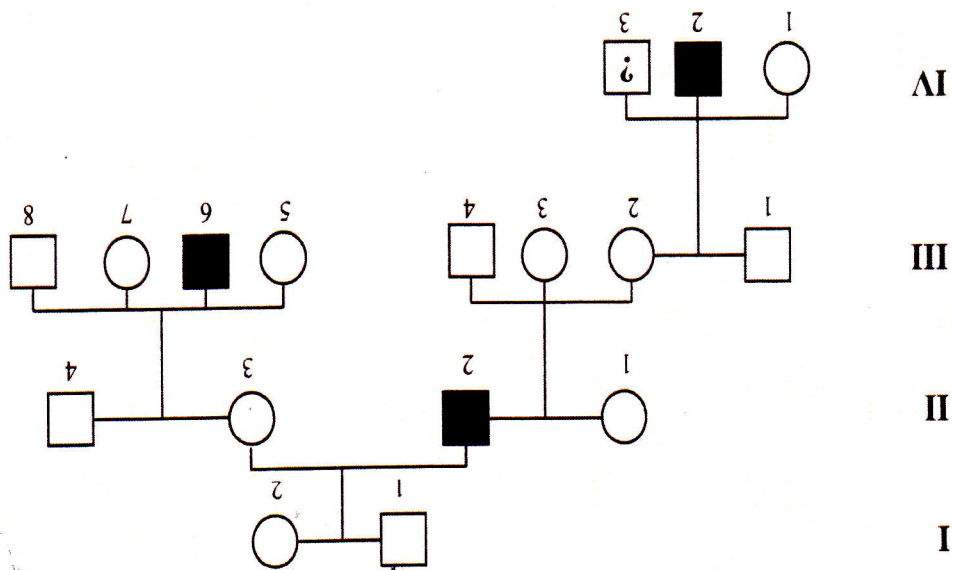


QUESTION 46, 2001 TEE

Question 46 relates to the pedigree shown below. This shows the inheritance, within a family, of a very rare disorder. Individual IV.3 is a newborn baby who has not yet been tested for the disorder.



(a) Is the disorder inherited as a dominant or recessive trait? *Recessive* (1)

(b) Explain how you arrived at your answer in (a).

*1 & 2 are normal but their son is*

*the condition. Also, it skips generation* (1)

(c) Is the trait **more likely** to be autosomal or X-linked? (1)

*X-linked*

(d) Explain how you arrived at your answer in (c).

*more boys have the condition*

(1)

(e) Using the letters 'A' and 'a' to represent dominant and recessive alleles respectively, write the full genotype of individual I.2.

*X<sup>A</sup>X<sup>a</sup>*

(1)

(f) What is the chance that the newborn baby (individual IV.3) has the disorder? (1)

*50%*

(1)

(f)

	$X^A$	$X^a$
$X^A$	$X^A X^A$	$X^A X^a$
$X^a$	$X^A X^a$	$X^a X^a$