Levels of organisation (food chains, webs, predator–prey cycles)

Q1. (2019)

A)

05.1	secondary consumer		1	AO2 4.7.2.1

B)

05.2	increase		1	AO3 4.7.1.1

C)

05.3 view with **05.2**	(because) the blackflies are not being eaten	allow idea of other predators (of blackflies) if 'stay the same' selected in question **5.2**	1	AO3 4.7.1.1

Q2. (2021)

A)

03.1	nut(s) → bird(s) → cat(s)	allow **1** mark for organisms in correct order (left to right) but arrows incorrect or missing allow **2** marks for cat(s) ← bird(s) ← nut(s) do **not** accept cat(s)bird(s) nut(s) do **not** accept cat(s) →bird(s) →nut(s)	2	AO2 4.7.2.1

B)

03.2	answer must be consistent with food chain given in question **03.1**	if no answer to question **03.1** allow bird(s)	1	AO2 4.7.2.1

Q3. (2024)

05.1	alga(e) → limpet(s) → crab(s) direction of arrows must be correct		1	AO2 4.7.2.1

Q4. (2024)

A)

05.2	(50 (cm) × 50 (cm) =) 2500 (cm^2)	allow conversion cm to m (50 ÷ 100 =) 0.5 (m)	1	AO2 4.7.2.1 RPA7
	($\frac{2500}{100 \times 100}$ =) 0.25 (m^2)	allow ¼ (m^2) allow (0.5 × 0.5 =) 0.25 (m^2) for **2** marks allow (½ × ½ =) ¼ (m^2) for **2** marks	1	

B)

05.3	(1800 × $\frac{2}{100}$ =) 36 (m^2)	allow (1800 × 0.02 =) 36 (m^2)	1	AO2 4.7.2.1 RPA7
	($\frac{36}{0.25}$ =) 144 (quadrats)	allow (36 × 4 =) 144 (quadrats) allow a correct calculation of number of quadrats with an incorrect calculation of 2% of 1800 allow ecf from question **05.2**	1	

C)

05.4	(location of sample will be) biased / chosen **or** (location of sample will be) limited by how far students can throw	allow students may aim for limpets allow students may aim to avoid limpets allow students may stand / start near groups of limpets	1	AO1 4.7.2.1 RPA7
	(therefore) results will not be representative (of (actual) abundance)	allow population size will be too high / low	1	

D)

05.5	tape measure along two (perpendicular) sides (of sea shore) **or** allocate co-ordinates (to sea shore) **or** divide area into a grid		1	AO1 4.7.2.1 RPA7
	use random number generator	allow description of generating random number(s) for example pulling numbers from container do **not** accept throwing quadrats	1	