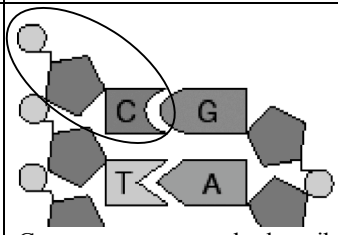
Assessment Schedule – 2006

Biology: Describe the transfer of genetic information (90163)

Evidence Statement

Question	Evidence contributing to Achievement	Evidence contributing to Achievement with Merit	Evidence contributing to Achievement with Excellence
1(a)	(i) female / girl / woman (ii) male / boy / man (Both correct)		
(b)	States that: • sex is determined by **two sex chromosomes** X and Y. **OR** • presence of X or Y. **OR** • XX = female, XY = male.	Explains how the father determines the sex: • if father / male / sperm contributes **X chromosome** offspring is female. **OR** • if father / male / sperm contributes **Y chromosome** offspring is male.	
2(a)	 Components correctly described or drawn: • Phosphate + Sugar + Bases. **Note: May draw one nucleotide with correct labels.**		
(b)	DNA carries information in: • The order of bases / nucleotide. **OR** • Genes / Alleles.	Explains that the **order of bases OR genes / alleles** carry genetic information. **AND** Links code to the **production of traits / characteristics**.	Discusses how the **order of bases AND genes / alleles** carry genetic information. **AND** Uses an example to show how **differences** are produced.
3(a)	Plants grown from cuttings have the **same genetic make-up / same trait / same characteristic / identical to parent**. **OR** Plants grown from cuttings will **grow more quickly**. **OR** Plants grown from **seed** produces **variability**.	Gives a **reason** why it is **better** to grow new plants from a cutting which is linked to the achievement statement: Consistent quality. **OR** Fruiting sooner. **OR** Disadvantage.	

<table>
<tr><td>(b)</td><td>Describes genetic modification as a means to select for desirable or different traits / characteristics.
OR
Uses an example to describe improvement in production of a food crop.</td><td>Explains how introduced gene / genetic material can improve the production of a food crop.</td><td></td></tr>
<tr><td>4(a)</td><td>Describes the purpose is to produce:
• gametes / sex cells / sperm and eggs / spores / haploid cells.
OR
• Half the number of chromosomes.</td><td></td><td></td></tr>
<tr><td>(b)</td><td>Identifies mitosis as the process for the production of new cells for:
• Growth / repair.
OR
• Production of identical cells.</td><td>Explains that the process of mitosis for the production of new cells for:
• Growth / repair.
AND
• Production of identical cells.
AND
• A specific example of where this takes place.</td><td></td></tr>
<tr><td>5(a)</td><td>Dominant: always expressed / shown in phenotype / if present determines phenotype.
AND
Recessive: only expressed if dominant is not present / homozygous recessive / is masked / hidden by the dominant allele.</td><td></td><td></td></tr>
<tr><td>(b)</td><td>Correctly completed punnet square.
Examples:
<table><tr><td></td><td>E</td><td>E</td></tr><tr><td>E</td><td>EE</td><td>EE</td></tr><tr><td>e</td><td>Ee</td><td>Ee</td></tr></table> <table><tr><td></td><td>Y</td><td>Y</td></tr><tr><td>Y</td><td>YY</td><td>YY</td></tr><tr><td>y</td><td>Yy</td><td>Yy</td></tr></table>
Accept any letter, but must be clearly lower case.</td><td></td><td></td></tr>
<tr><td>(c)</td><td>Correctly describes phenotype and genotype:
Genotype: genetic make up / combination of alleles.
AND
Phenotype: physical appearance / trait / characteristics / all yellow seeds.</td><td>Uses the two genotypes of the possible offspring in example (b) to correctly explain the difference between phenotype and genotype.</td><td></td></tr>
</table>

(d)	**Scenario 1:** Test cross / back cross / cross with green-seed plant. **OR** **Scenario 2:** Breed these seeds / plants: • for several generations **OR** • until green seeds show up. **OR** Grows seeds and breeds plants.	**Scenario 1:** Explains the crosses: • ee x EE **AND** • ee x Ee **Scenario 2:** Explains the crosses: • Ee x Ee **AND** • EE x EE **OR** • EE x Ee	**Scenario 1:** Discusses the **expected outcomes** of both crosses **after breeding over a number of generations OR** with a **large numbers of crosses**: • ee x EE **All offspring show dominant trait.** **AND** • ee x Ee **Some offspring show recessive trait.** **Scenario 2:** Discusses the **expected outcomes** of both crosses **after breeding over a number of generations OR** with a **large numbers of crosses**: • Ee x Ee **Some offspring we show recessive trait.** **AND** • EE x EE **All offspring show dominant trait.** **OR** • EE x Ee **All offspring show dominant trait.**

Judgement Statement

Biology: Describe the transfer of genetic information (90163)

Achievement	Achievement with Merit	Achievement with Excellence
SEVEN questions answered correctly. Minimum 7 × A	SEVEN questions answered correctly, including at least THREE at Merit level. Minimum of 3 × M + 4 × A	EIGHT questions answered correctly, including at least THREE at Merit level and at least ONE at Excellence level. Minimum of 1 × E + 3 × M + 4 × A