



**General Certificate of Secondary Education
2012**

Science: Biology

Paper 1
Foundation Tier

[G0901]

WEDNESDAY 30 MAY, AFTERNOON

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

			AVAILABLE MARKS
6	(a) Tumour;	[1]	5
	(b) Any one from: Shape/described correctly; Size/described correctly; Cancer cell has thicker membrane/accept converse;	[1]	
	(c) Any two 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]	6
	(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]	6
	(b) Bacteria/fungus;	[1]	
	(c) Produces CO ₂ ; Increases concentration in the air/more in air;	[2]	
9	(a) A – Cytoplasm; B – Chloroplast; C – Nucleus;	[3]	5
	(b) Cell wall; Vacuole;	[2]	

			AVAILABLE MARKS
10	<p>(a) $90 \div 100\,000/0.0009$ (or 0.001 3dp); $1\,742\,000 \times 0.0009$; (1568 = [2]) Accept 1567.8 or 1567</p> <p>(b) (i) Blockage; In coronary blood vessel;</p> <p style="padding-left: 40px;">(ii) No oxygen/sugar reaches heart/muscle/cells/tissue (organs/cells);</p> <p>(c) Exercise (regularly);</p>	<p>[2]</p> <p>[2]</p> <p>[1]</p> <p>[1]</p>	6
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>	6
12	<p>(a) Mechanical – Condom/Cap/IUD/coil; Chemical – Pill/Spermicide;</p> <p>(b) Any one 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 before and after ovulation (/day 14 of cycle);</p>	<p>[2]</p> <p>[1]</p> <p>[1]</p> <p>[2]</p>	6
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>	7

14 (a)	45;	[2]	AVAILABLE MARKS
	15;		
(b)	Energy/heat lost to – Atmosphere/air; Boiling tube/apparatus;	[1]	
(c)	Any three 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
Total			80