

GCSE Biology A (Gateway)

J247/04 Biology A B4-B6 and B7 (Higher Tier)

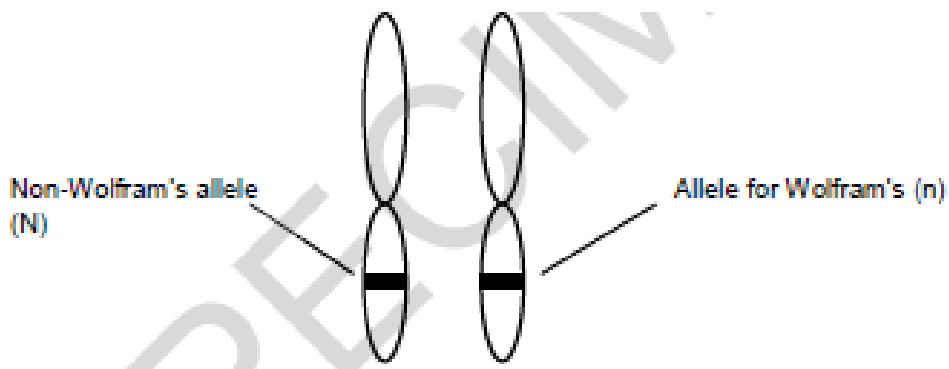
Question Set: 4

1 Wolfram's Syndrome is a genetic disorder. It is caused by a recessive allele (n).
In people with Wolfram's syndrome, a protein does not function correctly.

(a) Explain how a change in an allele can stop a protein functioning correctly.

[4]

(b) The diagram shows a pair of chromosomes from a person called Tim.



Fill in the table to show Tim's genotype and phenotype.

Choose your answers from this list.

- does not have Wolfram's syndrome
- has Wolfram's syndrome
- heterozygous
- homozygous dominant
- homozygous recessive

genotype	
phenotype	

[2]

(c) (i) Meena is expecting a baby. Tim is the father.

Complete this genetic diagram.

			Tim
Meena	N		
	n		

[2]

(ii) Wolfram's syndrome can affect the pancreas.

Meena and Tim's doctor tells them that there is a chance that their baby will have problems controlling their blood glucose level.

Explain why the doctor thinks this.

Use information from part (c) (i) and your biological knowledge.

[4]

Total Marks for Question Set 4: 12

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