Name _____ Date _____ Class _____

Study Guide

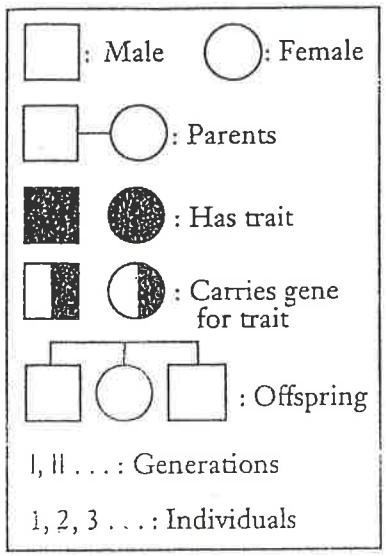
KEY

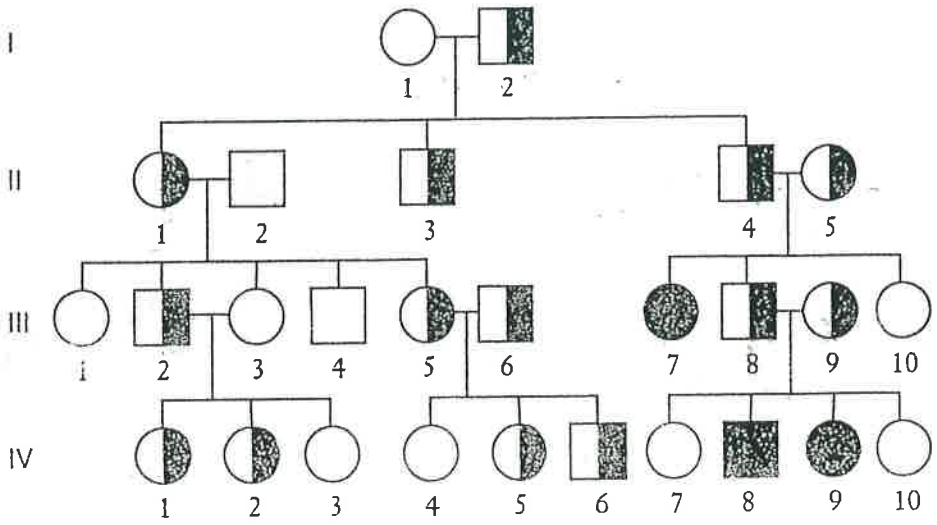
CHAPTER 14 PATTERNS OF HEREDITY

Section . Applied Genetics continued

RECESSIVE

Analyze the pedigree shown for sickle-cell anemia, a recessive blood disorder. Then answer the questions.





8. How many generations are represented in the pedigree? 4

9. In generation I, which parent is heterozygous for the recessive allele? 2

10. Which individual in generation II marries a spouse who is homozygous dominant? 1

11. In which generation does the first case of sickle-cell anemia appear? 3

12. Which generation contains the most male carriers? 3

13. Can two carriers produce an individual with sickle-cell anemia? Yes

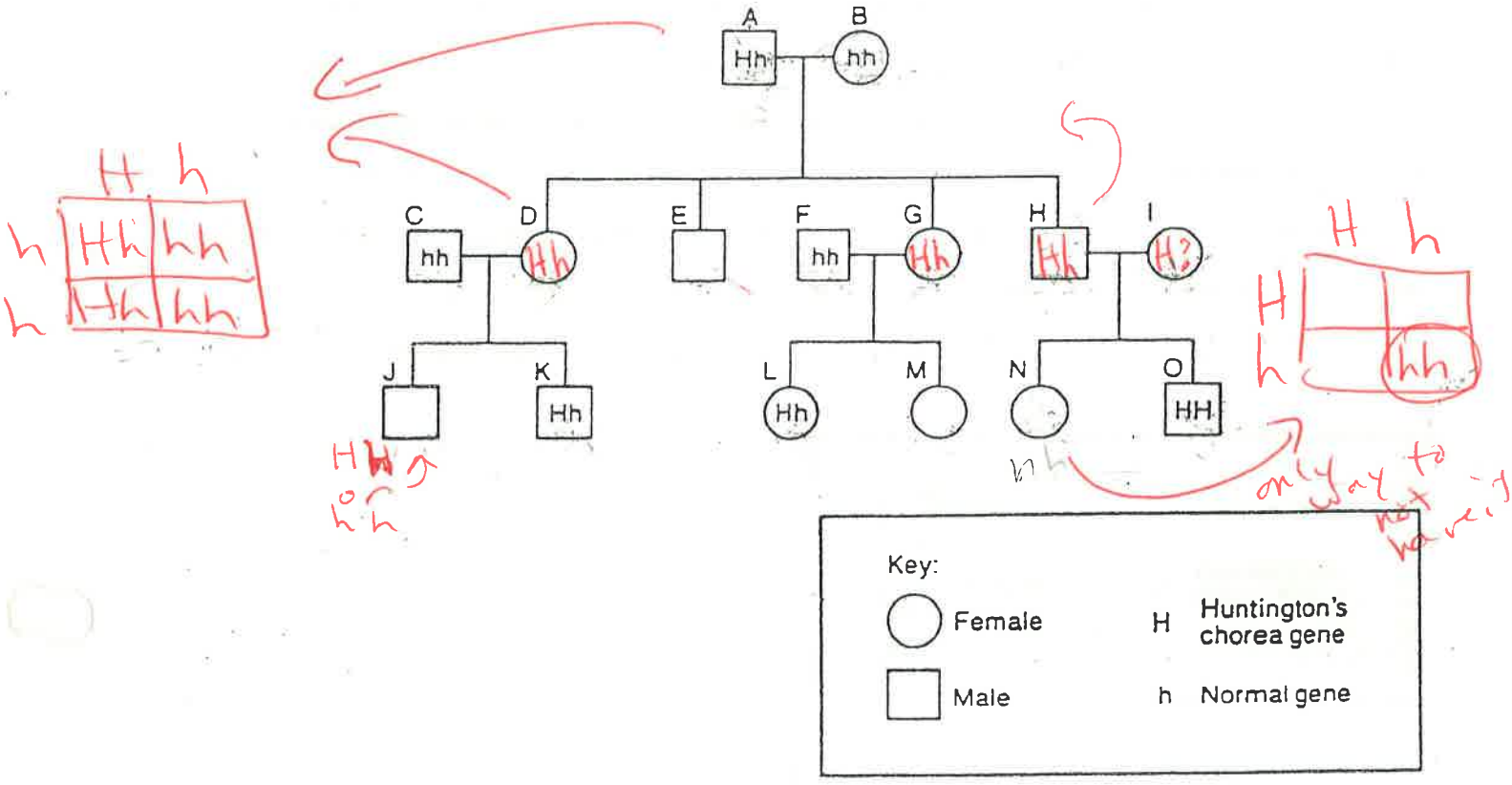
14. Can a normal homozygous individual produce offspring with sickle-cell anemia? no

15. Which parents produce two children with sickle-cell anemia? 8 + 9 of Gen. III

Name _____ 11.1

Mod _____ Inheritance KEY DOMINANT

Huntington's chorea, a disease of the nervous system, is caused by an autosomal dominant gene. The pedigree chart below illustrates a family with individuals who have Huntington's chorea. Use the chart to answer the questions that follow.



6. What is the probable genotype of individual D? Explain your answer. Hh b/c she has a child w/ hh (dom. allele)

7. What are the probable genotypes of individuals H and I? Explain your answer. H= Hh (see parents + punnet square) I- HH or Hh b/c child has HH - each parent must donate at least 1 H.

8. What is the probability that N will NOT have Huntington's chorea? possible 25% if both parents are heterozygous

9. Which individuals can be determined to have Huntington's chorea? A, D, G, H, I, K, L, O

10. Identify the individuals whose genotypes cannot be determined without more information. E, I, J, M, N