

Question number	Answer			Marks	
1 (a) (i)	Distance pins apart			2	
	Area	0.5 cm	1.0 cm		2.0 cm
	Finger tips	✓ ✓ ✓ X ✓ ✓ ✓ X X	✓ ✓ ✓ ✓ ✓ X ✓ ✓ X		✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
	Percentage correct	70	(8		(100)
	Back of hand	✓ X ✓ ✓ X X X X ✓ X	✓ ✓ X ✓ X ✓ X ✓ ✓ X		✓ ✓ ✓ ✓ ✓ X ✓ X ✓ ✓
	Percentage correct	(40)	60		(80)
	Wrist	X X ✓ X X X X X X	✓ X ✓ X ✓ ✓ X ✓ ✓ X		X ✓ X ✓ ✓ X ✓ ✓ ✓ ✓
	Percentage correct	10	(60)		70;;

3 or 4 correct = 2
 1 or 2 correct = 1

Question number	Answer	Marks
1 (b)	S size at least half grid; A1 axis labelled %/percentage (correct); A2 axis with % correct linear; K1 finger, hand and wrist / F,H and W; K2 0.5, 1, and 2;	5
(c)	finger tips; more correct answers / most success / eq; at each distance apart / at 0.5 apart;	3
(d)	nerve endings / receptors / nerves / neurones / eq; more / closer together / closer to skin surface / eq; skin thickness; used for touch / to feel / use of fingers / eq;	2
(e)	fair test / easier or harder to detect / valid (comparison) / eq; Ignore control / reliable / accurate;	1

Total 13 Marks

Question number	Answer	Notes	Marks
2 (a) (i)	thistle;		1
(ii)	song thrush;		1
(b) (i)	A iris / cornea; B pupil;		2
(ii)	1. sclera / sclerotic; 2. optic nerve; 3. lens / cornea;		3
(c) (i)	number/amount/group/all of organisms of same <u>species</u> ;	allow correct binomial name of a species ignore type	1

(c)(ii)	<ol style="list-style-type: none"> 1. <u>variation / variety</u>; 2. <u>mutatio</u> 3. (white snails) <u>survive</u> / <u>survival</u> / <u>survival of the fittest</u>; 4. not seen/camouflaged / not eaten / not killed; 5. reproduce / breed; 6. pass on gene/allele/DNA (for light shell) to offspring; 	<p>allow converse for black snails</p> <p>ignore do not die</p>	<p>Max 5</p>
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Total 13 marks

Question number	Answer	Notes	Marks
3 (a)	1 <u>human</u> gene / <u>human</u> DNA / <u>human</u> allele; 2 restriction enzyme; 3 <u>plasmid</u> ; 4 <u>vector</u> ; 5 <u>same</u> restriction enzyme; 6 <u>ligase</u> ; 7 <u>recombinant</u> plasmid / <u>recombinant</u> DNA;	allow gene that codes for growth hormone	Max 5
(b) (i)	released from gland / endocrine; travels in blood; to target (cells/organs) / eq; effect / response / coordination / controls / causes change / eq;	allow described effect	2
(ii)	1 cow with high milk yield / eq; 2 male/bull with high milk yield daughters or high milk yield mother / eq; 3 reproduce / mate / breed / AI / eq; 4 repeat process with high milk yield offspring / many generations / eq;	cows with high yield milk are allowed to reproduce = 2 use sperm from bull	Max 3
		Total	10