Independent Schools Examinations Board

COMMON ENTRANCE EXAMINATION AT 13+

SCIENCE

BIOLOGY

MARK SCHEME

This is a suggested, not a prescriptive, mark scheme.

Monday 24 January 2011

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Q.	Answer	Mark	Additional Guidance
1. (a)	brown/orange	9	
(b)	antagonistically		
(c)	salmon		
(d)	respire		
(e)	sperm		
(f)	scurvy		
(g)	28 days		
(h)	consumers		
(i)	water		
2.	carbohydrates proteins minerals fibre water	5	
3. (a)	cell wall/vacuole	1	
(b)	photosynthesis	1	
(c)	they are below ground/do not get any light	1	
(d)	large surface area to absorb water/minerals	2	
4. (a) (i)	lungs	1	
(ii)	gills	1	
(b) (i)	in (all) cells/cytoplasm	1	do not accept 'lungs'
(ii)	glucose/sugar + oxygen → water + carbon dioxide + energy	3	deduct 1 mark for each mistake

Q.	Answer	Mark	Additional Guidance
(c)	large surface area thin walls rich blood supply moist walls	2	award 1 mark for each suggestion
5. (a)	carbon dioxide	1	
(b)	oxygen	1	
(c)	chlorophyll/chloroplasts trap sunlight photosynthesis combining of carbon dioxide and water makes sugar/glucose/sucrose this travels to the ripening tomatoes	3	award 1 mark for any one process
(d)	fewer pests warmer control conditions/named example	2	accept other suitable suggestions e.g. water
6. (a)	*amphibian:* moist skin; lays eggs in water *reptile:* dry (scaly) skin; lays eggs on land	2	accept other suitable answers award 1 mark only if no comparison made between reptile and amphibian
(b)	feathers lays hard-shelled eggs	2	accept other suitable answers
(c)	*any suitable answer*	1	e.g. whale
(d)	*any suitable answer*	1	e.g. bat

Q.	Answer	Mark	Additional Guidance
7. (a)	rub inside of cheek with cotton bud rub on to slide add stain/methylene blue cover slip	4	
(b)	place slide on stage adjust mirror/lamp focus microscope	2	any two
8. (a)	12	1	
(b)	woodlouse/woodlice	1	
(c)	centipede	1	
(d)	soil pH was very low in pine wood/acid soil in pine wood	1	
(e)	prevents build up of dead matter/organisms recycles nutrients/named example	2	
9. (a)	they are at the beginning of the food chain/ can photosynthesise	1	
(b)	flow/transfer of energy	1	accept 'what eats what'
(c)	octopus	1	
(d)	starfish/crab/prawn/small fish	1	any one of these
(e)	collecting tritons increases population of starfish this leads to increased feeding on coral reefs (leading to their destruction)	2	
(f)	reduce/stop collection of triton shells outlaw selling of triton shells reduce starfish population	2	accept any other suitable suggestions
Total		60	