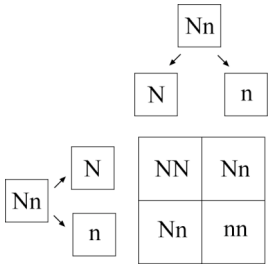
Assessment Schedule – 2006
Science: Describe aspects of biology (90188)
Evidence Statement

Question	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	Description and/or annotated diagram which shows cell dividing into two identical cells binary fission).		
1(b)	Lack of, or no, oxygen.		
1(c)	A – Spore(s) B – Hypha(e) (mycelium/rhizoid) Both correct		
1(d)	Implication of dispersal (spores being carried by the air). **OR** Spores released for reproduction.	Implication of dispersal **AND** a reason why spores need to be dispersed, eg: • to reduce competition. • new food supply • more space available.	
1(e)	Description of two life processes for one organism **OR** Description of one life process for each organism, eg: Bacteria • feed by extra-cellular digestion • reproduce by binary fission. Fungus • feed by extra-cellular digestion • reproduce from spores.	**One** comparison of digestion and **one** comparison of reproduction between bacteria and fungi, eg: • both bacteria and fungi feed by extra-cellular digestion • bacteria and fungi both reproduce asexually • bacteria split in two, fungi produce many spores at once • fungi secrete enzymes through the hyphae, bacteria don't have hyphae.	**Three** comparisons encompassing **both** digestion and reproduction between bacteria and fungi, eg: • mode of feeding • structures associated with feeding • method of reproduction • fungi may reproduce sexually • yeast reproduce by budding • numbers of offspring • rate of reproduction • dormancy • dispersal.
1(f)	Description of **any two** aspects of temperature, water content or storage time for milk or powder, eg: • Powdered milk has no water content and can be stored along time. • Powdered milk can be stored in the pantry (room temp) because it is dry. • Milk has to be kept in the fridge to stop it going off. • Milk contains lots of water so it will go off quickly.	Explanation of how temperature **OR** water content impacts on micro organism activity, eg: • Powder has no water content and as such bacteria can not reproduce/grow in powder. **OR** • Milk must be kept in the fridge to slow down micro organism growth	Discussion of how temperature **AND** moisture impact on micro organism activity in powder compared with milk, eg: • Micro organisms need water to reproduce, milk contains water and needs to be stored in the fridge to limit bacterial reproduction. **AND** • Milk powder treated at a high temp has no bacteria so there are none to reproduce. **OR** • Powder does not need to be stored in the fridge as bacterial growth is already limited by a lack of water.
2(a)	Viruses need living cells to replicate / reproduce. **OR** A nutrient agar plate does not contain living cells.		

Question	Achievement	Achievement with Merit	Achievement with Excellence
2(b)	Viral replication includes: • DNA/RNA injected into host cell • host cell replicate DNA/RNA makes more viruses • new viruses burst out of cell. (virus not replicating itself)		
3(a)	39 (78/2)		
3(b)	Describes the concept where an individual has two different forms of coding for any one gene, eg: • genotype has two different alleles / forms of a gene • having two different alleles for a gene/trait.		
3(c)	 All parts completed correctly using the correct letters.		
3(d)	3 normal coats :1 long coat 3:1, normal :long Any suitable numeric expression of the ratio. Must include the phenotypes.		
3(e)	Recognises that the sample size is too small **OR** that each outcome (puppy) is an independent event, eg: • Eight puppies are too few to accurately reflect the predicted outcome. • Although there is a 75% chance of a puppy having short hair , there is still a chance that any puppy will have long hair.	Explanation links independent event/expected outcome to sample size, eg: • There is always a 25% chance of a puppy having long hair. In this case, eight puppies is too few to show the expected ratio of 3:1.	
3(f)	States a test cross is carried out. **OR** Describes cross with a homozygous recessive.	Uses the results of **one** cross to support the parent being either homozygous or heterozygous, eg: • If some offspring are long coated, the parent is heterozygous (Nn). • If all of the offspring are short haired, the parent is homozygous (NN).	Uses the results of **both** crosses to identify the heterozygous parent with certainty and the homozygous parent as probable, eg: • If some offspring are long coated, parent must be heterozygous. • If all of the offspring are short haired, it is probable that the parent is homozygous (NN).

Question	Achievement	Achievement with Merit	Achievement with Excellence
4	Describes why either the cloned offspring **looks identical** to biological parent **OR** why it **looks different** to the parent in sexual reproduction, eg: • cloned offspring is **genetically** identical to the biological parent • cloned offspring gets all of its' DNA from only one parent • mitosis is used to produce cloned offspring • cloned offspring has the same DNA as the parent • offspring from sexual reproduction are genetically different from either parent • offspring from sexual reproduction get a set of genetic material from each parent • sexual reproduction requires meiosis to produce gametes.	Explanation of how **both** processes provide **OR** restrict genetic variation, eg: • The cloned offspring is identical to the biological parent because it gets all of its DNA from it. **AND** • Sexually reproduced offspring are different from the parents **because** they get DNA/genes from two different sources. **OR** If an excellence level statement is given for either cloning or sexual reproduction AND an achieved statement is given for the other process.	Discussion of how **both** processes result in the given appearance with reference to meiosis, eg: • The cloned offspring is genetically identical to the biological parent because it does not involve meiosis/only involves mitosis. • One cell undergoes mitosis so all cells are genetically identical. **AND** • Sexual Reproduction involves gametes produced by meiosis. The resulting offspring will have a unique set of genes.

Judgement Statement

Science: Describe aspects of biology (90188)

Achievement	Achievement with Merit	Achievement with Excellence
EIGHT questions answered correctly. Minimum of 8 × A	NINE questions answered correctly, including at least FOUR at Merit level. Minimum of 4 × M + 5 × A	TEN questions answered correctly, including at least TWO at Excellence level and at least THREE at Merit level. Minimum of 2 × E + 3 × M + 5 × A