Independent Schools Examinations Board

COMMON ENTRANCE EXAMINATION AT 13+

SCIENCE

BIOLOGY

MARK SCHEME

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

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Q.	Answer	Mark	Additional Guidance
1. (a)	reptile	10	
(b)	being active at night		
(c)	producers		
(d)	the release of energy from food		
(e)	scurvy		
(f)	are the sites of photosynthesis		
(g)	flow of energy		
(h)	a sperm enters an ovum		
(i)	break down large food molecules		
(j)	limewater		
2.	bone(s) organs tendons biceps biceps triceps antagonistic	7	accept sound alternatives
3. (a)	*boys:* underarm hair/pubic hair increased musculature penis/genital growth voice breaks *girls:* menstruation/ovaries start to release eggs underarm hair/pubic hair breast growth/enlargement hips (start to) widen	3 3	accept other valid answers reject reference to mood swings

Q.	Answer	Mark	Additional Guidance
(b)	**A** – sperm duct/vas deferens **B** – testis/testicle/testes **C** – urethra	3	
(c)	*structure **A**:* carry/transport sperm *structure **B**:* produce/store sperm	1 1	
4. (a)	*y-axis: sensible linear scale* *x-axis: years labelled correctly* *bars drawn correctly*	1 1 3	deduct 1 mark for each mistake deduct 1 mark for poor presentation, i.e. not using a pencil/ruler
(b)	food incorrectly stored/not in fridge not washing food properly not washing hands not defrosting food properly reheating food not cooking food for long enough not cooking food at a high enough temperature	3	award 1 mark for each reasonable suggestion accept other valid answers
5. (a)	water + carbon dioxide → glucose/sugar + oxygen	2	deduct 1 mark for each mistake
(b)	(sun)light	1	

Q.	Answer	Mark	Additional Guidance
(c) (i)	negative/yellow/brown/orange	1	
(ii)	no light no carbon dioxide	2	
(iii)	tube **A** had more light/tracing paper reduced the light available to the plant in tube **B**	1	
(iv)	boil leaf in water (to soften) boil leaf in ethanol (to remove chlorophyll) rinse in cold water place leaf on white tile/petri dish add iodine solution *safety:* take care when boiling ethanol/use waterbath take care with boiling water	4	must give a sensible safety point to gain 4 marks
6. (a)	2 pairs of wings 3 body parts 3 pairs of legs	3	
(b) (i)	an animal killing/hunting and feeding on another organism	1	
(ii)	predation has reduced the size of the population of butterflies faster than they have been able to reproduce	1	
(c)	to find: more food more favourable climate mates/breeding sites	2	accept any two sensible suggestions

Q.	Answer	Mark	Additional Guidance
(d)	*up to three general adaptations for an animal to its habitat* *up to two ways it adapts to conditions during one day (24-hour period)* *up to two ways it adapts to different seasons in the year*	6	award 1 mark for each adaptation *or* simply mark on 'feel factor', i.e. a comprehensive, well-written answer showing an excellent understanding of adaptation would receive 6 marks, and so on…
Total		**60**	