.
4. Explain Mendel's principle of segregation: to help illustrate your point give an example.
5. Explain Mendel's principle of independent assortment: to help illustrate your point, give an example.
6. Distinguish between complete dominance, co-dominance and incomplete dominance.
7. Human blood groups have which two types of dominance? Explain/show how this works.
8. What is meant by multiple alleles? Give an example If a man of blood type B and a woman of blood type A have children, show (by punnett square) how they could have children of all blood phenotypes (A, B, AB and O).
9. What is meant by Polygenic Inheritance? b. Give an example of a human trait that is governed by polygenic inheritance.
10. What are sex-linked traits? What are X-linked traits? Give some examples. Which sex is generally affected in a greater percentage?
11. If a colorblind male marries a carrier female, what are the chances that their children will be color-blind?
12. What is meant by an "autosomal recessive trait"? What is meant by an "autosomal dominant trait"?

Define the following terms related to mendelian genetics:

gene	recessive allele	homozygous recessive
allele	phenotype	heterozygous/hybrid
dominant allele	genotype	homozygous dominant