Assessment Schedule – 2005

Science: Describe genetic processes (90729)

Evidence Statement

Q	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	Phosphate, sugar, base accurately represented and labelled, with sugar – bond – phosphate – base. A group of nucleotides rather than just one accepted.		
1(b)	Hydrogen bonding.		
1(c)	DNA can be replicated exactly.		
1(d)	Adds nucleotides to the new growing chain / polymer / any suitable word.	Adds nucleotides to the new growing chain / polymer / any suitable word : by adding nucleotides to the 3' end of nucleotides / growing chain / polymer etc.	
2(a)	Any two of: uracil instead of thymine; ribose sugar instead of deoxyribose sugar; (relatively) small molecules, single strand , mobility, location.		
2(b)	Glutamine, phenylalanine, histidine.		
2(c)	To transfer an amino-acid (or polypeptide) to mRNA or ribosome / contains an anti-codon / different kind of tRNA for each amino acid.	To transfer an amino-acid (or polypeptide) to mRNA or ribosome : contains an anti-codon.	Transfers a **specific** amino-acid (or polypeptide) to mRNA or ribosome : contains an anti-codon complementary to codon on mRNA.
3(a)	Difference in the arrangement of (some) bases along the DNA / mutation.	Difference in the arrangement of bases along the DNA in that particular gene.	
3(b)	Gene codes for a protein / enzyme.	Change in the genetic code results in a change in the amino acids of the protein / enzyme which affects its function / enzyme not made.	
3(c) (i)	PCR		
3(c) (ii)	16 (grams)		

Q	Achievement	Achievement with Merit	Achievement with Excellence
3(d)	Restriction enzymes cut the DNA or gene or vector at a specific sequence (<u>not</u> at a certain place) / to form sticky ends.	Both the gene and the virus are cut with the same restriction enzyme to produce the same sticky ends so that the gene and vector can join together. Could mention specific base sequencing or complementary base pairing instead of same sticky ends.	
3(e)	The normal gene will no longer be able to produce a protein / enzyme.	The normal gene will no longer be able to produce a protein / enzyme : if this is an important protein then an important functioning of the cell / body cannot happen.	The normal gene will no longer be able to produce a protein / enzyme : if this is an important protein then an important functioning of the cell / body cannot happen; this can dramatically affect an individual (any valid point made about this) could produce something not intended, a new protein could be made.
	6 / 13	8 / 13 with 3 / 6 at Merit	9 / 13 with 4 / 6 Merit and 1 / 2 at Excellence

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
SIX opportunities answered at Achievement level or higher. 6 × A	EIGHT opportunities answered with at least THREE at Merit level or higher. 3 × M *plus* 5 × A	NINE opportunities answered with at least ONE at Excellence level and FOUR at Merit level. 1 × E *plus* 4 × M *plus* 4 × A