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Mark Scheme (Results)

June 2011

360Science

GCSE Additional Science
Structured Paper B2 (5016F/1F)

GCSE Biology
Structured Paper B2 (5028F/1F)

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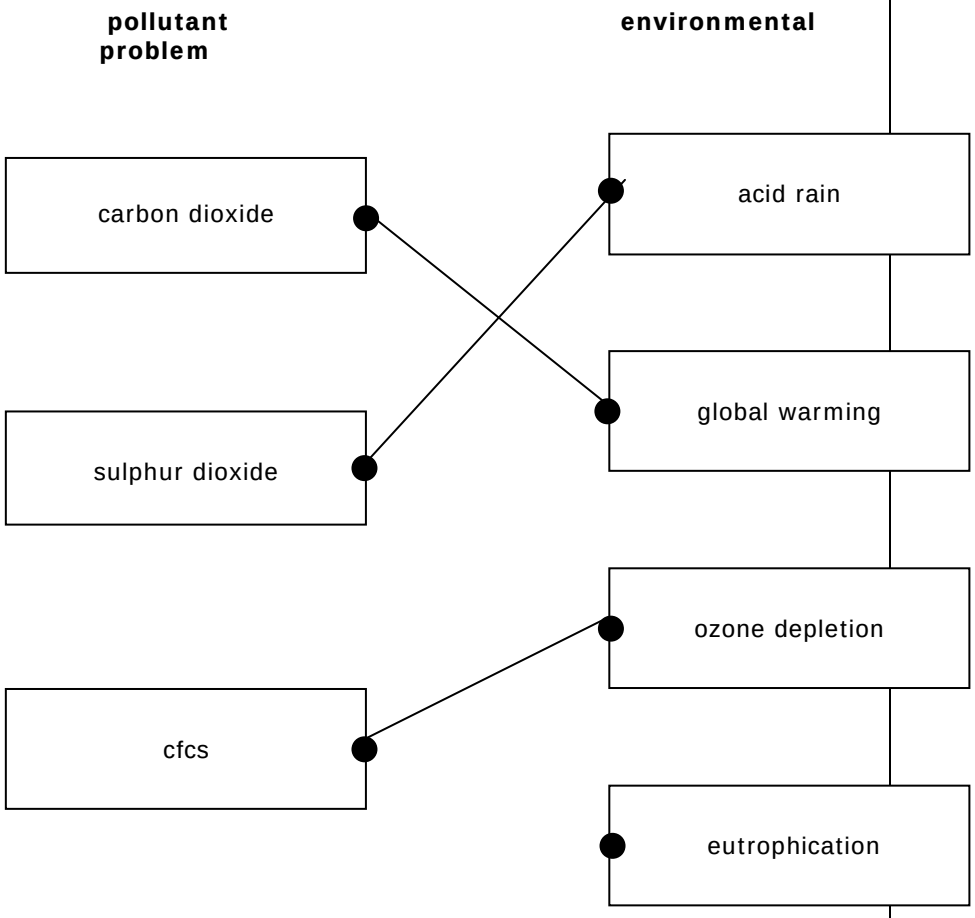
5016F & 5028F Mark Scheme
June 2011

Question Number	Answer	Additional guidance	Mark
1(a)(i)	grip/hold on to/rip/tear prey;	Accept: kill/bite/ strangle (crush windpipe) Ignore: chew/cut chew/cut	**(1)**

Question Number	Answer	Additional guidance	Mark
1(a)(ii)	sprint /run fast / accelerate/pounce;		**(1)**

Question Number	Answer	Additional guidance	Mark
1(a)(iii)	camouflage/ blend in with surrounding / prey can not see them(until too late)/ can creep up on prey/ less likely to be seen by hunters ;	Ignore: hide	**(1)**

Question Number	Answer	Additional guidance	Mark
1(b)	Any **two** from: 1. habitat destruction/ 2. lack of prey / 3. (over) hunted / 4. outcompeted / 5. more difficult to find a mate;	 Accept: natural disaster Accept: lack of food / not enough food Ignore: they have died been killed	**(2)**

Question Number	Answer	Mark
2(a)		**(3)**

Question Number	Answer	Mark
3(a)	1. photosynthesis ; 2. roots ; 3. oxygen ;	**(3)**

Question Number	Answer	Additional guidance	Mark
3(b)(i)	provide recycled {nitrates / nutrient} / reduces landfill / less rubbish burnt / less need for artificial fertilisers / less pollution /eq ;	Accept: less transport costs	**(1)**

Question Number	Answer	Additional guidance	Mark
3(b)(ii)	not all paper clean /not enough demand for recycled paper /collection costs too high / recycling costs too high / low grade paper can't be recycled / paper can't be recycled many times (about 5) (as fibres become too short)		**(1)**

Question Number	Answer	Additional guidance	Mark
4		ticks or Y for yes X or N for no **Do not** accept blank for no	**(3)**

	aerobic respiration	**anaerobic respiration**
provides energy	yes	yes
uses oxygen	yes	no
uses glucose	yes	yes
can cause cramp	no	yes

One mark for each correct row

Question Number	Answer	Additional guidance	Mark
5(a)	152 to 196 (cm) / 44 (cm) ;		**(1)**

Question Number	Answer	Additional guidance	Mark
5(b)	Any **two** from: 1. genes / alleles / genetic information ; 2. nutrition ; 3. (growth) hormones ;	 Accept: amount of food Accept: environment	 **(2)**

Question Number	Answer	Acceptable answers	Reject	Mark
5(c)	Mitosis ;	phonetic spellings of mitosis	meiosis	**(1)**

Question Number	Answer	Additional guidance	Mark
6(a)	Any **two** from: 1. they both rise overall ; 2. the number of cases of skin cancer in females is (always) greater than males / ORA ; 3. they rise and fall in similar/same way ; 4. credit any one correct comment on part of graph / correct ref to numbers comparing male / female ; they both peak in 1987 / 1987 to 1988 gap between males and females less towards the end / from 1997 to 1999	 Accept: male and female lines both rise/ both show positive correlation Accept: the female line is (always) greater / higher than the male line Accept: identical	**(2)**

Question Number	Answer	Additional guidance	Mark
6(b)	(Amount of / type of) lichens / (Number of) peppered moth / (Number of cases of) asthma / other named indicators of air pollution ; Reject water pollution	 Accept melanic /normal forms of moth Accept: lung cancer	**(1)**

Question Number	Answer	Acceptable answers	Mark
7(a)	Any **two** from: 1. fix nitrogen / nitrogen fixing bacteria / rhizobium; 2. nitrogen from air / soil ; 3. to make ammonium ions / nitrate (ions) ; 4. (used by plant) to make proteins / DNA ;	 Reject: nitrifying / denitrifying (bacteria) Accept: use / absorb nitrogen Accept: ammonia Ignore refs to absorbing nitrates Ignore refs to absorbing water etc	**(2)**

Question Number	Answer	Additional guidance	Mark
7(b)	Any **two** from: 1. Plants decompose / decomposing bacteria /decomposers (decompose / decay leaves) ; 2. (proteins are changed into) ammonia ; 3. into nitrite (ions); 4. into nitrate (ions); 5. by nitrifying bacteria/named nitrifying bacteria ; 6. Credit points in nitrogen cycle beyond this e.g. nitrate ions are made (MP4) which may be changed back to nitrogen again by denitrifying bacteria ;	 Accept: fungi for bacteria here	**(2)**

Question Number	Answer	Additional guidance	Mark
7(c)	Any **three** from: 1. nitrate (ions) build up / eutrophication ; 2. algal bloom ; 3. (blocks out sunlight so)less photosynthesis ; 4. algae/plants decompose/rot ; 5. (bacteria cause) oxygen depletion /oxygen levels decrease / oxygen concentration goes down 6. (low oxygen levels cause) biodiversity decreases;	Deduct one mark if significantly out of sequence Accept: descriptions – e.g. algae grow very fast / algae grows right over surface of water Ignore: plants die Accept: no oxygen Accept: fish die Accept idea that a small increase in eutrophication can initially increase biodiversity	**(3)**

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