



Rewarding Learning

**General Certificate of Secondary Education
2011**

Science: Biology

Paper 1
Foundation Tier

[G0901]

THURSDAY 19 MAY, AFTERNOON

**MARK
SCHEME**

			AVAILABLE MARKS
1	(a) Root	[1]	5
	absorb light/photosynthesis; reproduction/produce seeds;	[1] [1]	
	(b) Support;	[1]	
	Transport water/food;	[1]	
2	(a) Grass, Earthworm, Fox; arrows;	[2]	
	(b) Sun(light); Grass/blackberry;	[1] [1]	
	(c) Mole number would increase;	[1]	
3	(a) A – Oviduct/fallopian tube;	[1]	5
	B – Uterus;	[1]	
	C – Cervix;	[1]	
	(b) To produce eggs/ova;	[1]	
	(c) X in cervix/vagina;	[1]	
4	(a) Quadrat;	[1]	5
	(b) $9 \div 25 \times 100$ (accept 9×4); = 36;	[2]	
	(c) Make sample representative/reduce bias;	[1]	
	(d) Animals move;	[1]	

- 5 (a) Any **TWO** from:
Cytoplasm: more cytoplasm in normal/less in cancer cells;
Nucleus: only one nucleus in normal, more than one in cancer;
 Lighter nucleus in normal, darker in cancer;
 Irregular nucleus in cancer cells;
Cell shape: more rounded in normal, irregular in cancer [2]
- (b) Surgical/chemotherapy/radiotherapy; [1]
- (c) Benign has a capsule/does not spread;
 More easily **removed**; [2]
 (Allow converse for malignant)

5

6 (a)

Change during puberty	Male	Female
Menstruation		
Voice deepens	Yes	No
Development of breasts	No	Yes
Growth of pubic hair	Yes	Yes

[1]

[1]

[1]

- (b) Breakdown of the uterus lining; [1]
 Released **through the vagina**; [1]

5

- 7 (a) (i) Mucus **traps** microbes/dust; [1]
 Cilia **move mucus** (out of lungs); [1]
- (ii) Skin/blood clotting/tears/stomach acid; [1]
- (b) (i) Injection; of dead/weakened microbes; [2]
- (ii) Jenner; [1]

6

			AVAILABLE MARKS
8	(a) Scales;	[1]	6
	Gills;	[1]	
	Not constant;	[1]	
	Internal;	[1]	
	(b) Any TWO from: Reptile shelled (leathery) egg, amphibia jelly egg; Reptile eggs on land, amphibia eggs in water; Reptiles dry scales, amphibia moist skin; (Must be a comparison/comparative term)	[2]	
9	(a) Water;	[1]	5
	Chlorophyll;	[1]	
	Sugar/glucose/starch;	[1]	
(b) Any PAIR [<i>mineral + appropriate use</i>] from: Calcium; Cell walls; OR Magnesium; Chlorophyll; OR Nitrate; Growth/protein production/amino acid production;	[2]		
10	(a) Carbohydrates;	[1]	6
	Proteins;	[1]	
	(b) Protects baby from infection/confers immunity;	[1]	
	(c) Any TWO from: Convenience (correct temp/no sterilising bottles); Maternal bond/security/love; Easier absorbed/digested; Easier to wean; Helps prevent childhood diabetes; Less cost; Help prevent breast/ovarian cancer in mother; (Any two)	[2]	
	(d) May pass virus on to baby/would be in breast milk;	[1]	
11	(a) A – combustion/burning;	[1]	6
	B – photosynthesis;	[1]	
	C – respiration;	[1]	
(b) Animal eats plant; made into animal <u>carbohydrates/fats/proteins</u> ;	[2]		
(c) Coal/natural gas/oil/peat;	[1]		

			AVAILABLE MARKS
12	(a) Dentine;	[1]	6
	(b) Blood [named example]/nerve/neurone;	[1]	
	(c) Bacteria feed on/respire/break down sugars from food; Produce acid which corrodes the enamel ;	[2]	
	(d) Enamel;	[1]	
	(e) Lack of freedom of choice/excess can cause fluorosis;	[1]	
13	(a) A – lens;	[1]	7
	B – cornea;	[1]	
	C – retina;	[1]	
	(b) Optic nerve; carries impulses to brain ;	[2]	
	(c) Pupil dilated;	[1]	
	(d) Eyelid/conjunctiva/eye socket;	[1]	
14	(a) To kill any harmful bacteria/microorganisms;	[1]	8
	(b) Starter bacteria killed by heating;	[1]	
	(c) Any three from: Respiration; fermentation/anaerobic; Feed on sugar; produces acid; multiply/grow;	[3]	
	Quality of written communication	[2]	
	(d) Slows microorganism growth/decay of yoghurt;	[1]	
		Total	80