

Assessment Schedule – 2007**Science: Describe aspects of biology (90188)****Evidence Statement**

Q	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	Feeds on (or gains nutrients from) dead (or decomposing/decaying) material. (Not lives off.)		
1(b)	Any one idea of: <ul style="list-style-type: none"> Lets in more oxygen For aerobic respiration So that anaerobic respiration doesn't occur The saprophytes (bacteria) are aerobic. 	Explains the need for O₂ eg <ul style="list-style-type: none"> Lets in more oxygen for respiration The decomposers are aerobic so need O₂ Provides more O₂ to prevent anaerobic respiration. 	
1(c)	Any one idea of: <ul style="list-style-type: none"> Number of organisms reduced Respiration or feeding reduced Organisms start to die. 	Explains why there is less respiration which would have maintained the heat, eg: <ul style="list-style-type: none"> Less respiration as heat kills off microbes Less respiration due to less food available Fewer microbes still alive to respire so heat decreases. 	
2(a)	Extra-cellular digestion stated or described, eg: Enzymes secreted, food digested, reabsorbed.		
2(b)	Function and role in spreading described for either hyphae or sporangia. OR Function or role in spreading described for both hyphae and sporangia <ul style="list-style-type: none"> Sporangia function eg spore production, reproduction Sporangia role in spreading, eg spore dispersal above ground, bursting to release spores into the air Hyphae function eg gaining nutrients, feeding by extracellular digestion Hyphae role in spreading, eg growth of hyphae, hyphae branchout, hyphae form mycelium to cover a large area. 	Explanation which links function to role of spreading for either sporangia or hyphae. Eg: <ul style="list-style-type: none"> Sporangia are above ground to release spores into the air so they are easily spread Sporangia disperse spores so new fungi can grow further away Hyphae absorb nutrients which allows further growth of the hyphae into new food supply As the hyphae grow, new sporangia are produced. AND <ul style="list-style-type: none"> Role or function for other structure. 	Discussion considers how the function of BOTH hyphae and sporangia play a role in spreading fungi. Eg: <ul style="list-style-type: none"> Sporangia produce spores (Function) which are dispersed in the air and grow into new fungi (role of spread). AND <ul style="list-style-type: none"> Hyphae absorb nutrients (function) and grow to cover more area (role of spread).
3(a)	A = protein coat/sheath or capsid B = DNA or RNA or genetic material (not chromosome, not genes). BOTH needed.		

3(b)	<p>Describes a life function of both bacteria and viruses, eg:</p> <ul style="list-style-type: none"> • Bacteria feed by extra cellular digestion. • Viruses replicate using a host cell. 	<p>Explanation of why a single life process is the same or different for bacteria and a virus, eg:</p> <ul style="list-style-type: none"> • Bacteria feed by extra cellular digestion to supply the materials needed for growth and reproduction. Viruses do not feed (as the materials for replication are supplied by the host cell). • Bacteria carry out respiration to provide the energy for cell division/growth. Viruses do not respire (as they don't have the structures and the host cell supplies the energy to replicate viruses). 	<p>Compares and contrasts reproduction and one other life process of BOTH bacteria and viruses, eg:</p> <ul style="list-style-type: none"> • Bacteria reproduce by binary fission where the cells contents are reproduced before the cell divides in two. A virus does not have the structures to reproduce itself so relies on the host cells structures. A virus will inject its genetic material into the host cell, which then carries out the instructions to make many new viruses before rupturing. Bacteria feed by extra cellular digestion to supply the materials needed for growth and reproduction. Viruses do not feed as the materials for replication are supplied by the host cell. 																
4(a)	Idea that a gene is a part of a chromosome.																		
4(b)	Genotype identified – XX																		
4(c)	<p>Description of either type of cell division in humans, eg:</p> <ul style="list-style-type: none"> • Mitosis produces cells with 46 chromosomes. • Meiosis produces cells with 23 chromosomes. • Body cells formed by mitosis • Gametes formed by meiosis. <p>or</p> <ul style="list-style-type: none"> • Sex cells have 23 chromosomes so that when a sperm fertilises an egg the number is restored to 46. 	<p>A description of both types of cell division (see achieved) plus an explanation of why either type of cell division occurs, eg:</p> <p>Meiosis forms sex cells with half chromosome number so that:</p> <ul style="list-style-type: none"> • Fertilisation does not cause chromosome number to increase each generation. • When sperm meets egg the chromosome number is restored • So that offspring get a mix of genes from two parents. <p>OR</p> <p>Mitosis forms body cells with the full chromosome number:</p> <ul style="list-style-type: none"> • so that all new cells can carry out the same functions • so that all cells have the full set of instructions. <p>OR</p> <ul style="list-style-type: none"> • In meiosis the cell divides twice but in mitosis it only divides once. 	<p>Discussion includes a reason for each type of division occurring, eg:</p> <ul style="list-style-type: none"> • Meiosis forms sex cells with half chromosome number so that when sperm meets egg the chromosome number is restored to 46. Body cells divide by mitosis so that each new cell gets a full set of instructions. • Meiosis produces sex cells with a single set of chromosomes so that the zygote will inherit alleles from two parents to provide genetic variation. Then the zygote grows by mitosis which produces identical cells that can carry out the same functions. 																
5(a)	bb																		
5(b)	<table border="1"> <tr> <td></td><td></td><td>bb</td><td></td></tr> <tr> <td></td><td></td><td>b</td><td>b</td></tr> <tr> <td>Bb</td><td>B</td><td>Bb</td><td>Bb</td></tr> <tr> <td></td><td>b</td><td>bb</td><td>bb</td></tr> </table>			bb				b	b	Bb	B	Bb	Bb		b	bb	bb		
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5(c), (d)	100%	<p>Explanation that all offspring have inherited 'b', which they in turn can pass on.</p>																	

5(e)	<p>Describes the concept where an individual has only one form of coding for any one gene. Eg:</p> <ul style="list-style-type: none"> • Genotype has both alleles the same. • Having two copies of one allele for a gene/trait. • Both alleles in gene pair are the same. 		
5(f)	<p>Describes a test cross. Eg:</p> <ul style="list-style-type: none"> • Cross rabbit with a broken coat trait with a solid coat rabbit. • Cross broken coat rabbit with a homozygous recessive rabbit (bb). 	<p>Uses the results of one cross to support the parent being either homozygous or heterozygous. Eg:</p> <ul style="list-style-type: none"> • If some offspring have solid coat colour, the parent is heterozygous (Bb). • If all of the offspring have blotchy coat colour the parent is (probably) homozygous (BB). <p>Labelled Punnett square may be used to support answer.</p>	<p>Uses the results of both crosses to identify the heterozygous parent with certainty and the homozygous parent as probable. Eg:</p> <ul style="list-style-type: none"> • If some offspring have solid coat colour, the parent is heterozygous (Bb). • If all of the offspring have blotchy coat colour after many matings between the pair of rabbits, the parent is almost certainly homozygous (BB). <p>Labelled Punnett square may be used to support answer.</p>

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
<p>EIGHT questions answered correctly.</p> <p>Minimum of $8 \times A$</p>	<p>TEN questions answered correctly, including at least FOUR at Merit level.</p> <p>Minimum of $4 \times M + 6 \times A$</p>	<p>ELEVEN questions answered correctly, including at least TWO at Excellence level and at least THREE at Merit level.</p> <p>Minimum of $2 \times E + 3 \times M + 6 \times A$</p>