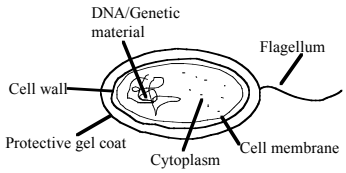
Assessment Schedule – 2005

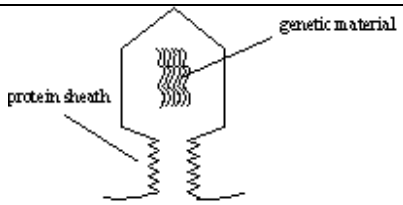
Science: Describe aspects of biology (90188)

Evidence Statement

Q	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	Blotched : named cat (7) / idea of generalised reason. Eg stripy = more frequent / cats 7 and 8 only have blotched offspring.	Blotched : idea of alleles used in reason. Idea of dominant x dominant = dom or rec, but rec x rec = **only** rec.	
1(b)+ (c)	(b) Bb (any letters used) (c) BB (consistent letters from 1b) **Mark together, both correct.**		
1(d)	Allele : outcome / (alternate) form of a gene. Gene : instruction/code/piece of DNA for a particular feature. **Both allele and gene definition required.**		
1(e)	Desired characteristic selected / cats bred together / selective breeding.	Desired characteristic selected : these cats bred together.	Desired characteristic selected : these cats bred together : offspring with desired characteristic chosen to breed : generations / till population is purebreeding.
2(a)	20		
2(b)	Purple parent Dd / dD Yellow Parent dd **All correct**		
2 (c)	1 purple : 1 yellow. Equal numbers of purple and yellow offspring. Allow follow-on from above.		
2(d)	Carry out test cross / cross purple seed with known genotype / homozygous recessive / yellow seed / cross purple seeds for many generations.	Cross purple seed : known genotype / homozygous recessive / yellow seed : no yellow offspring means parent is homozygous (or reverse).	
2(e)	**Describes ONE process** Process A – uses meiosis to produce gametes / half chromosome number / new plants different / takes time to produce large numbers of similar plants / sexual reproduction. OR Process B – uses mitosis / cloning / growth-only process used / resulting plants all identical / quick way of producing lots of plants / asexual reproduction.	**BOTH A and B described – impact of ONE process on offspring explained.** Process A uses meiosis / sexual reproduction : forms offspring that are different. Process A forms different offspring : takes time to produce large numbers that are similar / disease survivability. Process B uses mitosis / asexual reproduction : all offspring are the same. Process B produces identical offspring : large numbers quickly / lack of disease survivability.	**Comparison / contrast given by impact of BOTH processes on the offspring produced.** Process A uses meiosis / sexual reproduction : forms offspring that are different. Process A forms different offspring : takes time to produce large numbers that are similar / disease survivability. Process B uses mitosis / asexual reproduction : all offspring are the same. Process B produces identical offspring : large numbers quickly / lack of disease survivability.

Yellow Parent	D	d
d	Dd	dd
d	Dd	dd

Q	Achievement	Achievement with Merit	Achievement with Excellence
3(a)	Food / moisture / warmth /O_2/ok pH. **Any 2 needed.**		
3(b)	**Describes ONE effect of heating** To kill any bacteria on the bottles / to kill the yeast / to remove the alcohol / stop fermentation.	**Gives reason for the effect** Eg To kill bacteria : which is harmful to humans	
3(c)	Without : oxygen (not air) /not much.		
3(d)	Alcohol / ethanol **:** CO_2. **BOTH**		
4(a)	 Diagram with any 3 **correct** labels. **Max 1 error.**		
4(b)	Any one of • cooling / refrigeration / freezing slows reproduction/growth • cooling slows the rate of cell reactions • cooking is done at high temperatures.	ONE explained plus ONE other mentioned • freezing: bacteria dormant / not reproducing • Refrigeration : slows reproduction • high temperatures kill bacteria • if chicken not thoroughly cooked in middle : not hot enough to kill bacteria. • heating / room temp increases the reproduction rates of bacteria	Effect of **both** storage temperature **and** cooking temperature on life process. • Freezing : bacteria dormant / not reproducing ***or*** Refrigeration : slows reproduction / bench : faster reproduction. • High temperatures kill bacteria / if chicken not thoroughly cooked in middle : not hot enough to kill bacteria.
4(c)	Area 1 Plate B Area 2 Plate C Area 3 Plate A **All 3 correct.**	Plate B – disinfectant kills bacteria therefore no reproduction / growth. Plate C – bacteria have plenty of warmth therefore large colonies. Plate A – cold temperature slows rate of reproduction. **Reason for Plate B and ONE of C or A correct.**	
4(d)	Coverage of plate C > coverage A > coverage of plate B. **All have more than original plates.**		

Q	Achievement	Achievement with Merit	Achievement with Excellence
5(a)	 **Diagram with 2 correct labels:** • Genetic material / nucleic acid / DNA or RNA. (**Not** chromosome). • Protein sheath / coat.		
5(b)	**Any one of:** Viruses only reproduce / Viruses are not cells / Viruses do not grow / excrete / sense their environment / need nutrition / respire / Viruses have genetic material like living things.	Uses **THREE** aspects of MRSGREN that qualifies the life choice. **OR** Virus alive (or not) : replicate / reproduce : **living** host.	Life choice qualified **and** contrasted. Virus alive (or not) : replicate / reproduce : living host **AND** Virus alive (or not) : THREE reasons (from MRSGREN).

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
TEN opportunities answered at Achievement (or higher) with answers from both genetics (Q1, Q2) and micro-organisms (Q3, Q4, Q5). 10 × A	THIRTEEN opportunities answered with FIVE at Merit (or higher) and EIGHT at Achievement level. 5 × M *plus* 8 × A	FOURTEEN opportunities answered with TWO at Excellence level, FOUR at Merit level and EIGHT at Achievement level. 2 × E *plus* 4 × M *plus* 8 × A