



*Rewarding Learning*

**General Certificate of Secondary Education  
2012**

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**Science: Biology**

Paper 1  
Foundation Tier

**[G0901]**

**WEDNESDAY 30 MAY, AFTERNOON**

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**MARK  
SCHEME**

			AVAILABLE MARKS													
1	(a)	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Scales</th> <th>Internal fertilization</th> <th>Constant body temperature</th> </tr> </thead> <tbody> <tr> <td>✓ (given)</td> <td>✗</td> <td>✗</td> </tr> <tr> <td>✓</td> <td>✓ (given)</td> <td>✗</td> </tr> <tr> <td>✗</td> <td>✓</td> <td>✓ (given)</td> </tr> </tbody> </table>	Scales	Internal fertilization	Constant body temperature	✓ (given)	✗	✗	✓	✓ (given)	✗	✗	✓	✓ (given)	[1]	5
	Scales	Internal fertilization	Constant body temperature													
	✓ (given)	✗	✗													
✓	✓ (given)	✗														
✗	✓	✓ (given)														
		[1]														
		[1]														
	(b)	Skin moist/not waterproof/skin needs moisture/skin would dry out; Eggs laid/tadpoles develop in water;	[2]													
2	(a)	Crawling animals <b>fall in</b> ; Cannot get out/drown/trapped/cannot escape;	[2]	5												
	(b)	Pooter; Sweep net; Quadrat;	[3]													
3	(a)	1800;	[1]	5												
	(b)	1451; – 1900;	[2]													
	(c)	Continuous;	[1]													
	(d)	Environment/food/diet;	[1]													
4	(a)	Fungi/mould;	[1]	5												
	(b)	Killed/dies;	[1]													
	(c)	(i) Respiration/fermentation;	[1]													
		(ii) <b>Carbon dioxide</b> bubbles; <b>Trapped</b> in the dough;	[2]													
5	(a)	Any <b>two</b> from: Increases; Levels off/stays steady; Then decreases;	[2]	5												
	(b)	Birth rate equals death rate;	[1]													
	(c)	Any <b>two</b> from: Lack of food; Predation; Climate/cold temperatures; Disease;	[2]													

		AVAILABLE MARKS
6	(a) Tumour;	[1]
	(b) Any <b>one</b> from: Shape/described correctly; Size/described correctly; Cancer cell has thicker membrane/accept converse;	[1]
	(c) Any <b>two</b> from: Cancer/tumour cells escape into blood; Spread/carried to other parts of the body; Form secondary tumours;	[2]
	(d) Tar;	[1]
7	(a) Sun/sunlight;	[1]
	(b) (i) Holly;	[1]
	(ii) Changes light energy into chemical energy/photosynthesis/produces sugar (starch); Provides energy for/used as food by other organisms;	[2]
	(c) (Holly) leaf-miner/insect;	[1]
	(d) Web;	[1]
8	(a) A – Respiration; B – Photosynthesis; C – Feeding/consumption/eating;	[3]
	(b) Bacteria/fungus;	[1]
	(c) Produces CO <sub>2</sub> ; Increases concentration in the air/more in air;	[2]
9	(a) A – Cytoplasm; B – Chloroplast; C – Nucleus;	[3]
	(b) Cell wall; Vacuole;	[2]
		5
		6
		6
		5

		AVAILABLE MARKS
10	<p>(a) <math>90 \div 100\,000/0.0009</math> (or <math>0.001</math> 3dp);  <math>1\,742\,000 \times 0.0009</math>;            (1568 = [2])            Accept 1567.8 or 1567</p> <p>(b) (i) Blockage;            In <b>coronary</b> blood vessel;</p> <p style="padding-left: 40px;">(ii) No oxygen/sugar reaches heart/<b>muscle/cells/tissue (organs/cells)</b>;</p> <p>(c) Exercise (regularly);</p>	<p>[2]</p> <p>[2]</p> <p>[1]</p> <p>[1]</p> <p>6</p>
11	<p>(a) Purple;            Red;            Respiration;</p> <p>(b) Control;</p> <p>(c) Size of leaf/type of leaf;            Volume of indicator;            Temperature;            Time;</p>	<p>[3]</p> <p>[1]</p> <p>[2]</p> <p>6</p>
12	<p>(a) Mechanical – Condom/Cap/IUD/coil;            Chemical – Pill/Spermicide;</p> <p>(b) Any <b>one</b> from:            Permanent;            Don't have to remember to take it/use before intercourse;</p> <p>(c) Have to remember to take/side effects;</p> <p>(d) Abstain from intercourse;            During (2–3) days <b>before and after</b> ovulation (/day 14 of cycle);</p>	<p>[2]</p> <p>[1]</p> <p>[1]</p> <p>[2]</p> <p>6</p>
13	<p>(a) A – Uterus;            B – Amnion;            C – Cervix;</p> <p>(b) B – (Amnion) ruptures/bursts;            C – (Cervix) dilates/widens;</p> <p>(c) Contracts;            Pushing baby out;</p>	<p>[3]</p> <p>[2]</p> <p>[2]</p> <p>7</p>

14 (a) 45; 15;	[2]	AVAILABLE MARKS
(b) Energy/heat lost to – Atmosphere/air; Boiling tube/apparatus;	[1]	
(c) Any <b>three</b> from: Gender – males require more energy than females; Age – younger people require more energy than older; Activity – people who are sporty require more energy; Pregnancy – woman needs extra energy for the growth of the foetus;	[3]	
Quality of written communication	[2]	8
<b>Total</b>		<b>80</b>
7311.01	5	