

Q1. (2018)

6		B ✓	1	1.1	
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Q2 (2018) – 22b

A)

(b)	(i)	person X is short-sighted ✓ person Y is long-sighted ✓	2	2 x 2.1	ALLOW person X is myopic / has myopia ALLOW person Y is hypermetropic / has hypermetropia (hyperopia)
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B)

(b)	(i)	person X is short-sighted ✓ person Y is long-sighted ✓	2	2 x 2.1	ALLOW person X is myopic / has myopia ALLOW person Y is hypermetropic / has hypermetropia (hyperopia)
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Q3 (2019) – 16e

16	(e)	(sub-cellular) structures were not clearly visible until electron microscopy ✓	1	1.1	ALLOW idea that smaller organelles/structures can now be seen by electron microscope
					ALLOW electron microscopes have a higher resolution / magnification ALLOW (sub-cellular) structures/organelles shown in more detail/easier to see

Q4 (2020)

A)

22	(a)	(i)	The higher the BMI then the higher the mass of urea (in urine) / ORA ✓	1	2.1	ALLOW positive correlation IGNORE they are directly proportional IGNORE linear relationship
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B)

		(ii)	FIRST CHECK THE ANSWER ON ANSWER LINE If answer = 0.0016 (g/cm³) award 2 marks 1.6 ÷ 1000 ✓ = 0.0016 (g/cm ³) ✓	2	2.2	ALLOW 1.6 x 10 ⁻³
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C)

		(iii)	idea that there is a greater increase in mass of urea as BMI increases in Fig 22.2/second graph ✓ idea that first graph/22.1 has stronger correlation / more points closer to line of best fit / less spread of data ✓	2	2 x 3.2b	ALLOW larger mass of urea per BMI gained ALLOW line is steeper/higher gradient in Fig22.2 IGNORE higher BMI for greater mass of urea ALLOW second graph does not follow the line of best fit so closely
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D)

(b)	<table><tr><td>Bowman's capsule</td><td>1</td></tr><tr><td>Collecting duct</td><td>5</td></tr><tr><td>Proximal convoluted tubule</td><td>2</td></tr><tr><td>Loop of Henlé</td><td>3</td></tr><tr><td>Second coiled region</td><td>4</td></tr></table> <p>✓✓✓</p>	Bowman's capsule	1	Collecting duct	5	Proximal convoluted tubule	2	Loop of Henlé	3	Second coiled region	4	3	3 x 1.1	5 before 2 ✓ 2 before 3 ✓ 3 before 4 ✓
Bowman's capsule	1													
Collecting duct	5													
Proximal convoluted tubule	2													
Loop of Henlé	3													
Second coiled region	4													

Q5. (2021)

6		D✓	1	1.1	
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Q6. (2021)

A)

	(d)	FIRST CHECK THE ANSWER ON ANSWER LINE If answer = 36.8(%) award 3 marks $(37 - 11) = 26$ ✓ $26 - 19 / 19 \times 100$ ✓ $36.8 (\%)$ ✓	3	3 x 2.2	ALLOW 36.842(%) for 2 marks Clear evidence of correct rounding to 1 d.p. of incorrect answer = 1 mark
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B)

	(e)	Increases (breathing rate) ✓ Idea different exercises/star jumps effects breathing rate more ✓	2	2 x 3.2b	ALLOW different exercises/star jumps increase the breathing rate more = 2
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C)

	(f)	(i) Any two from: Age of person exercising ✓ Health/size/fitness of person exercising ✓ Idea sample size is too small / only tested 2 people ✓ Only did the experiment once ✓ Idea of inaccuracy in measure breathing rate ✓	2	2 x 3.1b	ALLOW difficulty in measuring own breathing rate / not recording continuous breathing rate / only recording breathing rate
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D)

		(ii) Any one from: Same age ✓ Same fitness/size/health ✓ Bigger sample size ✓ Repeat experiment ✓ Idea use independent observer to measure breathing rate ✓	1	3.3b	ALLOW idea of measuring breathing volumes with face masks on treadmill
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Q7. (2022)

12	A✓	1	2.1	
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Q8. (2023)

A)

18	(a)	(i)	Medulla ✓	1	2.1	
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B)

		(ii)	Cortex ✓	1	2.1	
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C)

		(iii) Artery ✓	1	2.2	DO NOT ALLOW more than one answer circled
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D)

	(b)	(i) First check the answer in table / on answer line If answer = 1.5 (litres) award 2 marks (Water gain = $2.2 + 0.3 = 2.5$ (litres) PLUS (Water loss = $0.9 + 0.1 = 1.0$ (litres) ✓ $2.5 - 1.0 = 1.5$ ✓	2	2 x 2.2	ALLOW one mark for clear evidence of incorrect water loss gain or loss with a correctly calculated difference
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E)

		(ii) Any three from: (Water lost) in sweat (when running/exercising) ✓ The water concentration in blood falls ✓ The kidney (tubules) will reabsorb more water (into the blood) ✓ Making the urine more concentrated ✓ Lower volume of urine ✓	3	3 x 2.1	ALLOW water potential in blood falls ALLOW the kidney (tubules) becomes more permeable Additional marking point ADH secreted from pituitary gland for 1 mark
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Q9. (2024)

	(b)	Idea oxygen to reach the chick / carbon dioxide produced by the chick to escape ✓	1	2.1	ALLOW chick can respire IGNORE gases in and out / breathing
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