

Mark Scheme (Results)

March 2011

GCSE

360Science

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

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

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5016F & 5028F Mark Scheme

Question Number	Answer	Mark
<p>1</p>	<p>Embryo</p> <p>fetus</p> <p>sperm</p> <p>a male gamete</p> <p>collection of cells that develop after fertilisation</p> <p>the name for an embryo when it is eight weeks old and has human features</p> <p>a female gamete</p> <p>given</p> <p>1 correct = 1 mark 2 correct = 2 marks if two lines are drawn from any boxes no marks</p>	<p>(2)</p>

Question Number	Answer	Additional guidance	Mark
2(a)	Diaphragm drawn lowered,	accept flattened / horizontal reject if diaphragm domed downwards	(1)

Question Number	Answer	Mark
2(b)(i)	<ol style="list-style-type: none"> 1. into ; 2. windpipe ; 3. diffusion ; 	(3)

Question Number	Answer	Additional guidance	Mark
2(b)(ii)	<p>Any two from:</p> <ol style="list-style-type: none"> 1. (to release) energy ; 2. from sugar/glucose ; 3. by aerobic 4. respiration ; 	accept: to avoid anaerobic respiration / avoid producing lactic acid /cramp	(2)

Question Number	Answer	Additional guidance	Mark
4(a)	(roughly) stays the same / increases slightly in 1960 – 64 and 1970 – 74 before dropping back to the same average rainfall / stays about 1700 to 1950 mm (units required if numbers are stated) ;	accept goes up and down a little	(1)

Question Number	Answer	Additional guidance	Mark
4(b)	Estimate in range of 3200 to 3500 ; May be written on graph.	Ignore: just bar drawn on graph	(1)

Question Number	Answer	Additional guidance	Mark
4(c)	Any two from: 1. fewer birds of prey ; 2. which are predators of small birds ; 3. so fewer small birds eaten ; OR 4. grass / plant growth increases ; 5. produces more seeds ; 6. more food for small birds ;		(2)

Question Number	Answer	Additional guidance	Mark
5(a)	<p>Any two from:</p> <ol style="list-style-type: none"> 1. some thrown away / not everyone puts paper in recycling bins ; 2. some paper oily / greasy / dirty / laminated / has glue on it; 3. paper fibres become too small / paper fibres get damaged /fibres (become so small) that they won't mesh together; 4. idea of costs of recycling only viable for first few times as paper worth less each time it is recycled / cost increases each time paper is recycled /quality becomes so low that it is not worth recycling; 	<p>Accept: It eventually costs too much to recycle again / the quality of the paper becomes too low to recycle</p>	(2)

Question Number	Answer	Additional guidance	Mark
5(b)	<p>transport / collecting bags / collecting bins / chopping paper up / pulping / cost of material e.g. bleach, starch, caustic soda /cost of machinery / workers / wages ;</p>	<p>Ignore vague references to processing paper. Ignore post recycling processes.</p>	(1)

Question Number	Answer	Additional guidance	Mark
5(c)	<p>Any two from</p> <ol style="list-style-type: none"> 1. plant more trees/woods; 2. replacement planting / reforestation ; 3. coppicing ; 4. plant fast growing trees / only plant trees suitable for paper ; 5. stopping deforestation for farming /building land (so these trees are available for paper); 	<p>credit descriptions of any one of these</p> <p>accept pollarding</p> <p>ignore: just stopping deforestation</p>	(2)

Question Number	Answer	Additional guidance	Mark
6.	<p>cellulose cell wall for protection / rigidity / support / strength / barrier (to microbes) ;</p> <p>chloroplast (site of) photosynthesis / traps light ;</p> <p>vacuole storage of water/sugar/minerals / support / turgidity / controls the amount of water in the cell ;</p> <p>cell membrane controls what goes in and out of a cell / allow small molecules into / out of cell / prevents large molecules entering / leaving cell / protection;</p>	<p>accept keeps the cells shape / holds the cell together</p> <p>accept making glucose Ignore contains chlorophyll</p> <p>accept 'hold' or 'contain' Ignore cell elongation</p> <p>ignore holds the cell together</p>	(4)

Question Number	Answer	Additional guidance	Mark
7	<p>1. double helix / 2 strands coiled ;</p> <p>2. correct ref to structure e.g. (pair) bases / hydrogen bonds / sugar phosphate backbone eq ;</p>	Accept: refs to spiralled shape / twisted ladder / diagram showing shape	(2)

Question Number	Answer	Additional guidance	Mark
8(a)	<p>Any two from:</p> <ol style="list-style-type: none"> 1. (more) food / fruits / leaves/ flowers available to eat from plants / warmer / prey for predators; 2. (more) habitats ; 3. easier to avoid predators / easier to move to other trees; 	<p>Ignore: more sunlight</p> <p>Accept more shelter than emergent layer</p>	(2)

Question Number	Answer	Additional guidance	Mark
8(b)	<p>less light / less energy (1) ; (so) reduced photosynthesis (1) ;</p> <p>OR</p> <p>more competition for nutrients / space / water (1) ; (so) correct consequence of above (1) ;</p>	Ignore refs to less growth	(2)

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