

GCSE BIOLOGY 2 (NEW) MARK SCHEME - JANUARY 2013

FOUNDATION TIER

Question	Marking details	Marks Available
Q.1 (a)	Turtle dove + <u>greatest</u> decrease/ decreased the most/ highest decrease;	1
(b)	1040;	1
(c) (i)	Turtle dove/ Grey Partridge;	1
(c) (ii)	Pied Flycatcher/ Cuckoo;	1
(d)	Decrease + {fewer/ less} species/ less biodiversity/ species die out/ fewer bird species; NOT fewer birds/ not many species	1
Question Total		[5]

Question	Marking details	Marks Available
Q.2 (a)	(i) A cytoplasm; B <u>cell</u> membrane; C <u>cell</u> wall;	3
	(ii) Chloroplast; Photosynthesis;	2
	(iii) Nucleus (allow chloroplast); NOT vacuole	1
(b)	<u>EM for dead</u> cells/ tissues only;	1
	Question Total	[7]

Question	Marking details	Marks Available
Q.3 (a)	A oesophagus; B pancreas; C liver;	3
(b)	Carbohydrate/ starch; Lipase; glycerol;	3
(c)	Biuret solution (as specification);	1
Question Total		[7]

Question	Marking details	Marks Available
Q.4 (a)	Oxygen <u>and</u> carbon dioxide;	1
(b) (i)	I scale;	1
	II correct plots;	2 (-1 error)
	III line quality;	1
(ii)	I increase then plateau;	1
	II 4 – 6 days;	1
(iii)	Heat/ thermal;	1
(c)	No <u>respiration</u> (in dead peas);	1
(d) (i)	Avoid heat loss (or gain)/ avoid temperature change – due to environment/ retain heat/ prevent heat loss/ stop heat loss/ keep heat in/ insulation/ ORA e.g. glass flask allows heat to escape; NOT contain heat/ keep it warm;	1
(ii)	Prevent growth of micro-organisms/ kill bacteria/ ensure no living {bacteria/ microbe/ fungi/ micro-organism}/ destroy bacteria; NOT get rid of bacteria/ stop microbes respiring;	1
Question Total		[11]

Question	Marking details	Marks Available
Q.5 (a)	(i) Sugar; base;	2
	(ii) A and T;	1
	(iii) Twisted/ (double) helix (as spec)/ spiral;	1
(b)	Amino acids; Protein;	2
	Question 5 Total	[6]

BIOLOGY 2 (NEW) FOUNDATION AND HIGHER TIER

Question	Marking details	Marks Available
Q.6/1 (a)	Meiosis – spelling correct;	1
(b)	40 in each cell;	1
Question Total		[2]

Question	Marking details	Marks Available
Q.7/2 (a)	peristalsis;	1
(b)	<u>Muscles</u> in the wall of the oesophagus <u>contract</u> ; And { <u>push/ force</u> } the food (on to the next section);	2
Question Total		[3]

Question	Marking details	Marks Available
Q.8/3	(a) 45/ 46%;	1
	(b) (i) 65.5/ 66 years;	1
	(ii) Lung cancer/ emphysema/ walls of alveoli rupture/ owtte/ correct ref to damage to cilia/ drying mucus; NOT reference to tar alone/ bronchitis;	1
	(c) Live longer/ could expect to live to 85/ avoid earlier death; NOT less chance of dying; (Live longer) without a (smoking related) {disability/ cancer/ named damage};	2
Question Total		[5]

Question	Marking details	Marks Available
Q.9/4 (a)	To show <u>carbon dioxide</u> / CO ₂ (not CO ²) is needed for <u>photosynthesis/ starch</u> production;	1
(b) (i)	To prevent <u>soil</u> organisms affecting the experiment (OWTTE);	1
(ii)	Absorb carbon dioxide / CO ₂ ;	1
(iii)	Control/ correct ref to using B to compare to A/ to make a comparison;	1
(iv)	Form an air tight seal/ make the apparatus air tight / prevent {gases/ carbon dioxide/ air} going in or out of the apparatus; NOT oxygen (can be neutral);	1
(c)	Destarch/ remove starch;	1
(d) (i)	Apparatus A Colour – brown/ iodine colour + Reason – <u>no starch</u> present/ no photosynthesis ∴ <u>no starch</u> ; (both required for one mark)	[1]
(ii)	Apparatus B Colour – black/ blue black + Reason – <u>starch</u> present/ photosynthesis occurred ∴ <u>starch</u> present; (both required for one mark);	[1]
Question Total		[8]

Question	Marking details	Marks Available
Q.10/5	<p><i>Indicative content</i></p> <p> Diaphragm contracts Diaphragm flattens/moves down Intercostals muscles contract Rib cages moves up and out/raised Thoracic volume/accept chest volume/accept space around the lungs increases Pressure decreases Lungs inflate Air drawn into lungs through nose/nasal passages/trachea/windpipe </p> <p> 5-6 marks The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar. </p> <p> 3-4 marks The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar. </p> <p> 1-2 marks The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar. </p> <p> 0 marks The candidate does not make any attempt or give a relevant answer worthy of credit </p>	[6]
Question Total		